July 5
CATALOGUE

OF THE SPECIMENS OF

MAMMALIA

IN

THE COLLECTION

OF THE

BRITISH MUSEUM.

PART III.
UNGULATA FURCIPEDA.

LONDON:
PRINTED BY ORDER OF THE TRUSTEES.
1852.
PREFACE.

The chief object in preparing the present Synopsis has been, to give at one view a complete Catalogue of all the specimens of Mammalia, and their Osteological remains, at present in the British Museum Collection, and an account of the species known to exist in other collections, but which are at present desiderata in the British Museum, so as to enable travellers, collectors, and others, to assist in completing the National Collection. For this purpose, a short description has been given of all the genera and species at present known to exist in the different museums and private collections, and at the end of each description is added an enumeration, stating the state, age, country, and other peculiarities of each specimen of the kind in the Museum Collection; or when the species is not at present in that Collection, the museum, in which it has been observed, is added after the general habitat of the species.

The different individuals of each species contained in the British Museum Collection are indicated by the letters a, b, c, &c. When the age of the specimen is not stated, it is to be understood that it is full-grown, or nearly so; when other-
wise, its state is marked immediately after the letter by which it is distinguished; and if the sexes are known, it is stated to be male or female. These particulars are followed by the habitat, which is given as particularly as the materials possessed by the Museum permit. Those specimens which have been presented to the Museum have the name of the donor marked immediately after the habitat. When there is no such indication, the specimens have been either purchased or procured in exchange; and in this case, whenever the place or person from whence they have been received gives authenticity to the specimen, or adds anything to their history, they are noted as being from such or such a collection.

The various synonyms have been given to the different divisions of the class, and to the genera and subgenera and species, and a reference made to the works in which they have been characterized or described.

In the adoption of the names for these divisions and for the names of the genera and species, it has been thought right to use, whenever it was possible, that which was first used for the purpose. As far as regards the specific name, there is comparatively little difficulty in the application of this simple rule; but ordinal, and especially generic names, have been used by different authors in senses so widely different, and the groups which they are intended to designate have been so variously extended and restricted, that it is no easy matter to determine, where several names have been used, which of them ought to be preferred. As every original observer will constantly make use of characters which others may have overlooked, or not thought of so much importance as further researches have shown to belong to it, even when a generic name is used, it will of necessity be often employed in a different sense, or with a more restricted
or very rarely a more extended meaning than its original proposer applied to it. If this was not allowed, many new names must be added to the list of genera, which is already so overburdened with synonyma. In those cases where the two sexes of the same species, or any particular individual state or variety belonging to it, have been differently named, the names belonging exclusively to the state or individual described are placed after the reference to the specimens to which they apply. To determine with accuracy the names and synonyma of the species, the various specimens, skeletons and other remains of Hoofed animals in the Museums of the Zoological Society, of the East India Company, of the Naval Hospital at Haslar, and of the different local Societies, especially those of Liverpool, Bristol, &c., and the various continental Museums of Paris, Leyden, Berlin, Vienna, and Frankfort, have been personally examined, and in many cases the specimens contained in those Museums have been sent to the Museum, so that they could be actually compared with specimens in the Museum Collection.

JOHN EDWARD GRAY.

British Museum,
1st December, 1852.
<table>
<thead>
<tr>
<th>Page</th>
<th>Order V. UNGULATA</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1. Furcipeda</td>
<td>8</td>
</tr>
<tr>
<td>2</td>
<td>Fam. 1. Bovidae</td>
<td>8</td>
</tr>
<tr>
<td>3</td>
<td>I. Tribe 1. Bovina</td>
<td>12</td>
</tr>
<tr>
<td>4</td>
<td>A. Levicornia</td>
<td>15</td>
</tr>
<tr>
<td>5</td>
<td>I. Boveae</td>
<td>15</td>
</tr>
<tr>
<td>6</td>
<td>A. 1. Bos</td>
<td>16</td>
</tr>
<tr>
<td>7</td>
<td>X 1. B. Taurus</td>
<td>17</td>
</tr>
<tr>
<td>8</td>
<td>2. B. Indicus</td>
<td>21</td>
</tr>
<tr>
<td>9</td>
<td>3. B. Dante</td>
<td>22</td>
</tr>
<tr>
<td>10</td>
<td>2. Bubalus</td>
<td>23</td>
</tr>
<tr>
<td>11</td>
<td>1. B. brachycerus</td>
<td>24</td>
</tr>
<tr>
<td>12</td>
<td>2. B. Buffelus</td>
<td>25</td>
</tr>
<tr>
<td>13</td>
<td>3. B. Caffer</td>
<td>28</td>
</tr>
<tr>
<td>14</td>
<td>3. Anoa</td>
<td>29</td>
</tr>
<tr>
<td>15</td>
<td>X 1. A. depressicornis</td>
<td>29</td>
</tr>
<tr>
<td>16</td>
<td>4. Bibos</td>
<td>30</td>
</tr>
<tr>
<td>17</td>
<td>1. B. frontalis</td>
<td>31</td>
</tr>
<tr>
<td>18</td>
<td>2. B. Gaurus</td>
<td>32</td>
</tr>
<tr>
<td>19</td>
<td>3. B. Banting</td>
<td>35</td>
</tr>
<tr>
<td>20</td>
<td>5. Bison</td>
<td>35</td>
</tr>
<tr>
<td>21</td>
<td>1. B. Bonassus</td>
<td>36</td>
</tr>
<tr>
<td>22</td>
<td>2. B. Americanus</td>
<td>38</td>
</tr>
<tr>
<td>23</td>
<td>B. 6. Poephagus</td>
<td>39</td>
</tr>
<tr>
<td>24</td>
<td>1. P. grunniens</td>
<td>40</td>
</tr>
<tr>
<td>25</td>
<td>7. Ovibos</td>
<td>42</td>
</tr>
<tr>
<td>26</td>
<td>1. O. moschatus</td>
<td>43</td>
</tr>
<tr>
<td>27</td>
<td>8. Budorcas</td>
<td>44</td>
</tr>
<tr>
<td>28</td>
<td>1. B. taxicola</td>
<td>45</td>
</tr>
<tr>
<td>29</td>
<td>II. Antilopeae</td>
<td>45</td>
</tr>
<tr>
<td>30</td>
<td>A. 1. Saiga</td>
<td>51</td>
</tr>
<tr>
<td>31</td>
<td>X 1. S. Tartarica</td>
<td>51</td>
</tr>
<tr>
<td>32</td>
<td>2. Pantholops</td>
<td>52</td>
</tr>
<tr>
<td>33</td>
<td>1. P. Hodgsonii</td>
<td>53</td>
</tr>
<tr>
<td>34</td>
<td>3. Procapra</td>
<td>54</td>
</tr>
<tr>
<td>35</td>
<td>1. P. gutturosa</td>
<td>54</td>
</tr>
<tr>
<td>36</td>
<td>2. P. pieticauda</td>
<td>55</td>
</tr>
<tr>
<td>37</td>
<td>4. Gazella</td>
<td>55</td>
</tr>
<tr>
<td>38</td>
<td>X 1. G. Dorcas</td>
<td>55</td>
</tr>
<tr>
<td>39</td>
<td>2. G. Isabella</td>
<td>57</td>
</tr>
<tr>
<td>40</td>
<td>3. G. subgutturosa</td>
<td>58</td>
</tr>
<tr>
<td>41</td>
<td>4. G. Semmeringii</td>
<td>59</td>
</tr>
<tr>
<td>42</td>
<td>5. G. Mohr</td>
<td>59</td>
</tr>
<tr>
<td>43</td>
<td>6. G. ruficollis</td>
<td>60</td>
</tr>
<tr>
<td>44</td>
<td>7. G. rufifrons</td>
<td>60</td>
</tr>
<tr>
<td>45</td>
<td>5. Tragops</td>
<td>61</td>
</tr>
<tr>
<td>46</td>
<td>1. T. Bennetii</td>
<td>62</td>
</tr>
<tr>
<td>47</td>
<td>6. Antidorcas</td>
<td>63</td>
</tr>
<tr>
<td>48</td>
<td>1. A. Euchore</td>
<td>63</td>
</tr>
<tr>
<td>49</td>
<td>7. Aepyceros</td>
<td>64</td>
</tr>
<tr>
<td>50</td>
<td>1. A. Melampus</td>
<td>65</td>
</tr>
<tr>
<td>51</td>
<td>8. Antilope</td>
<td>66</td>
</tr>
<tr>
<td>52</td>
<td>1. A. bezaoartica</td>
<td>66</td>
</tr>
<tr>
<td>53</td>
<td>9. Tetracerus</td>
<td>67</td>
</tr>
<tr>
<td>54</td>
<td>1. T. quadricornis</td>
<td>68</td>
</tr>
<tr>
<td>55</td>
<td>2. T. Iodes</td>
<td>69</td>
</tr>
<tr>
<td>56</td>
<td>3. T. paccervis</td>
<td>69</td>
</tr>
<tr>
<td>57</td>
<td>4. T. subquadricornatus</td>
<td>70</td>
</tr>
<tr>
<td>58</td>
<td>10. Calotragus</td>
<td>70</td>
</tr>
<tr>
<td>59</td>
<td>1. C. campestris</td>
<td>71</td>
</tr>
<tr>
<td>60</td>
<td>2. C. melanotis</td>
<td>72</td>
</tr>
<tr>
<td>61</td>
<td>11. Scopophorus</td>
<td>73</td>
</tr>
<tr>
<td>62</td>
<td>1. S. Ourebi</td>
<td>73</td>
</tr>
<tr>
<td>63</td>
<td>2. S. montanus</td>
<td>74</td>
</tr>
<tr>
<td>64</td>
<td>12. Oreotragus</td>
<td>74</td>
</tr>
<tr>
<td>65</td>
<td>1. O. saltatrix</td>
<td>74</td>
</tr>
</tbody>
</table>
### Systematic Index

<table>
<thead>
<tr>
<th>Page</th>
<th>13. Nesotragus</th>
<th>1. N. moschatus</th>
</tr>
</thead>
<tbody>
<tr>
<td>75</td>
<td>76</td>
<td>76</td>
</tr>
<tr>
<td>14. Neotragus</td>
<td>1. N. Saltianus</td>
<td></td>
</tr>
<tr>
<td>75</td>
<td>76</td>
<td></td>
</tr>
<tr>
<td>15. Cephalophus</td>
<td>1. C. quadriscopa</td>
<td></td>
</tr>
<tr>
<td>76</td>
<td>77</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. C. Grimmia</td>
<td></td>
</tr>
<tr>
<td></td>
<td>78</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. C. Campbelliae</td>
<td></td>
</tr>
<tr>
<td></td>
<td>80</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4. C. Burchellii</td>
<td></td>
</tr>
<tr>
<td></td>
<td>81</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5. C. Madoqua</td>
<td></td>
</tr>
<tr>
<td></td>
<td>82</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6. C. coronatus</td>
<td></td>
</tr>
<tr>
<td></td>
<td>82</td>
<td></td>
</tr>
<tr>
<td></td>
<td>7. C. sylvilcux</td>
<td></td>
</tr>
<tr>
<td></td>
<td>83</td>
<td></td>
</tr>
<tr>
<td></td>
<td>8. C. Ógilbíi</td>
<td></td>
</tr>
<tr>
<td></td>
<td>83</td>
<td></td>
</tr>
<tr>
<td></td>
<td>9. C. badius</td>
<td></td>
</tr>
<tr>
<td></td>
<td>84</td>
<td></td>
</tr>
<tr>
<td></td>
<td>10. C. dorsalis</td>
<td></td>
</tr>
<tr>
<td></td>
<td>84</td>
<td></td>
</tr>
<tr>
<td></td>
<td>11. C. niger</td>
<td></td>
</tr>
<tr>
<td></td>
<td>84</td>
<td></td>
</tr>
<tr>
<td></td>
<td>12. C. Natalensis</td>
<td></td>
</tr>
<tr>
<td></td>
<td>85</td>
<td></td>
</tr>
<tr>
<td></td>
<td>13. C. rufilatus</td>
<td></td>
</tr>
<tr>
<td></td>
<td>85</td>
<td></td>
</tr>
<tr>
<td></td>
<td>14. C. Maxwelli</td>
<td></td>
</tr>
<tr>
<td></td>
<td>86</td>
<td></td>
</tr>
<tr>
<td></td>
<td>15. C. pygmea</td>
<td></td>
</tr>
<tr>
<td></td>
<td>87</td>
<td></td>
</tr>
<tr>
<td></td>
<td>16. C. melanorheus</td>
<td></td>
</tr>
<tr>
<td></td>
<td>88</td>
<td></td>
</tr>
<tr>
<td></td>
<td>17. C. punctulatus</td>
<td></td>
</tr>
<tr>
<td></td>
<td>88</td>
<td></td>
</tr>
<tr>
<td></td>
<td>18. C. Whitfieldii</td>
<td></td>
</tr>
<tr>
<td></td>
<td>88</td>
<td></td>
</tr>
<tr>
<td>16. Nanotragus</td>
<td>1. N. perpusillus</td>
<td></td>
</tr>
<tr>
<td>89</td>
<td>89</td>
<td></td>
</tr>
<tr>
<td>17. Pelea</td>
<td>90</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1. P. Capreola</td>
<td></td>
</tr>
<tr>
<td>90</td>
<td>90</td>
<td></td>
</tr>
<tr>
<td>18. Eleotragus</td>
<td>1. E. arundinacens</td>
<td></td>
</tr>
<tr>
<td>91</td>
<td>91</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. E. reduncus</td>
<td></td>
</tr>
<tr>
<td>94</td>
<td>94</td>
<td></td>
</tr>
<tr>
<td>? Raphicerus</td>
<td>95</td>
<td></td>
</tr>
<tr>
<td>19. Adenota</td>
<td>96</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1. A. Kob</td>
<td></td>
</tr>
<tr>
<td>96</td>
<td>96</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. A. Lechée</td>
<td></td>
</tr>
<tr>
<td>98</td>
<td>98</td>
<td></td>
</tr>
<tr>
<td>20. Kobus</td>
<td>99</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1. K. ellipsipyrnum</td>
<td></td>
</tr>
<tr>
<td>99</td>
<td>99</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. K. Sing-Sing</td>
<td></td>
</tr>
<tr>
<td>99</td>
<td>99</td>
<td></td>
</tr>
<tr>
<td>21. Hippotragus</td>
<td>1. H. leucophaeus</td>
<td></td>
</tr>
<tr>
<td>102</td>
<td>102</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. H. niger</td>
<td></td>
</tr>
<tr>
<td>104</td>
<td>104</td>
<td></td>
</tr>
<tr>
<td>22. Oryx</td>
<td>1. O. Gazella</td>
<td></td>
</tr>
<tr>
<td>105</td>
<td>105</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. O. Beisa</td>
<td></td>
</tr>
<tr>
<td>106</td>
<td>106</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. O. Leucoryx</td>
<td></td>
</tr>
<tr>
<td>107</td>
<td>107</td>
<td></td>
</tr>
<tr>
<td>23. Addax</td>
<td>1. A. nasomaculatus</td>
<td></td>
</tr>
<tr>
<td>108</td>
<td>108</td>
<td></td>
</tr>
<tr>
<td>24. Capricornis</td>
<td>1. C. Sumatrensis</td>
<td></td>
</tr>
<tr>
<td>110</td>
<td>110</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. C. Bubalina</td>
<td></td>
</tr>
<tr>
<td></td>
<td>111</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. C. ? crispa</td>
<td></td>
</tr>
<tr>
<td>112</td>
<td>112</td>
<td></td>
</tr>
<tr>
<td>25. Nemorhedus</td>
<td>1. N. Goral</td>
<td></td>
</tr>
<tr>
<td>112</td>
<td>112</td>
<td></td>
</tr>
<tr>
<td>26. Mazama</td>
<td>1. M. Americana</td>
<td></td>
</tr>
<tr>
<td>114</td>
<td>114</td>
<td></td>
</tr>
<tr>
<td>27. Rupicapra</td>
<td>1. R. Tragus</td>
<td></td>
</tr>
<tr>
<td>115</td>
<td>115</td>
<td></td>
</tr>
<tr>
<td>28. Antilocapra</td>
<td>1. A. Americana</td>
<td></td>
</tr>
<tr>
<td>116</td>
<td>117</td>
<td></td>
</tr>
<tr>
<td>29 &amp; 30. Connochetes</td>
<td>1. C. Gnu</td>
<td></td>
</tr>
<tr>
<td>119</td>
<td>119</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. C. Gorgon</td>
<td></td>
</tr>
<tr>
<td>121</td>
<td>121</td>
<td></td>
</tr>
<tr>
<td>31. Alcelaphus</td>
<td>1. A. Bubalis</td>
<td></td>
</tr>
<tr>
<td>122</td>
<td>123</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. A. Caama</td>
<td></td>
</tr>
<tr>
<td>124</td>
<td>124</td>
<td></td>
</tr>
<tr>
<td>32. Damalis</td>
<td>1. D. lunatus</td>
<td></td>
</tr>
<tr>
<td>125</td>
<td>125</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. D. Senegalensis</td>
<td></td>
</tr>
<tr>
<td></td>
<td>126</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. D. Pygarga</td>
<td></td>
</tr>
<tr>
<td></td>
<td>127</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4. D. albifrons</td>
<td></td>
</tr>
<tr>
<td></td>
<td>129</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5. D.? Zebra</td>
<td></td>
</tr>
<tr>
<td></td>
<td>129</td>
<td></td>
</tr>
<tr>
<td></td>
<td>B. Angulicornia</td>
<td></td>
</tr>
<tr>
<td></td>
<td>131</td>
<td></td>
</tr>
<tr>
<td></td>
<td>III. Strepsicerea</td>
<td></td>
</tr>
<tr>
<td></td>
<td>131</td>
<td></td>
</tr>
<tr>
<td>1. Strepsiceros</td>
<td>1. O. Canna</td>
<td></td>
</tr>
<tr>
<td>132</td>
<td>134</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. O. Derbianus</td>
<td></td>
</tr>
<tr>
<td>135</td>
<td>135</td>
<td></td>
</tr>
<tr>
<td>3. Tragelaphus</td>
<td>1. T. Eurycerus</td>
<td></td>
</tr>
<tr>
<td>136</td>
<td>136</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. T. Angasii</td>
<td></td>
</tr>
<tr>
<td></td>
<td>137</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. T. scripta</td>
<td></td>
</tr>
<tr>
<td></td>
<td>138</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4. T. Decula</td>
<td></td>
</tr>
<tr>
<td></td>
<td>139</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5. T. sylvatica</td>
<td></td>
</tr>
<tr>
<td></td>
<td>139</td>
<td></td>
</tr>
</tbody>
</table>
4. Portax ........................................ 140
   1. P. Tragocamelus ........................................ 141

IV. Capreae ........................................ 142
1. Hemitragus ........................................ 144
   1. H. Jemlaicus ........................................ 144

2. Kemas ........................................ 146
   1. K. Warryato ........................................ 146

3. Ægoceros ........................................ 147
   Æ. Pyrenaica ........................................ 147
   2. Æ. Caucasica ........................................ 148

4. Capra ........................................ 149
   ×1. C. Ibex ........................................ 149
   ×2. C. Sibírica ........................................ 150
3. C. Himalayana ........................................ 150
4. C. lævicornis ........................................ 151
5. C. Nubiana ........................................ 151
6. C. Valie ........................................ 152

5. Hircus ........................................ 152
   1. H. Ægagrus ........................................ 153

V. Oveae ........................................ 160
1. Ovis ........................................ 161
   ×1. O. Aries ........................................ 161

2. Caprovis ........................................ 171
   1. C. Vignei ........................................ 172
   2. C. Orientalis ........................................ 172
   ×3. C. Musimon ........................................ 173
4. C. Argali ........................................ 174
5. C. Canadensis ........................................ 176

3. Pseudois ........................................ 177
   1. P. Nahoor ........................................ 177

4. Ammotragus ........................................ 179
   ×1. A. Tragelaphus ........................................ 179

Tribe 2. Giraffina ........................................ 180
1. Giraffa ........................................ 180
   1. G. Camelopardalis ........................................ 181

II. Tribe 3. Cervina ........................................ 182

1. Alceæ ........................................ 186

1. Alces ........................................ 186
   ×1. A. Malchis ........................................ 187
2. Rangerinae ........................................ 188

1. Tarandus ........................................ 188
   ×1. T. rugifer ........................................ 189

3. Elaphineae ........................................ 193
   1. Cervus ........................................ 193
      1. C. Canadensis ........................................ 193
      2. C. Elaphus ........................................ 195
      3. C. Barbarus ........................................ 197
      4. C. Wallachii ........................................ 197
      5. C. affinis ........................................ 199
      6. C. Sika ........................................ 200

2. Dama ........................................ 200
   ×1. D. vulgaris ........................................ 200

4. Rusineae ........................................ 201
   1. Panolia ........................................ 202
      1. P. Eldii ........................................ 202

2. Rucervus ........................................ 203
   1. R. Duvaucellii ........................................ 203

3. Rusa ........................................ 205
   1. R. Aristotelis ........................................ 205
   2. R. Dimorpho ........................................ 209
   ×3. R. hippelaphus ........................................ 209
   4. R. Equinus ........................................ 210
   5. R. Peronii ........................................ 211
   6. R. Philippinus ........................................ 211
   7. R. lepida? ........................................ 212

4. Axis ........................................ 212
   ×1. A. maculata ........................................ 212
   2. A. pseudaxis ........................................ 215

5. Hyelaphus ........................................ 215
   1. H. porcinus ........................................ 215

6. Cervulus ........................................ 217
   1. C. vaginalis ........................................ 217
   ×2. C. moschatus ........................................ 218
   3. C. Reevesii ........................................ 220
<table>
<thead>
<tr>
<th>Family</th>
<th>Subfamily</th>
<th>Genus</th>
<th>Species</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Capreolina</strong></td>
<td></td>
<td>Capreolus</td>
<td>Capreolus</td>
<td>221</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1. Capreolus</td>
<td>221</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>× 1. C. Caprae</td>
<td>222</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>× 2. C. pygargus</td>
<td>223</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Blastocerus</td>
<td>Blastocerus</td>
<td>223</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1. B. paludosus</td>
<td>224</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2. B. campestris</td>
<td>224</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Furcifer</td>
<td>Furcifer</td>
<td>226</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1. F. Antisiensis</td>
<td>226</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2. F. Huamel</td>
<td>227</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cariacus</td>
<td>Cariacus</td>
<td>228</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>× 1. C. Virginianus</td>
<td>228</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2. C. Mexicanus</td>
<td>230</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3. C. leucurus</td>
<td>230</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>4. C.? nemoralis</td>
<td>232</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>5. C. punctulatus</td>
<td>232</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>6. C. Lewisii</td>
<td>233</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>7. C. macrotis</td>
<td>234</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Coassus</td>
<td>Coassus</td>
<td>236</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1. C. nemorivagus</td>
<td>237</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>× 2. C. rufus</td>
<td>238</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3. C. superciliaris</td>
<td>239</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>4. C. auritus</td>
<td>239</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pudu</td>
<td>Pudu</td>
<td>240</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1. P. humilis</td>
<td>240</td>
</tr>
<tr>
<td></td>
<td>Tribe 4. Moschina</td>
<td></td>
<td></td>
<td>241</td>
</tr>
<tr>
<td></td>
<td>Moschus</td>
<td></td>
<td>1. M. Sibiricus</td>
<td>243</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>× 2. M. moschiferus</td>
<td>244</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3. M. leucogaster</td>
<td>245</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>4. M. chrysoaster</td>
<td>245</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hyemoschus</td>
<td>Hyemoschus</td>
<td>247</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1. H. aquaticus</td>
<td>248</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tragulus</td>
<td>Tragulus</td>
<td>248</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1. T. Stanleyanus</td>
<td>249</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2. T. Javanicus</td>
<td>249</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3. T. pygmaeus</td>
<td>250</td>
</tr>
<tr>
<td></td>
<td>Tribe 5. Camelina</td>
<td></td>
<td></td>
<td>251</td>
</tr>
<tr>
<td></td>
<td>Camelus</td>
<td></td>
<td>1. C. Arabicus</td>
<td>252</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2. C. Bactrianus</td>
<td>253</td>
</tr>
<tr>
<td></td>
<td>Lamar</td>
<td></td>
<td>1. L. Vicugna</td>
<td>256</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2. L. Guanacus</td>
<td>257</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3. L. Glama</td>
<td>260</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>4. L. Pacos</td>
<td>260</td>
</tr>
<tr>
<td></td>
<td>Fam. 2. Equidae</td>
<td></td>
<td>1. Equus</td>
<td>262</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1. E. Caballus</td>
<td>263</td>
</tr>
<tr>
<td></td>
<td>Asinus</td>
<td></td>
<td>1. A. vulgaris</td>
<td>268</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2. A. Onager</td>
<td>269</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3. A. Hemionus</td>
<td>272</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>4. A. Equuleus</td>
<td>275</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>5. A. Quagga</td>
<td>275</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>6. A. Burchellii</td>
<td>276</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>7. A. Zebra</td>
<td>277</td>
</tr>
</tbody>
</table>
# GEOGRAPHIC INDEX.

## Europe.

<table>
<thead>
<tr>
<th>Animal</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bos Taurus. Domesticated</td>
<td>17</td>
</tr>
<tr>
<td>——— indicus. Domesticated</td>
<td>21</td>
</tr>
<tr>
<td>Bubalus Buffelus. Domesticated</td>
<td>25</td>
</tr>
<tr>
<td>Bison Bonassus. Poland</td>
<td>36</td>
</tr>
<tr>
<td>Rupicapra Tragus</td>
<td>115</td>
</tr>
<tr>
<td>Ægoceros Pyrenaica</td>
<td>147</td>
</tr>
<tr>
<td>——— Caucasica</td>
<td>148</td>
</tr>
<tr>
<td>Capra Ibex</td>
<td>149</td>
</tr>
<tr>
<td>Hircus Ægagrus. Domesticated</td>
<td>153</td>
</tr>
<tr>
<td>Caprovis Musimon. Sardinia</td>
<td>173</td>
</tr>
<tr>
<td>Alces Malchis</td>
<td>187</td>
</tr>
<tr>
<td>Tarandus rangifer. Arctic Circle</td>
<td>189</td>
</tr>
<tr>
<td>Cervus Elaphus</td>
<td>195</td>
</tr>
<tr>
<td>Dama vulgaris. Domesticated</td>
<td>200</td>
</tr>
<tr>
<td>Capreolus Capræa</td>
<td>222</td>
</tr>
</tbody>
</table>

## South Africa.

<table>
<thead>
<tr>
<th>Animal</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bos Taurus. Domesticated</td>
<td>17</td>
</tr>
<tr>
<td>Bubalus Caffer</td>
<td>28</td>
</tr>
<tr>
<td>Antidorcas Euchore</td>
<td>63</td>
</tr>
<tr>
<td>Æpyceros Melampus</td>
<td>65</td>
</tr>
<tr>
<td>Calotragus campæstris</td>
<td>71</td>
</tr>
<tr>
<td>——— melanotis</td>
<td>72</td>
</tr>
<tr>
<td>Scopophorus Ourebi</td>
<td>73</td>
</tr>
<tr>
<td>Oreotragus saltatrix</td>
<td>74</td>
</tr>
<tr>
<td>Cephalophus Grimmia</td>
<td>78</td>
</tr>
<tr>
<td>——— Campbellæ</td>
<td>80</td>
</tr>
<tr>
<td>——— Burchelli</td>
<td>81</td>
</tr>
<tr>
<td>——— Natalensis. Port Natal</td>
<td>85</td>
</tr>
<tr>
<td>——— pygmea</td>
<td>87</td>
</tr>
<tr>
<td>Pelea Capreola</td>
<td>90</td>
</tr>
<tr>
<td>Eleotragus arundinaceus</td>
<td>91</td>
</tr>
<tr>
<td>Adenota Lechee. Tropics</td>
<td>98</td>
</tr>
<tr>
<td>Kobus ellipsiprymnus</td>
<td>99</td>
</tr>
<tr>
<td>Hippotragus leucophaeus</td>
<td>102</td>
</tr>
<tr>
<td>——— niger</td>
<td>104</td>
</tr>
<tr>
<td>Oryx Gazella</td>
<td>105</td>
</tr>
</tbody>
</table>
Connochetes Gnu .................................................. 119
  — Gorgon ....................................................... 121
Alcelaphus Caama .................................................. 124
Damalis lunatus .................................................. 125
  — Pygarga ....................................................... 127
  — albifrons ..................................................... 129
Strepsiceros Kudu .................................................. 133
Oreas Canna ....................................................... 134
Tragelaphus Angasii ............................................... 137
  — sylvatica ..................................................... 138
Hircus Ægagrus. Domesticated ................................... 153
Ovis Aries. Domesticated .......................................... 161
Giraffa Camelopardalis ........................................... 181
Equus Caballus. Domesticated ................................... 263
Asinus vulgaris. Domesticated ................................... 268
  — Quagga ....................................................... 275
  — Burchellii .................................................... 276
  — Zebra ........................................................ 277

North Africa.

Bos Taurus. Domesticated .......................................... 17
  — Dante. Domesticated .......................................... 22
Bubalus Buffalos. Domesticated .................................. 25
Gazella Dorcas .................................................... 56
Oryx Leucoryx ..................................................... 107
Addax nasomaculatus .............................................. 108
Alcelaphus Bubalis ............................................... 123
Capra Nubiana .................................................... 152
Hircus Ægagrus. Domesticated ................................... 153
Ovis Aries. Domesticated .......................................... 161
Ammotragus Tragelaphus .......................................... 179
Giraffa Camelopardalis .......................................... 181
Cervus Elaphus, var. Algeria .................................... 197
  — Barbarus. Barbary .......................................... 197
Camelus Arabicus .................................................. 252
Equus Caballus. Domesticated ................................... 263
Asinus vulgaris. Domesticated ................................... 268

West Africa.

Bos Taurus. Domesticated .......................................... 17
Bos Dante. Domesticated .......................................... 22
Bubalus brachycerus .............................................. 24
Gazella Mohr ....................................................... 59
  — rufifrons. Gambia .......................................... 60
Scopophorus montanus ............................................. 73
  ? Cephalophus quadriscopa ..................................... 77
  — Campbelliae .................................................. 86
  — coronatus. Gambia .......................................... 82
  — sylvicultrix. Sierra Leone .................................. 81
  — Ogilbii. Fernando Po ........................................ 83
<table>
<thead>
<tr>
<th>Species</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cephalophus badius</td>
<td>84</td>
</tr>
<tr>
<td>—— dorsalis</td>
<td>84</td>
</tr>
<tr>
<td>—— niger</td>
<td>85</td>
</tr>
<tr>
<td>—— rufigilatus</td>
<td>86</td>
</tr>
<tr>
<td>—— Maxwellii</td>
<td>86</td>
</tr>
<tr>
<td>—— melanorheus</td>
<td>88</td>
</tr>
<tr>
<td>—— punctulatus</td>
<td>88</td>
</tr>
<tr>
<td>—— Whitfieldii</td>
<td>88</td>
</tr>
<tr>
<td>Nanotragus perpusillus</td>
<td>89</td>
</tr>
<tr>
<td>Eleotragus reduncus</td>
<td>94</td>
</tr>
<tr>
<td>Adenota Kob</td>
<td>96</td>
</tr>
<tr>
<td>Kobus Sing-Sing</td>
<td>99</td>
</tr>
<tr>
<td>Oryx Leucoryx</td>
<td>107</td>
</tr>
<tr>
<td>Damalis Senegalensis</td>
<td>126</td>
</tr>
<tr>
<td>—— Zebra</td>
<td>129</td>
</tr>
<tr>
<td>Oreas Derbianus</td>
<td>135</td>
</tr>
<tr>
<td>Tragelaphus Eurycerus</td>
<td>136</td>
</tr>
<tr>
<td>—— scripta</td>
<td>138</td>
</tr>
<tr>
<td>Hircus Ægagrus. Domesticated</td>
<td>153</td>
</tr>
<tr>
<td>Hyemoschus aquaticus</td>
<td>248</td>
</tr>
<tr>
<td>Camelus Arabicus. Domesticated</td>
<td>253</td>
</tr>
<tr>
<td>Equus Caballus. Domesticated</td>
<td>263</td>
</tr>
<tr>
<td>Asinus vulgaris. Domesticated</td>
<td>268</td>
</tr>
</tbody>
</table>

East Africa.

<table>
<thead>
<tr>
<th>Species</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bos Taurus. Domesticated</td>
<td>17</td>
</tr>
<tr>
<td>? Bubalus brachycerus</td>
<td>24</td>
</tr>
<tr>
<td>Gazella Dorcas, var</td>
<td>56</td>
</tr>
<tr>
<td>—— Isabella</td>
<td>57</td>
</tr>
<tr>
<td>—— Sæmmeringii</td>
<td>59</td>
</tr>
<tr>
<td>—— rufigollis</td>
<td>60</td>
</tr>
<tr>
<td>Scopophorus montanus</td>
<td>73</td>
</tr>
<tr>
<td>Oreotragus saltatrix</td>
<td>74</td>
</tr>
<tr>
<td>Nesotragus moschatus</td>
<td>75</td>
</tr>
<tr>
<td>Neotragus Saltiana</td>
<td>76</td>
</tr>
<tr>
<td>Cephalophus Madoqua</td>
<td>82</td>
</tr>
<tr>
<td>? Adenota Koba</td>
<td>97</td>
</tr>
<tr>
<td>Oryx Beisa</td>
<td>106</td>
</tr>
<tr>
<td>Strepsiceros Kudu, var</td>
<td>133</td>
</tr>
<tr>
<td>Tragelaphus Decula</td>
<td>139</td>
</tr>
<tr>
<td>? Capra Nubiana</td>
<td>151</td>
</tr>
<tr>
<td>—— Valie. Abyssinia</td>
<td>152</td>
</tr>
<tr>
<td>Hircus Ægagrus. Domesticated</td>
<td>153</td>
</tr>
<tr>
<td>Ovis Aries. Domesticated</td>
<td>161</td>
</tr>
<tr>
<td>Equus Caballus. Domesticated</td>
<td>263</td>
</tr>
<tr>
<td>Asinus vulgaris. Domesticated</td>
<td>268</td>
</tr>
</tbody>
</table>

Australia.

<table>
<thead>
<tr>
<th>Species</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bos Taurus. Domesticated</td>
<td>17</td>
</tr>
<tr>
<td>Hircus Ægagrus. Domesticated</td>
<td>153</td>
</tr>
</tbody>
</table>
### GEOGRAPHIC INDEX.

<table>
<thead>
<tr>
<th>Animal</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ovis Aries. Domesticated</td>
<td>161</td>
</tr>
<tr>
<td>Equus Caballus. Domesticated</td>
<td>263</td>
</tr>
<tr>
<td>Asinus vulgaris. Domesticated</td>
<td>268</td>
</tr>
</tbody>
</table>

### Asia.

<table>
<thead>
<tr>
<th>Animal</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>? Bos Taurus. Domesticated</td>
<td>17</td>
</tr>
<tr>
<td>— Indicus. Domesticated</td>
<td>21</td>
</tr>
<tr>
<td>Bubalus Buffelus. Domesticated</td>
<td>25</td>
</tr>
<tr>
<td>Anoa depressicornis. Celebes</td>
<td>29</td>
</tr>
<tr>
<td>Bibos frontalis. India</td>
<td>31</td>
</tr>
<tr>
<td>— Gaurus. India</td>
<td>33</td>
</tr>
<tr>
<td>— Banting. Java, Borneo</td>
<td>35</td>
</tr>
<tr>
<td>Poëphagus grunniens. Thibet</td>
<td>40</td>
</tr>
<tr>
<td>Budorcas taxicola. Thibet</td>
<td>45</td>
</tr>
<tr>
<td>Saïga Tartarica. Tartary</td>
<td>51</td>
</tr>
<tr>
<td>Pantholops Hodgsonii. Thibet</td>
<td>53</td>
</tr>
<tr>
<td>Procapra gutturosa. Tartary</td>
<td>54</td>
</tr>
<tr>
<td>— picticauda. Thibet</td>
<td>55</td>
</tr>
<tr>
<td>? Gazella Dorcas, var. India</td>
<td>57</td>
</tr>
<tr>
<td>— subgutturosa. Tartary</td>
<td>58</td>
</tr>
<tr>
<td>Tragops Bennettii. India, plains</td>
<td>62</td>
</tr>
<tr>
<td>Antilope Bezoartica. India, plains</td>
<td>66</td>
</tr>
<tr>
<td>Tetracerus quadricornis</td>
<td>68</td>
</tr>
<tr>
<td>— Iodes</td>
<td>69</td>
</tr>
<tr>
<td>— paccervis</td>
<td>69</td>
</tr>
<tr>
<td>— subquadricornutus</td>
<td>70</td>
</tr>
<tr>
<td>Capricornis Sumatrensis. Sumatra</td>
<td>110</td>
</tr>
<tr>
<td>— Bubalina. India, mountains</td>
<td>111</td>
</tr>
<tr>
<td>— crispa. Japan</td>
<td>112</td>
</tr>
<tr>
<td>? Nemorhedus Goral. India</td>
<td>112</td>
</tr>
<tr>
<td>Portax Tragocamelus. India</td>
<td>141</td>
</tr>
<tr>
<td>Hemitragus Jemlaicus. India</td>
<td>144</td>
</tr>
<tr>
<td>Kemas Warryato. Western India</td>
<td>146</td>
</tr>
<tr>
<td>Capra Sibirica</td>
<td>150</td>
</tr>
<tr>
<td>— Himalayana</td>
<td>150</td>
</tr>
<tr>
<td>Hircus Ægagrus. Domesticated</td>
<td>153</td>
</tr>
<tr>
<td>Ovis Aries. Domesticated</td>
<td>161</td>
</tr>
<tr>
<td>Caprovis Vignei. Thibet</td>
<td>172</td>
</tr>
<tr>
<td>— Argali. Siberia and Tartary</td>
<td>174</td>
</tr>
<tr>
<td>Pseudois Nahoor. North India</td>
<td>177</td>
</tr>
<tr>
<td>Tarandus rangifer. Arctic regions</td>
<td>183</td>
</tr>
<tr>
<td>Cervus Wallichii. India</td>
<td>197</td>
</tr>
<tr>
<td>— affinis. Thibet</td>
<td>199</td>
</tr>
<tr>
<td>— Sika. Japan</td>
<td>200</td>
</tr>
<tr>
<td>Dama vulgaris. Persia</td>
<td>201</td>
</tr>
<tr>
<td>Panolia Eldii. India</td>
<td>202</td>
</tr>
<tr>
<td>Rucervus Duvaucellii. India</td>
<td>203</td>
</tr>
<tr>
<td>Rusa Aristotelis. India</td>
<td>205</td>
</tr>
<tr>
<td>— Dimorphe. India</td>
<td>209</td>
</tr>
<tr>
<td>— Hippelaphus. Java</td>
<td>209</td>
</tr>
</tbody>
</table>
### Geographic Index

<table>
<thead>
<tr>
<th>Species</th>
<th>Location</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rusa Equinus. Peronii.</td>
<td>Sumatra, Java</td>
<td>210</td>
</tr>
<tr>
<td>Peronii. Timor</td>
<td></td>
<td>211</td>
</tr>
<tr>
<td>Philippinus. Philippinss. lepidus.</td>
<td>Java</td>
<td>211</td>
</tr>
<tr>
<td>Axis maculatus. India, plains</td>
<td></td>
<td>212</td>
</tr>
<tr>
<td>pseudaxis. India</td>
<td></td>
<td>215</td>
</tr>
<tr>
<td>Hyelaphus porcinus.</td>
<td>India, plains</td>
<td>215</td>
</tr>
<tr>
<td>Cervulus vaginalis.</td>
<td>Sumatra, Java</td>
<td>217</td>
</tr>
<tr>
<td>moschatus. India</td>
<td></td>
<td>218</td>
</tr>
<tr>
<td>Reevesii. China</td>
<td></td>
<td>220</td>
</tr>
<tr>
<td>Capreolus pygargus.</td>
<td>Siberia</td>
<td>223</td>
</tr>
<tr>
<td>Moschus Sibiricus.</td>
<td></td>
<td>243</td>
</tr>
<tr>
<td>moschiferus</td>
<td></td>
<td>244</td>
</tr>
<tr>
<td>leucogaster</td>
<td></td>
<td>245</td>
</tr>
<tr>
<td>chrysogaster</td>
<td></td>
<td>245</td>
</tr>
<tr>
<td>Meminna indica</td>
<td></td>
<td>246</td>
</tr>
<tr>
<td>Tragulus Stanleyanus.</td>
<td>Ceylon</td>
<td>249</td>
</tr>
<tr>
<td>Javanicus. Java, &amp;c.</td>
<td></td>
<td>249</td>
</tr>
<tr>
<td>pygmæus. Java, &amp;c.</td>
<td></td>
<td>250</td>
</tr>
<tr>
<td>Camelus Arabicus</td>
<td></td>
<td>252</td>
</tr>
<tr>
<td>Bactrianus. Domesticated</td>
<td></td>
<td>253</td>
</tr>
<tr>
<td>Equus Caballus. Domesticated</td>
<td></td>
<td>263</td>
</tr>
<tr>
<td>Asinus vulgaris. Domesticated</td>
<td></td>
<td>268</td>
</tr>
<tr>
<td>Onager. India, plains</td>
<td></td>
<td>269</td>
</tr>
<tr>
<td>Hemionus. Tartary</td>
<td></td>
<td>272</td>
</tr>
</tbody>
</table>

### North America

<table>
<thead>
<tr>
<th>Species</th>
<th>Location</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bos Taurus. Domesticated</td>
<td></td>
<td>17</td>
</tr>
<tr>
<td>Bison Americanus</td>
<td></td>
<td>36</td>
</tr>
<tr>
<td>Ovibos moschatus. Arctic regions.</td>
<td></td>
<td>43</td>
</tr>
<tr>
<td>Mazama Americana. Arctic regions.</td>
<td></td>
<td>114</td>
</tr>
<tr>
<td>Autilocapra Americana.</td>
<td></td>
<td>117</td>
</tr>
<tr>
<td>Hircus Ægagrus. Domesticated</td>
<td></td>
<td>153</td>
</tr>
<tr>
<td>Ovis Aries. Domesticated</td>
<td></td>
<td>161</td>
</tr>
<tr>
<td>Caprovis orientalis. Tunis</td>
<td></td>
<td>172</td>
</tr>
<tr>
<td>Caprovis Canadensis. Arctic regions.</td>
<td></td>
<td>176</td>
</tr>
<tr>
<td>Alces Malchis</td>
<td></td>
<td>187</td>
</tr>
<tr>
<td>Tarandus rangifer. Arctic regions.</td>
<td></td>
<td>189</td>
</tr>
<tr>
<td>Cervus Canadensis</td>
<td></td>
<td>193</td>
</tr>
<tr>
<td>Cariacus Virginianus</td>
<td></td>
<td>228</td>
</tr>
<tr>
<td>Mexicanus</td>
<td></td>
<td>230</td>
</tr>
<tr>
<td>leucurus</td>
<td></td>
<td>230</td>
</tr>
<tr>
<td>Cariacus nemoralis</td>
<td></td>
<td>232</td>
</tr>
<tr>
<td>punctulatus</td>
<td></td>
<td>232</td>
</tr>
<tr>
<td>Lewisii.</td>
<td></td>
<td>233</td>
</tr>
<tr>
<td>macrotis</td>
<td></td>
<td>234</td>
</tr>
<tr>
<td>Equus Caballus. Domesticated</td>
<td></td>
<td>263</td>
</tr>
<tr>
<td>Asinus vulgaris. Domesticated</td>
<td></td>
<td>268</td>
</tr>
</tbody>
</table>
**South America.**

<table>
<thead>
<tr>
<th>Species</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bos Taurus. Domesticated</td>
<td>17</td>
</tr>
<tr>
<td>Hircus Ægagrus. Domesticated</td>
<td>153</td>
</tr>
<tr>
<td>Ovis Aries. Domesticated</td>
<td>161</td>
</tr>
<tr>
<td>Blastocerus paludosus. Brazil</td>
<td>224</td>
</tr>
<tr>
<td>— campestris. Patagonia</td>
<td>224</td>
</tr>
<tr>
<td>Furcifer Antisiensis. Bolivia</td>
<td>227</td>
</tr>
<tr>
<td>— Huamel. Chili</td>
<td>227</td>
</tr>
<tr>
<td>Coassus nemorivagus. Brazil</td>
<td>237</td>
</tr>
<tr>
<td>— rufus. Brazil</td>
<td>238</td>
</tr>
<tr>
<td>— superciliaris. Brazil</td>
<td>239</td>
</tr>
<tr>
<td>— auritus. Brazil?</td>
<td>239</td>
</tr>
<tr>
<td>Pudu humilis. Chili</td>
<td>240</td>
</tr>
<tr>
<td>Lama Vicugna. Bolivia</td>
<td>256</td>
</tr>
<tr>
<td>— Guanacus. Chili, Patagonia</td>
<td>257</td>
</tr>
<tr>
<td>Lama Glama. Domesticated</td>
<td>260</td>
</tr>
<tr>
<td>— Pacos. Domesticated</td>
<td>260</td>
</tr>
</tbody>
</table>
CATALOGUE
OF
MAMMALIA.

Order V. UNGULATA.

Teeth irregular. Cutting and canine teeth often wanting in one or both jaws. Grinders all similar, sometimes even wanting. Toes large, covered with broad hoofs or large conical claws.


Multungula, Solidungula et Bisulca, Illiger, Prod. 94, 101, 103, 1811.


Gravigrades or Onguligrades normaux, Blainv. 1816.


Belluæ, Pecora, et Bruta, Selys Longchamps.


These animals have been arranged by various scientific authors in the following manner:—

Ray, in the Synopsis Methodica Animalium Quadrupedum, 1693, 60, divides the viviparous, hairy animals or quadrupeds, thus:—


Mammalia.

III. Quadrisulca. Rhinoceros, Hippopotamus, &c.


Linnaeus (Systema Natura, ed. 12, 1766) divides the Hoofed animals into three orders, and arranges the genera thus:—


Order VI. Bello充足的. 33. Equus. 34. Hippopotamus. 35. Sus. 36. Rhinoceros.

Thomas Pennant, in the Synopsis of Quadrupeds, 1771, 8vo, divides these animals thus:—


Professor Charles Illiger (Prodromus Systematis Mammalium et Avium, 1811) arranged the Hoofed quadrupeds as follows:—


Order VIII. Tardigrada. 27. Tardigrada. 71. Bradypus. 72. Cholepus. 73. Prochilus.


C. S. Rafinesque (in his Analyse de la Nature, 12mo, 1815) divides the Hoofed quadrupeds into orders, thus:—


Cuvier (Règ. Animal, i. 215, 1817) places the Hoofed quadrupeds in three orders, thus:—


The same arrangement, with rather more detail, is used in the second edition, published in 1829.

Mr. J. E. Gray, in the Natural Arrangement of Vertebrate Animals (Medical Repository, 1821, 304), arranged the Ungulated Mammalia into order thus:—


Order IX. Proboscidæ. 1. Elephantidae. Elephas.


Order XII. Monochæna. 1. Equidae. Equus.

Order XIII. Hydroporha. 1. Camelidae.

MAMMALIA.


Mr. Gray, in the "Outline of the Distribution of Mammalia" (Annals of Philosophy, 1825), proposes to divide the Order Ungulata thus:

I. Middle toes large, equal. Fam. 1. Bovidae. 2. Equidae.
II. Toes 3, 4, 5, subequal. Fam. 3. Elephantidae. 4. Dasypidæ. 5. Bradypidæ.

This arrangement is followed in the List of Mammalia in the Collection of the British Museum, 1843; the List of Osteological Specimens in the British Museum, 1847; the List of Mammalia and Birds of Nepaul, presented by B. H. Hodgson, Esq., to the British Museum; and in this work.

Dr. J. B. Fischer (in the Synopsis Mammalium, 8vo, 1828) combines together the Linnaean and Cuvierian arrangement, and arranges the Hoofed Mammalia thus:


Wagler, in the Natural System Amphibien, 1830, divides the Hoofed animals thus:

Order VII. Hyraces. 1. Hyrax.
Order XV. Equi. 1. Equus.

He forms a new class called Gryphi, containing

Latreille (Fam. Nat. Reg. Anim. 596. in 1830) divides the Hoofed quadrupeds (Ungulata) thus:—


M. Lesson (Nouveau Tabl. du Règne Animal, 1842) arranges the Hoofed quadrupeds in the following orders:—

Suborder III. Heterodonta. Cutting teeth none; teeth sometimes quite wanting.


Mr. Richard Owen (Odontography, 1840–1845) divides the Ungulata thus:—

I. Isodactyle. “Hoofed quadrupeds with toes in even number.
as two or four, and which have a more or less complicated stomach with a moderate-sized simple cæcum, as Ox, Hog, Peccary, and Hippopotamus.

II. Anisodactylæ. “Hoofed quadrupeds with toes (on the hind feet at least) in uneven number, as one, or three, or five, the latter number being manifest in the Proboscidiæ. All these have a simple stomach and an enormous cæcum, as Horse, Tapir, Rhinoceros.

III. Proboscidiæ. “Resembling the preceding in having toes in uneven number, in having a comparatively simple stomach and an enormous cæcum, but combining with a long proboscis so many other peculiarities of structure as to merit the rank of a distinct group of Ungulata.”

In the Quarterly Journal of the Geological Society for 1848, p. 131, with his usual fondness of renaming old groups, Mr. Owen proposes to change the name he has given to the above group to—1. Artiodactyla, 2. Perissodactyla, and 3. Proboscidia. In this paper the recent genera are arranged in the following order:—


III. Proboscidia. 16. Elephas.

This arrangement is only founded on the consideration of the osteological conformation of the foot, and has the disadvantage of most artificially separating a very natural group recognized by Aristotle, Ray, Linnaeus, Illiger, Cuvier, and all recent authors, between two divisions of the order. Cuvier, Fleming, Blainville and others properly used the character here adopted to the whole group for the division of the Pachydermata into subdivisions.

Prince Charles Lucien Bonaparte (in his Prodromus Systematis Mastozoologieæ, 1847) arranges these animals in four orders, thus:—


MAMMALIA.


Mr. Turner, in his paper on the Skulls of Ungulate Mammalia (Proc. Zool. Soc. 1849, 158), adopts Mr. Owen’s names for his orders, and arranges the genera as follows:—


Synopsis of the Families.

I. Two middle toes large, equal. Bones of the metacarpus and metatarsus united.

1. Bovidae. Two middle toes separate; cutting teeth \( \frac{2}{3} \) or \( \frac{2}{3} \); grinders \( \frac{2}{3} \); frontal bones generally horned; gullet with two pouches.

2. Equidae. Two middle toes soldered into one; cutting teeth \( \frac{2}{3} \); gullet and stomach simple.

II. toes 3, 4, 5 to each foot, nearly equal. Teeth nearly in one series.

3. Elephantidae. Grinders rooted, transversely ridged; toes 3-3, 3-4 or 5-5, last joint covered with a hoof; skin thick, nearly naked; hairs large, rigid; gullet simple.

4. Dasypidae. Grinders rootless; crown flat, sometimes wanting; face long, acute; body armed with scales or rigid hairs.

5. Bradypidae. Grinders rootless; crown when young conical; face round; limbs elongate; hair dry, crisp; stomach two- or three-celled.
Or the Families may be arranged according to their teeth, thus:

I. Teeth well-developed, rooted. Fore-arm constantly prone. Toes hoofed.

**Bovidae.** Stomach for ruminating; toes 4, middle large.

**Equidae.** Stomach not ruminating; toes 3, middle large.

**Elephantidae.** Stomach not ruminating; toes subequal.

II. Teeth wanting, or imperfect, rootless. Toes longly clawed.

**Dasypidae.** Face elongate.

**Bradypididae.** Face short.

**Section 1. Furcipeda.**

Two middle toes large, equal; bones of the metacarpus and metatarsus united.

**Ungulata, Sect. 1, Gray, Ann. Phil. 1825.**

**Isodactyle, part., and Anisodactyle, part., Owen, Odontography, 1841.**


**Stereoplia Bisulcia, Rafin. Anal. Nat. 55. 1815.**

**Pecora, Sundevall, Kongl. Vet. Akad. Hand. 1844; Pecora, 1848.**

**Fam. 1. Bovidae.**

Two middle toes separate. Cutting teeth eight below; upper jaw callous; grinders 6-6 in each jaw. Frontal bones produced, generally bearing horns, especially in the males. Gullet with two long pouches just before the stomach, used for holding and soaking the food before it is chewed. Using their head and horns in defence.

**Ruminantia, Pallas, Zool. Ross. Asiat. i. 192; Bronn, Ind. Paleont. ii. 708.**

**Q. Ruminantia et Q. Camelinux, Ray, Syn. 60. 1693.**

**Bovidae, Gray, Ann. Phil. 1825; List Mam. B. Mus. xxvi.; Storr. Prod. Mam. 1780; Lesson in Tab. R. A. 167; Fischer, Syn. 1828.**


**Les Ruminans (Ruminantia), Cuvier, Tab. Elem. 1798; Dum. Z. A. 1806; Cuvier, R. A. i. 246. 1817, ed. 2. i. 254; Desm. N. D. H. N. xxiv. 31, 1804; F. Cuvier, 1829; Dent. Mam. 227; Dict. Sci. Nat. lix. 511.**
MAMMALIA.

Bisulca, Illiger, Prod. 102. 1811.
Cameli et Pecora, Wagler, Amph. 1831.
Gravigrades normaux, Blainv.
M. Callodactyles, Pomet, Rev. Zool. 1848, 283.
Ruminalia (Stereoceria et Cerynxia), Rafin. Anal. Nat. 55. 1815.
Ruminantia et Coelocerata, Bronn, Index Paleont. ii. 788.
Pecora unguigrada et digitigrada, Sundevall, Pecora.

Desmarest in his Tableau Méthod. des Mammifères (N. Dict. Hist. Nat. xxiv. 33. 1804) divides the Ruminants (Pecora) into the following sections:

M. de Blainville in his Notes on Ruminants (Bull. Soc. Philom. 1816, 76) divides them thus:

Mr. Gray, in the “Outline of the Distribution of Mammalia” (Ann. Phil. 1825), proposed to divide the Bovidae thus:
II. Horns none or deciduous. 3. Camelina. 4. Moschina.

Colonel Hamilton Smith (Griffith, A. Kingd. v. 1827; Fischer, Syn. 609. 1830) proposed to divide them thus:
II. Cervidae. 1. Moschus. 2. Cervus.

Mr. Ogilby, in a paper on the genera of Ruminantia (Proc. Zool. Soc. 1836, 133), proposed to divide them thus:
II. Cervidae. 1. Camelopardalis. 2. Tarandus. 3. Alces.
III. Moschidæ. 1. Moschus. 2. Ixalus. 3. Himnulus and Capreolus.
IV. Capridæ. (Muffle none, browsers.) 1. Mazama. 2. Ma-


Lesson (Nov. Tab. Reg. Anim. 167. 1842) divides them into—

Mr. Hodgson, in an Essay on various genera of Ruminants (Journ. Acad. N. S. Calcut. 1847; Mission Press, 1847), proposes to divide them into—1. Cervidæ or Haranadi; 2. Moschidæ or Mushkadi; 3. the Cavicornia minores or Flocks, as Antilopida or Sasinadi; 4. Cavicornia majores or Herds, as Bovidæ or Gaudrisha.

Professor Carl Sundevall in his Essay on Pecora (Kongl. Vetensk. Akad. Handl. 1844, 1846; and Hornschuch, Archiv, ii. 1848) proposes the following arrangement:—


**B. DIGITIGRADA.** VI. Camelina. 32. Camelus. 33. Auchenia.

M. Pucheran (Compt. Rendus Acad. Scien. 1849, 775) divides the Ruminantes into three families:—1. Les Camelides. 2. Les Tragulides (Moschus). 3. Les Cervides. The latter is divided into two tribes:—1. Les Cerviens. 2. Les Boviens.

M. F. Cuvier observes:—“Mais tous ces essais ne sont point encore de nature à satisfaire la méthode naturelle, et lesnaturalistes doivent encore chercher à découvrir quelles sont les parties qui, chez ces animaux, sont propres à caractérer les genres.”—*Dict. Sci. Nat.* lix. 514. 1829.

Mr. Ogilby remarks (Proc. Zool. Soc. 1836, 133):—“The presence or absence of horns in one or both sexes; the substance and nature of these organs, whether solid or concave, permanent
or deciduous; the form of the upper lip, whether thin and attenuated as in the *Goat*, or terminating in a broad heavy naked muzzle as in the *Ox*, and the existence of lachrymal sinuses and interdigital pores, are the characters which really influence the habits and economy of Ruminating animals, and upon which their generic distinction mainly depends."

He continues:—"That the presence or absence of horns in the female regulates in a great measure the social intercourse of the sexes; that upon the form of the lips and muzzle, the only organs of touch and prehension among the *Ruminantia*, depends the nature of the food and habitat, making the animal a *grazer* or a *browser*, as the case may be; and that the existence or non-existence of the interdigital glands, the uses of which appear to be to lubricate the hoofs, has a very extensive influence upon the geographical distribution of the species, confining them to the rich savannah and moist forest, or enabling them to roam over the arid mountain, the parched karroo, and the burning desert."

Mr. H. N. Turner observes:—"It is certainly remarkable, that while the teeth have contributed so important a share in the characters by which the Mammalia have been arranged by various authors, they should have been so entirely overlooked in the members of the present division; for notwithstanding the great uniformity and strongly-marked character pervading the Ruminant dentition, very decided characters may frequently be found in the form and direction of the incisors, and in the presence or absence of the supplemental lobe in the molars; and it is the more to be wondered at when we consider that the incisors, from their position, may often easily be seen in dried specimens, and that the character alluded to in the molars has been found of considerable value in the interpretation of fossil remains."—*Proc. Zool. Soc.* 1849.

**Synopsis of the Tribes.**

I. **Horns permanent**, covered with a permanent horny coat or hairy skin. Cutting teeth only in lower jaw.

1. **Bovina.** Horns covered with horny sheaths.

2. **Giraffina.** Horns covered with a hairy skin, with a tuft of hair at the tip.

II. **Horns deciduous**, covered when young with a deciduous hairy skin, or entirely wanting.


Subfamily I. Horns permanent, covered with a permanent horny coat or hairy skin. Cutting teeth only in lower jaw; front edge of upper jaw callous. Hoofs triangular.

Tribe 1. Bovina.

Horns expanded from a smooth horny rudiment into a permanent horny sheath to the conical process of the frontal bone.

Bos, Linn. S. N.
Capra, Ovis et Bos, Linn. S. N.
Bovidae, Selys Longchamps, 1842.
Bovina, Gray, Ann. Phil. 1825; List Mam. B. M. xxvi.
Cavicornia, Illiger, Prod. 106, 184.
Capridae et Bovidae, H. Smith, Griffith, A. K. iv. 182.
Les Kinoceres ou Ruminants à cornes osseuses (Bos, &c.), Duvernoy, Tab. Anim. Vert.
Les Ruminans à cornes osseuses, F. Cuv. 1829.
Antilopiens, Pomet, l. c. 184.
Pecora Unguligrada Bovicornia, Sundevall, Pecora, 64.
Fam. Sylvicaprina, Bovina, Antilopina et Caprina, Sundevall, Pecora, 64.

Mr. Gray, in his paper "On the Arrangement of the Hollow-horned Ruminants (Bovidae)" (Annals & Mag. Nat. Hist. 1849, xviii. 229), observes, "The systematic arrangement of these animals has been one of the most difficult subjects for the student of mammalia.

"Linnaeus (Syst. Nat. i. 27), in his last edition of the Systema Naturæ, divides them into three genera according to the direction of the horn, which he describes as erect in Capra, reclinate in Ovis, and porrect in Bos, and separates these from Cervus because they have tubular, while that genus has solid branched and deciduous horns.

"Gmelin in his edition adds to these the genus Antilope, which had been established by Pallas, and characterizes that genus as having solid horns like the Cervi, but simple and persistent. Now I need scarcely observe that these characters will not define
the genera, for all *Goats* have not erect horns, if any have, and it is the same with the other genera; and we all know that the Antelopes have tubular horns, in the sense that word is used by Linnaeus, as much as the Oxen, Sheep and Goats; but this error of Gmelin has had its influence up to this time, for the horns of Antelopes in Cuvier’s first and last edition of *Le Règne Animal* are described as having ‘the nucleus of the horn solid, and without pores or sinuses, like the horns of the Stags.’

“M. Geoffroy, perceiving that the characters furnished by Linnaeus were not sufficient to separate the Antelopes from the other genera, examined the structure of the prominences of the frontal bones which form the core or support of the horns of the Antelopes, and he describes the core of the horns of the Antelopes to be solid and without sinuses, while he characterizes the cores of the horns of the Goats, Sheep and Oxen as in great part occupied with cells which communicate with the frontal sinus, and Cuvier, Latreille and most authors have without re-examination adopted these characters.

“Some years ago I examined the cores of the horns of many species of Antelopes for Colonel H. Smith, and found they were all more or less cellular within, and these cells had a communication with the frontal sinus; certainly the cells are not so numerous as in the thick horns of some Oxen, but they are quite as numerous for the thickness of the core; but it is to be remembered that the general character of the horns of Antelopes is to be slender and elongated, and consequently there is not so much room for cells, as their presence would destroy the strength of the core, so as not to form a fit support for the horns; and thus this character is merely reduced to one dependent on the small size or slenderness of the horns, which, though usual, is not universal in the genus, for example in the *A. Oreas* and others.

“Colonel Smith, aware of this difficulty, divided these animals into two families: *Capridae*, characterized by having the horns ‘vaginating upon an osseous nucleus totally or nearly solid,’ containing the genera *Antilope, Capra, Ovis*, and a new genus which he called *Damalis* for the Antelopes with high withers; and second, the family *Bovidae*, with horns ‘vaginating upon a bony nucleus not solid, but more or less porous and cellular,’ including the genera *Catoblepas* or *Gnu, Ovibos* or *Musk Ox*, and *Bos*.

“This arrangement shows that much reliance is certainly not to be placed on M. Geoffroy’s character for the genus *Antilope*,

* I may remark that Cuvier says that the genus *Bos* has a large naked muzzle, yet two species which he refers to it have a hairy muzzle like the Sheep, viz. *B. moschatus*. 
for here the Goat and Sheep are said to have the same peculiarity as he gives to separate the Antelopes from them.

"Several authors after this period considered the subgenera proposed by De Blainville and Colonel H. Smith as genera, and grouped them into families.

"Mr. Ogilby, in a theoretical arrangement of Ruminants, published in the Proceedings of the Zoological Society for 1836, divides these animals into two families, characterized thus: Capridae, 'muzzle none,' Bovidae, 'muzzle distinct, naked.' Of this arrangement I need only remark, that he places Ovis in Capridae and Bos in Bovidae, Kemas or the Jemla Goat in Bovidae, and Capra in Capridae, thus separating into distinct families most nearly allied species; while the genus Ixalus, which is a sheep or antelope with rudimentary horns, is referred to the family Moschidae, and the Gnu is entirely overlooked. I am satisfied, if Mr. Ogilby had attempted to arrange a collection by this system, he must have soon abandoned it.

"Within the last few years Professor Sundevall of Stockholm has proposed to arrange these animals according to the form of their hoofs, and he has regarded the subgenera of preceding authors as genera, and divided them into four families, thus: 1. Caprina, containing Ovis, Capra, Nemorhedus and Oreotragus. 2. Antilopina: Antilope, Dicranoceras and Bubalus. 3. Bovina: Oryx, Catoblepas, Ovis, Bos, Anoa, Portax, Damalis. 4. Sylvicaprina: Hippotragus, Strepsiceros, Cervicapra, Calotragus, Nanotragus, Neotragus, Sylvicapra, Tragelaphus and Tetracerus. In this arrangement he appears to have overlooked the fact, that the hoofs of these animals are modified according to the kind of country which the animal is destined to inhabit, and therefore this arrangement is dependent on that single circumstance, and not on the considerations of all the peculiarities of the species; hence the species which inhabit rocky pinnacles, as the Thar and Ghoral (Nemorhedus) and Klipspringer (Oreotragus), are separated from the other Antelopes and placed with the Goats, and the large and heavy Antelopes which inhabit the plains, as the Oryx, Portax and Damalis, are placed with the Oxen.

"If this system is fully carried out, the Rein Deer should be separated from its allies and placed with the Musk Ox; and I am not certain that the Addax Antelope should not be arranged in the same group, for it has the same shaped hoofs, the sands of the Desert probably requiring the same structure for progression as the snow.

"After examining all these arrangements, and after repeated examinations of the animals, I believe that the form of the horns affords the most natural character for subdividing them into groups; and I think that if the Antelopes are divided into two
groups, which appear to me natural, then there is no difficulty in finding neat characters for the definitions of the families.”

**Synopsis of the Subtribes.**

I. The horns round or compressed, without any raised keel on the inner front angle.

1. The horns smoothish, spread out on the sides, cylindrical or depressed at the base, the knee (or wrist) below the middle of the fore-leg—**Boveae.**

2. The horns conical, bent back, cylindrical or compressed, and ringed at the base, the knee (or wrist) in the middle of the fore-leg—**Antilopeae.**

II. The horns subangular with a more or less distinct ridge on the front angle, the knee in the middle of the fore-leg.

3. The horns subspiral, erect; crumen distinct; forehead flat; male not bearded.—**Strepsicereae.**

4. The horns recurved, compressed; crumen none; forehead concave; male bearded—**Capreæ.**

5. The horns spiral, bent out on the sides; crumen none; forehead convex; male not bearded—**Oveæ.**

The position of the knee is the external mark of the shortness of the cannon bone, compared with the length of the *ulna* or fore-arm bone.

Section 1. The horns round or compressed, without any raised keel on the inner front angle—**Levicornia.**


**Subtribe I. Boveae.** The horns smoothish, spread out on the sides, cylindrical or depressed at the base; situated on the frontal ridge and bent laterally outward, and recurved at the tip. The nose is broad, with the nostrils on the side. The skull has no suborbital pit or fissure; the cutting-teeth are nearly equal-sized, and slightly shelving outwards. The knee (or wrist) below the middle of the fore-leg, the cannon bone being shorter than the fore-arm bone.

*Bovææ, Gray, Ann. & Mag. N. H. 1847, 230; Gleanings Knowsley Menag.*


*Bovina and Antilopina, part., Sundevall, Pecora.*

*Taurus, Rafinesque, Anal. Nat. 56, 1815.*


Mr. Gray, in the Annals and Mag. Nat. Hist. 1846, 229, observes, “The Boveae consist of the genera Bos, Bibos, Bison, Bubalus and Anoa, with a naked moist muffle, and Poephagus and Ovibos with a hairy ovine muzzle. “These genera are well distinguished by the form of the intermaxillaries. In Poephagus (grunniens), Bibos (frontatus and Gour), and in Bison (Urus), they are short, triangular, acute behind, and not reaching to the nasal, being gradually shorter in proportion from Poephagus to Bison. In Bos (Taurus) and Bubalus (Buffelus and Caffer) they are elongate, reaching to the suture between the nasal and cheek-bone, and extending furthest up in B. Buffelus.”

A. Muffle broad, moist at the end of the nose. Hair short, rigid, adpressed, or short, crisp and woolly. The grinder with a well-developed supplementary lobe. The bony part of the tail produced, elongated, reaching to the hocks. Living on the plains of warm or temperate regions.

The Oxen of the Plains, Gray, Knowsley Menag. 1849; Ann. & Mag. N. H. 1848, 229.

a. True Oxen. Bodies covered with rather stiff hair. Shoulder proportionate to the haunches; the cannon bone of the hind- and fore-legs of equal length.

True Oxen, Gray, Knowsley Menag. 1849.

* Intermaxillaries elongate, and produced behind and between the nasal and cheek bones; the upper lip bald, callous and moist, as wide as the outer edge of the nostrils.

1. Bos.

Horns cylindrical, conical, nearly circular at the base, curved upwards and outwards, far apart at the base, on the sides of the
upper part of the ridge at the hinder end of the occipital plane. The facial and frontal portion of the skull equal. Dorsal ridge distinct, sometimes produced into a dorsal hump.


Forehead flat; withers not humped.


4. West Highland Ox, Stephens, Book of the Farm, 1274. fig. Kyloe Ox, Bewick, Hist. Quad. 36. fig.
5. The Zetland Cow, Low, Dom. Anim. B. I. t. 5.
10. Sheeted Somersetshire Cow (horned and polled), Low, Dom. Anim. B. I. t. 16.
   Hereford Ox, Stephens, Book of the Farm, 1274. fig.
12. Long-horned or Lancashire Bull and Ox, Bewick, Hist. Quad. 33. fig. 35. fig.
   Long-horned Bull, Low, Dom. Anim. B. I. t. 18; Stephens, Book of the Farm, 1273. fig.
   English Short-horn Cattle, Knight, Mus. Anim. Nat. f. 701.
   Short-horn Ox, Bull and Cows, Stephens, Book of the Farm, 1270. figs. t. 32.
21. Holstein or Dutch Bull and Cow, Bewick, Hist. Quad. 29. fig.
   Improved Holstein or Dutch Bull and Cow, Bewick, Hist. Quad. 30. fig.
22. French Cattle.—Desmarest, Mammalia, 499, described the various breeds of French domestic cattle, but he does not refer to any figures of them.


   Pair of horns. Cape of Good Hope.
   Two separate horns, very large, used as a powder-flask.
   Cape of Good Hope.

   Freiburg Cattle, Witte, Rindv. Rassen, ii. t. ; Beckberlin, Abbild. ii. ; Pabst, Anleit. 42. t. 3.

25**. Alpine Cattle.
   Halsi Cattle, Witte, Rindv. Rassen, iii. t. Schwyz. Rindv., Michel & Ithen, Manathsch. 59. t. 1, 2.
   Gebirgsvieh, Beckberlin, Abbild. 9. t. ; Pabst, Anleit. 42.
   Bos Taurus alpestris, Wagner, Schreb. Saugth. 1570, t. 297 d.

26. Syrian Ox, Knight, Mus. A. Nat. f. 726, 728.

27. Moldavian Cattle, Knight, Mus. A. Nat. f. 709.

28. Italian Campagna Bull, Knight, Mus. A. Nat. f. 705.
   Bœuf de la Romagne, Cuvier, Oss. Foss. iv. 109.


   Bos Taurus Tinianensis, Gmelin, S. N. i. 202; Fischer, Syn. M. 500.

33. Lant, Lampt oder Dant, Dapper, Africke, 24; Leon, Afrikan. 751; Eberl. Naturlehre, i. 287.
   Bos humilis, Frisch. Natursys. i. n. 5.


Osteology.

Taureau, Daubenton, Buff. H. N. iv. t. 23.

Bœuf sans cornes, Cuvier, Oss. Foss. iv. t. 9. f. 3, 4.

Bœuf de la Romagne à grandes cornes, Cuvier, Oss. Foss. iv. 109. t. 9. f. 7, 8.

Petit bœuf d’Ecosse à cornes descendants, Cuvier, Oss. Foss. iv. 109. t. 9. f. 9, 10.


2. Bos Indicus. The Zebu.

Forehead convex; withers with a more or less large fleshy hump; dewlap deep, waved; the upper part of the rump shelving very much.

Bos Seythicus gibbosus, Charlet. Exerc. 8.
Bos Indicus, Linn. S. N. 99; Erxleb. Syst. 240.
Bos Zebu, J. Brookes, Cat. Mus. 65, 1825.
Domesticated Cows, Hodgson, J. A. S. Beng. i. 348, 382.
Hab. India. Always in a domestic state.

Indian Bull, Penn. Syn. 6. t. 1. f. 2.
Zebu, Buffon, H. N. xi. 439. t. 42; Bewick, Hist. Quad. 44. fig.
Bos Indicus, Linn. S. N. i. 99.

2. Great Indian Ox, Pennant, Quad. t. 16. f. 2, lower figure.
Bos Taurus indicus, a. major, Fischer, Syn. 499.
Zebu grande race, Desm. Mam. 499.
Indian Ox, Bos Taurus indicus, Bennett, Gard. Zool. Soc. i. 65. fig.
The head and horns of a larger Zebu. India. Presented by Jacob Bell, Esq.

3. Bos Taurus indicus, Cuvier, Menag. Mus. t. 9, grey.
Bos taurus indicus minor, Fischer, Syn. 499.
Petit Zebu, Desm. Mam. 499.
A Shaur or Sacred Bull, Hardw. Icon. ined. Brit. Mus. n. 10,975. t. 179.
Horns project forwards, and form a considerable angle with the forehead.

4. Zebus, Knight, M. A. N. f. 730–753.
Horns placed nearly on the same line as the forehead; prepuce large, often visible in the females.
5. Madras Ox, Buchanan, Mysore, ii. 8. t. 13. f. 34.
7. Seringapatam Oxen, Buchanan. l. c. ii. 8. t. 15. f. 38, 39.
Hab. India, Mysore.
8. Two-humped Zebu.
Zebu à deux bosses, Desm. Mam. 499.
Bos Indicus ditophus, Fischer, Syn. 499.
Hornless Zebu, Zebu sans cornes, Cuvier, Menag. Mus. t.
Hab. India.
Rindviech, Pallas, N. Nord. Beytr. iv. t. 3.
Hab. Bucharia, from Arabia.
t. 103.

Osteology.
Zebu à cornes, Cuvier, Oss. Foss. iv. 109. t. 9. f. 5, 6.
Gun Bullock, Hardw. Icon. ined. B. M. 10,975. t. 188.
Skull, young (lower jaw wanting).
Two skulls of domesticated cattle of Nepal, male and female.
Presented by B. H. Hodgson, Esq.

Face rather narrow; forehead very flat, with the horns on the side of the high occipital ridge; withers with a small but distinct hump.

Bos elegans et parvus africanus, Bellon. Obs. 119. fig.
Dante, Purchas, Pilgrim. ii. 1002; Gunner, Geog. Zool. ii. 92; Marmol. Afrique, i. 52.
Afrikanische Zivergochs, Borowsky, Thier. i. 42; Halle vierfuss. 278.
Kleiner Afrikanischer Ochs, Klein, Thiere, 12. 35.
Afrikanische Buffel, Fisch. Natursys. i.

Bos Dante, Link, Beytr. Nat. ii. 95, 1795; Meyer, Zool. Arch. 188, 1796.

Bos Bubalus africanus, Brisson, R. A. 79.
Bos Taurus africanus, Fischer, Syn. Mam. 500.
Salam Buffalo, Whitfield.
Dwarf Bull, Penn. Syn. 9. t. 1. f. 1, 2, 3.
MAMMALIA.


Hab. Africa. West Africa; Salam; Whitfield.


OSTEOMETRY.


This animal agrees better than the Zebus with the figure of the Humped Cattle on the ancient Egyptian tombs.—Long’s Egypt, p. 57. f. 169.

Mr. Whitfield brought a pair of these animals. The male (now in the Zoological Gardens, 1850) is white, with a few brown specks on the head; the female yellow-brown, the head even narrower than that of the male. Purchas describes them as yellow.

Hybrids with wild species.

1. Between Bos Indicus and Bibos frontalis. Blackish, fore-legs white, face and withers brown.


Jungly gau, Bos Sylhetanus, F. Cuvier, Mamm. Lithog. t. , δ


Hab. India.

2. Hybrid between a Yak bull and a Zebu cow.

Tail elongate, bushy nearly to the base; withers highly crested. Black, with a white spot on withers; in winter covered with long silky hair, in summer with shorter hair, having a crest of long hair on the dewlap, and a tuft of elongated hair on the upper part of each leg. Muffle smooth.


This animal was imported as a Yak; it was for some time at the Gardens of the Zoological Society, but has been lately transferred to Knowsley.

The travellers in Tibet state that half-bred Yak are common as domestic cattle.

2. BUBALUS.

Horns depressed or subtrigonal at the base, inclining upwards and backwards, conical, and bending upwards at the tip, on a plane rather in front of the occipital ridge; forehead rather transverse, convex, shelving before and behind; the intermaxil-
MAMMALIA.

laries elongate, extending back and between the nasal and cheek bones; teats in a cross series, the outer one rather before the others.


Bos (bubali), *Sundevall, Pecora, 77.*


Syncerus, *Hodgson, 1847.*

*Horns separate, not dilated at the base, directed backwards and incurved at the tip.* Bubalus, *Hodgson.*

1. **BUBALUS BRACHYCERUS.** The Zamouse.

Forehead flat; horns short, thick, depressed at the base; ears very large, strongly fringed on the edge, and with two diverging longly fringed lines within; fur short, close, brown. Male adult with tuft of long hair on legs.


Bos bubalus, *Children in Denham & Clapperton's Trav. in Africa.*


Bos Caffer, *Ruppell, Abyssinia, spec. in Mus. Frankfort.*

Bos Caffer junior?, *Sundevall, Pecora, 202.*

Hab. West Africa, Sierra Leone, Abyssinia.

Two heads of adult covered with the skin. Central Africa. Presented by Capt. Clapperton, R.N.

**OSTEOLOGY.**


Mr. Blyth has noticed two species of Wild Ox found in Northwest Africa:—

1. Sherif al Wady (Bos Atlanticus, Blyth), from Mount Atlas. One lived some months at Tangiers.

2. Wadan? or Pecasse?, with a flowing nuchal mane; found in large herds at Rabat and Salee, on the Barbary Coast.—*Ann. N. H. ix. 62.*—This is no doubt the


2. **Bubalus Buffelus.** The Buffalo.

Foreground convex, rounded; horns large, flattened at the base, black, on the plane of the face, bent down and recurved at the tip; ears not quite half the length of the head, slightly ciliated; fur rough, irregular, bristly, often very far apart, on the face before the eyes two-rowed.


*Bos buffelus*, *Blumenb. Handb.* 121.


B. *Bubalus Bubalus*, *H. Smith.*

*Bubalus ferus Indicus*, *Hodgson, Icon. ined. in B. Mus.* t. 139.

*Bos kerabau*, *Müller, Nederl. Verhand.* i. t. 41.


*Büffel, Meyer, Thier.* ii. t. 45.

*Buffalo, Penn. Syn.* 7; *Shaw, Zool.* ii. 401. t. 211.


_Hab._ South Europe; North Africa; India; and Indian Islands.

**Var. 1.** Body nearly naked.


*Bos bubalus minor*, *Fischer, Syn.* 495.

_Hab._ Java.

A young specimen. Manilla. From the Gardens of the Zoological Society.

**Var. 2.** Horns very much elongated, nearly smooth, curved at the tips.

*Sukotyro or Buffalo, Sloane, Phil. Trans.* 26, 1727, n. 397. p. 222. f. 2, 3; *Pennant, Quad.* 25.

*Arnee, Anderson, The Bee*, 1792, xii. 105. fig. 267. t. f. c. d.


*Bubalus Arna* (var. *Macrocerus et Spirocerus*), *Hodgson, J. A.*
S. B. 1841, x. 912; Calcutta J. N. H. iv. 279; Icon. ined. B. M. t. 138.

Bos bubalus, arnee, Fischer, Syn. Mam. 495, 653.

Bos Bubalus arni, Sundevall, Pecora, 202.

Hab. India.


Osteology.

Bos bubalus, Cuvier, Oss. Foss. iv. 122. t. 9. f. 11, 12, 13, t. 10. f. 7, 8, 9, 10; Daub. in Buffon, H. N. xi. t. 28. t. 41. f. 1, 2, 3; Blumenb. Abbild. t. 63.

Horns, separate, thick, 48 inches long, 18 inches in circumference at base. India.

Skull and horns. India.

Horns, very long, separate, 78 inches.

Skull and horns.—Figured Griffith, A. K. t. 201. f. 23.

Skull and horns.

Horns, separate, slender. India.

Skull and horns.

Frontal bone and horns, short.


Skull, with horns, domestic variety. India. Presented by B. H. Hodgson, Esq.

Two skulls with horns, wild variety. India. Presented by B. H. Hodgson, Esq.

B. B. macrocerus, Hodgson, l. c. 912.


A pair of horns, very slender. Presented by B. H. Hodgson, Esq.

Skull, with horns, tame variety. India. Presented by B. H. Hodgson, Esq.

B. B. spirocerus, Hodgson, l. c. 912.

Drawings.


Drawing of four specimens.—Hodgson, Icon. ined. B. M. t. 139, copied t. 141. Presented by B. H. Hodgson, Esq.


Drawing of a male, three years old, with details of head.—Hodgson, Icon. ined. B. M. t. 142. Presented by B. H. Hodgson, Esq.

Drawing of horns of tame.—*Hodgson, Icon. ined. B. M.* t. 145.

f. 3. Presented by B. H. Hodgson, Esq.

Drawing of two horns of Indian Buffalo sent to Zool. Soc.—
*Hardwicke, Icon. ined. B. M.* 10,975. t. 173, 174.

Drawing of horns of Indian Buffalo.—*Hardw. Icon. ined. B. M.* 10,975. t. 175, 177.

Drawing of horns of domesticated Buffalo of Prince of Wales' Island.—*Hardw. Icon. ined. B. M.* 10,975. t. 176.


Common domesticated Buffalo of Bengal.—*Hardw. Icon. ined. B. M.* 10,974. t. 105.

Drawing of Indian Buffalo.—*Hardw. Icon. ined. B. M.* 10,975. t. 172, 178.

"The *Bhainsa* or Tame Buffalo are universal in India. The *Arna* or Wild Buffalo inhabits the margins rather than the interior of primæval forests. They never ascend the mountains, and adhere, like the Rhinoceros, to the most swampy sites of the district they inhabit. There is no animal upon which ages of domesticity have made so small an impression as upon the Buffalo, the tame being still most clearly referable to the wild ones at present frequenting all the great swampy jungles of India."—*Hodgson.*

"In the wilderness, as in the cow-house, there is a marked distinction between the long- (Macrocerus) and curved-horned (Spirocerus) Buffaloes.

"The *Arna* ruts in autumn, gestating ten months, and produces one or two young in summer. It lives in large herds, but in the season of love the most lusty males lead off and appropriate several females, with which they form small herds for the time. The wild Buffalo is fully one-third larger than the largest tame breeds, measuring 10 1/2 feet from snout to vent, and 6 or 6 1/2 feet high at the shoulders, and is of such power and vigour, as by his charge frequently to prostrate a well-sized elephant. It is remarkable for the uniform shortness of the tail, which does not extend lower than the hock, for the tufts which cover the forehead and knees, and lastly, for the great size of its horns; they are uniformly in high condition, so unlike the lean-ness and angularity of the domestic Buffalo even at its best."—*Hodgson.*

**Horns much enlarged and close together at the base, spreading out on the side of the head and recurved at the tip; ribs very wide, t. 2.


Bubalus, sp., *Ham. Smith in Griffith A. K.*
3. **Bubalus caffer.** The Cape Buffalo.

Forehead broad. Horns roundish at the end, depressed, and very rugose at the base; near the base becoming dilated, at length very broad, rugose, very convex, and close together over the forehead. Ears very large, half as large as the head, broad, acute, ciliated. Skin bluish purple or black, nearly naked, with some two-rowed diverging bristles on the middle of the back.


Dawf Ox, *Pennant, Syn. Quad.* i. 9. t. 2. f. 3, young horns.

Wilde Buffel, *Dutch at Cape*; *Forster, Reise die Weld*, i. 85.

Qu’araho, *Hottentots.*


*Hab.* S. Africa, in the Deserts, near Cape of Good Hope.

A male, not in a good state. South Africa. Presented by W. Burchell, LL.D.


**OSTEOMETRY.** Skulls, adult and young, t. 2. f. 1, 2, 3.

Buffle de Cap, *Daub. in Buffon H. N.* xi. 416. t. 41; *Cuvier, Oss. Foss.* iv. 132. t. 9. f. 14, 15; *Vollborth, de Bobus*, &c. 1826, t. 3.


Skull and horns. South Africa.

Skull and horns. South Africa.

Skeleton of male. South Africa. From the Gardens of the Zoological Society.

The horns of the young specimen are depressed and rugose, and very different from those of *B. brachyceros*, which Prof. Sundevall considers as the young of this species. The pair of young horns which was in the Museum of the Royal Society (*Grew, Rar. 26*), figured by Pennant (*Syn. t. 2. f. 3*), is now in
the British Museum, and at once shows the distinctness of these two species.

3. Anoa.

Horns subtrigonal, nearly parallel, round at the tip, depressed at the base, and slightly keeled on the inner edge, straight, nearly on the plane of the face on the hinder edge of the frontal ridge. Intermaxillary elongate, high up between the maxillæ and the nasal. Muffle large, rather narrow below. Hoofs very broad. Ears small, narrow, short. Tail elongate, tufted at the end. Hair of the back, from the nape to the pelvis, reversed. Skull, t. 3. f. 1, 2.

Anoa, Leach; H. Smith, Griffith A. K. v. 182; Sundevall, Pe-ecora, 74.
Antilope, § Anoa, Fischer, Syn. Mam. 647.
Bos, sp., Meyen; Gray, Spic. Zool.

Mr. Turner observes: "Although Major Smith was deceived as to the affinities of the Anoa, later as well as earlier naturalists have assigned it to its true place, and a glance at the stuffed specimen in the British Museum leaves the matter beyond a doubt. I have examined the skull in the Museum of the College of Surgeons, and cannot see that it has even a title to generic distinction. Naturalists seem at all times to have been prone to assign generic rank to whatever was mysterious or difficult to classify, and I can in no other way account for this species being made a genus."—Proc. Zool. Soc. 1849. Mr. Turner must have observed the skull very superficially, for it offers many characters, especially in the palate, which separate it from the Buffaloes and all the other Boveæ, t. 3. f. 1, 2.

1. ANOA DEPRESSICORNIS. The Anoa.

Reddish brown, with three small white spots on the cheek. Male black, spot on cheek white. Female and young brownish black.

Antilope (Anoa) depressicornis, H. Smith, G. A. K. iv. 293. t. v. 867; Gray, Spicil. Zool. t. 11. f. 23; Fischer, Syn. 647.
♀ Anoa compressicornis, Leach, MSS.
Antilope depressicornis, Leach; Gray, Spic. Zool. t. 11. f. 23; H. Smith, G. A. K. v. 867. t. 181. f. 4, head.
Antilope platyceros et Antilope Celebica, Temm. Mus. Leyden.


**Hab.** Celebes.

Male and female.  Celebes.  From the Leyden Museum.

**Osteol.** Skull, t. 3. f. 1, 2.


Skull and horns.  Mauritius?

Skull and horns.  Mauritius?

This animal was first noticed by Governor Loten. It was afterwards described by Colonel Hamilton Smith from a head with horns in the Museum of the College of Surgeons. A similar head was received by General Hardwicke (which was given by him to the British Museum), accompanied by a sketch of the head and front part of the body of the animal, which is copied in Gray’s *Spicilegia*. MM. Quoy and Gaimard afterwards published a figure of the animal, and took two male specimens with them to Paris, one of which was transmitted to Knowsley, in exchange for the specimen of *Oreas Canna* sent to Paris by the Earl of Derby: this specimen is figured in the *Knowsley Menagerie*.

*Intermaxillaries short, triangular, not reaching to the edge of the nasal bone; the upper lip bald, callous and moist, only as wide as the inner edge of the nostrils.*

Mr. Turner observes: “I fear that Mr. Gray’s distinction in the extent of the intermaxillary bones upon the sides of the nasal aperture will not always hold good.”—*Proc. Zool. Soc.* 1849.

Since this remark was penned, I have re-examined many specimens of the skull of this genus and of other oxen, and do not find any reason to doubt the validity of the distinction; I have not found a single Bison’s skull with an elongated intermaxillary, nor an Ox or Buffalo with a short one. It would have been better if Mr. Turner had cited the example which made him doubt; when I applied to him on the subject, he owned that he could not refer me to a specimen to verify his remarks.

4. *Bibos.*

Horns depressed at the base, directed outwards, posterior on the hinder ridge of the frontal bone, which is often very prominent, recurved at the tip. Withers high, keeled, supported by the spinous processes of the dorsal vertebra, and suddenly lower be-
hind. The intermaxillaries are short and triangular, and do not reach to the nasals. Brown or black (adult males). Legs beneath the knees (and sometimes the rump) white. The baldness of the upper lip converging beneath from the inner edge of the nostrils. *Skull*, t. 3. f. 3.

Bibos, Hodgson; *Gray, Knowsley Menag.*


Bos (Boves propriè), part., *Sundevall, Pecora,* 200, 1844.

Professor Sundevall regards the three species of this genus as subvarieties of a variety of the Common Bull, *Bos Taurus (Pecora,* 200, 1844).

† Forehead flat. Horns broad, depressed, black. Front half of back with an elongated keel, t. 3. f. 3. *Probos,* Hodgson.


Black; lips, forehead and legs grey; inside of ears white; forehead flat, very broad. Horns depressed, broad at the base, conical, black.

Bos bubalus var. c. Guavera, *Penn. Quad.* i. 27.


Bos frontalis, *Lambert, Linn. Trans.* vii. t. 4, young $\delta$; *Gray, List Mam. B. M.* 151; *Cat. Hodgson Coll. B. M.* 24; Deles- sert, *Souvenir Ind.* t., not good.


Bos Taurus var. 3, subvar. l. frontalis, *Sundevall, Pecora,* 200, 1844.


Hab. India, Chittagong.


Osteol. *Skull*, t. 3. f. 3.


Drawings.

Assal Gyal, \textit{Hardw. Icon. ined.} B. M. n. 10,975. t. 168.

True Asseel Gyal, \textit{Hardw. Icon. ined.} B. M. n. 10,794. t. 106, head copied from former.


Dr. Hamilton Buchanan's figure in the Library of the India House (marked \textit{Bos Guavera}, Penn. t. 7) was the first and is the best.

The Gavi or Gabi is more than half redeemed from the wild state, like the Yak of Tibet.—\textit{Hodgson, l. c. 22.}

The Jungly Gau (\textit{Bos Sylhetanus}) of M. F. Cuvier's \textit{Mammalia} is from a tracing made by M. Duvaucelle from a drawing in General Hardwicke's collection (marked "Gyale at Barackpoor," \textit{Icon. ined.} B. M. n. 10,975. t. 169, 170), taken from a hybrid specimen bred between a \textit{Domestic Gyal} and a Zebu. It has a larger, deeper and more waved dewlap than the wild species, and differently shaped horns. It was never alive in Paris, nor even seen alive by M. Duvaucelle.

†† Forehead concave. Horns pale, rather depressed at the base. Back with a prominent keel over the shoulder, and another on the middle of the back. Bibos, Hodgson.

2. \textbf{Bibos Gaurus. The Gour or Gaur.}

Hind hoof only half the size of the front. Brown; legs white.

Bos Gaur, Evans.

Bos (Bison) Gaurus (Gour), Hamilton Smith in Griffith A. K. v. 373; Fischer, Syn. Mam. 653; Elliot, Madras Journ. Sci. 1840, t. 5. adult. t. 6. f. 1 &. f. 2 &. skull.

Bos Taurus, var. 3, subvar. 2. Gaur, Sundevall, Pecora, 201.


Bos Hardwickii (Gour), J. Brookes, Cat. Mus. 65 (1825).

Bos Silhetanus, Delessert, Rev. Zool. 1839, 129.

Bos aculeatus, Schinz.; Cuvier, Thierr. iv. 492.


Gaur, Johnston, Sketch Indian Sports, t.

Gour, Knight, Mus. Anim. Nat. f. 746.

Gauri Gau, of the Tarai.

Inhab. India. Mountain district, Nepal. The male is called Gour, and the young Pararah; the female Gouvin, and the young Pareeah, in Malacca. Called Gaviya by the Mahrattas.

Male, stuffed.

OSTEOL. Elliot, Madras Journ. N. H. x. 227. t. &. f. &. skull.

Gouri Gau of Nepal (Bibos cavifrons), Hodgson, J. A. S. Bengal, x. 1841, 470. t. 1. f. 2, t. 2, 3, skulls.

Two skeletons. Nepal.


Skull and horns. India.

Skull and horns, with skin on face. India. Presented by General Hardwicke.

Horns, separate, polished. India.

Horns, separate. India.

Horns, separate, young. India.
Horns, single horn. India.
Horns, single horn. India.

**Drawings.**

_Bos Gour, Hardwicke, Icon. ined. B. M. 10,974. t. 107._

The _Gours_ inhabit the primitive forests of India, under the great ranges of mountains; they rut in winter, procreate in autumn, producing one at a birth. The herds are ordinarily rather numerous, twenty, thirty, forty, and sometimes even double that number being found together; but in the breeding season not above ten or fifteen cows, with a single mature, vigorous bull, who jealously expels every young or old male from his harem. They entirely avoid the open Tarai on the one hand, and the hill on the other, adhering to the most solitary part of the Saul forest, close to and between the salient spurs of the hills, where the periodical firing of the undergrowth of the forest never reaches. They feed early and late in the more open glades of the forest, posting sentinels the while, and manifesting in their whole demeanour a degree of shyness unparalleled among the _Bovines._ They never venture even in the rains, when there is abundance of rank vegetation to cover their approaches, into the open Tarai, to depredate on the crops, as the _Wild Buffaloes_ constantly do; nor do they ever associate or have sexual commerce with the tame cattle, though immense numbers of the latter every spring are driven into their retreats, to feed and remain there in a half-wild condition for three or four months, when the _Wild Buffaloes_ frequently have sexual intercourse with the tame ones of their kind, of which likewise vast numbers are despatched there.

Old males of the _Gour_ are often found solitary, wandering in the forests they frequent, especially in winter; but these have probably been recently expelled the herd by their more vigorous juniors, and reunite themselves with some herd after the season of love and contention has passed.

It is exceedingly difficult to rear the _Gour_ in confinement. Nor did I ever know a successful experiment, though the attempt has been for fifty years constantly made by the Court of Nepal, which finds no difficulty in rearing _Wild Buffaloes_ and causing them to breed in confinement with the domestic species, which is thus greatly improved in size and other qualities.

The _Gours_ are exceedingly shy, and when approached they retreat as long as they can; but if compelled to stand and defend themselves, they do so with a courage and determination not to be surpassed.
The beef of the Gour is unequalled for flavour and tenderness; but to the Aborigines only is it illicit food, and not to all tribes of them; nor are any of them allowed to kill it in Hindu kingdoms.

Capt. Tickell, a good observer, believes there are two species of Bibos in the Chola Nagpoor territories alone.—Hodgson, l. c. 24.

Mr. Hodgson appears to think the Bibos found beyond the Brahmaputra is a different species.

Mr. Elliot's account of the habit of those found in the Deccan differs in several particulars from that given by Mr. Hodgson.


Black, distinct large spot on rump and legs white. Calf pale brown, with a dorsal streak, widest behind, and tip of tail black; rump and legs like back, not white, as in the adult.

Bos Banting, Raffles, Linn. Trans. xiii.
Bos Taurus var. 3, subvar. 1. Banting, Sundevall, Pecora, 201.
Bos bantiger, Temm. Mus. Leyden.
Bos Sondaicus, Müller, Nederl. Verhand. i. 45. t. 35, 39.


Stuffed male. Java. From the Leyden Museum.
Skin of female. Java. From the Leyden Museum.

Osteology. Bos Sondaicus, Nederl. Verhand. i. t. 36, 39.

Skeleton of male and female. Java. From the Leyden Museum.


b. Bisons. Covered with short, crisp wool; shoulder higher than the haunches; cannon-bone of the hind-leg longer than the fore. Ribs fourteen or fifteen pairs.

Bison, Gray, Knowsley Menag. 1849.

5. Bison.

Muffle short and scarcely reaching the hinder edge of the nostrils, as wide as the space behind the inner edge of the nostrils. Horns round, rather depressed at the base, lateral, coming out before the ridge of the occiput, curved upwards and outwards.
In the skull the frontals are broader than long. The intermaxillæ are very short, triangular, not reaching nearly to the nasal bones. The head, crown and shoulders covered with longer curled hair; dewlap none; teats four in a square. Skull, t. 4. f. 1, 2.

The flesh smells of musk, hence called Bisam, which has been changed into Bison. See Pallas, Zool. Ross. Asiat. 247.

Bison, H. Smith, Griff. A. K. iv. 182; Fischer, Syn. 651.
Bonassus, sp., Wagner.

Bos γ. Bison, Sundevall, Pecora, 78.

† Tarsi elongate, fore and hind quarters subequal.


Fur blackish brown, short; of neck and shoulders longer, of chin and throat, elongate, forming a dependent mane; fore and hind legs subequal; tarsi elongate.—Bos Bison, Linn. S. N. xii.

Bos (Bison) Bison, H. Smith in Griffith A. K. v. 893; Fischer, Syn. 654; Sundevall, Pecora, 203; Baër. Bull. Petersb. i. 53.
Bos Bonassus, Brisson, Reg. A. 84; Linn. S. N. xiii. 99; Gmelin, S. N. i. 99; Erxlt. Syst. 235.
Bison jubatus, Plinii Hist. Nat. viii. c. 15.
MAMMALIA.

Uri, Cas. Gall. vi. c. 28.
Urus jubatus, Jonst. Quad. t. 19.
Afrikanischer Wilder Ochs, Müller, Naturs. i. 43; Borowsky, Thier. i. 40; Gatterer, Schaden der Thiere, i. 128; Batsch, Thiere, i. 141; Graumann, Int. H. N. 44.
Buckelochs, Gatterer, Brev. Zool. i. 67.
Munistier or Mänestier, Gesner, Thier. 297. fig.
Bos Munistier, Jonst. Quad. t. 18, 19.
Urochs or Auer Ochse or Auer Ochs, Waldchse, Wilder Ochs or Bergochs, Müller, Natursys. i. 436; Henneberger, Preuss. § 251. fig.; Zimmer. Geog. Zool. ii. 82; Borowsky, Thier. i. 39; Funke, Naturg. i. 34; Ebert, Naturl. i. 234; Halle Vierfuss. 280; Gatterer, Schaden der Thiere, i. 107; Beckmann, Naturh. 10; Klein, Thiere, 12; Martini, Naturlex. iii. 693; Batsch, i. 141; Boch, Nat. Preuss. iv. 191; Hartknoch, Preuss. Hist. i. 13; Döbel, Jagerprak. i. 20; Jablonsky, Allgem. Lex. 82; Severin, Zool. Hung. 36.
Preussische und Lithauische Auerochs, Pallas, Nord. Beytr. i. 6.

Male, stuffed in Russia. Presented by the Emperor of Russia through Sir Roderick Murchison.

OSTEOLOGY.
Buffalus, Pallas, Nov. Comm. Petrop. xiii. t. 11, 12.
Aurochs foss., Cuvier, Oss. Foss. iv. 140. t. 12. f. 1, 2, 4, 11, t. 11. f. 5, fossil.

Skeleton. Lithuania. Presented by the Emperor of Russia.
†† Tarsi short, hinder quarters very low.

2. **Bison Americanus.** The American Bison.

Crown with long, crisp hair (in all seasons). The fur dark brown; hair of head and shoulders elongate, crisp. Tarsus short, hinder quarters very low. Body and tarsus in winter covered with long hair, in summer nearly naked, except in front of body and head.

Bos Bison, Linn. S. N. i. 99; Erx. Syst. 233; Schreb. Saught. t. 299; Blumb. Handb. 121.


Taurus Mexicanus, Hernand. Mex. 587. fig. (1651).

Taureau Sauvage, Hennipen, Nouv. Découv. i. 186. fig. (1699).


Tauri vacæque Quivira, Fernand. Anim. 10.


Armenta, Lact. Amer. 303. fig. from Hernand.

Urus Bison β. indicus, Bison Catesbei, Klein, Quad. 13.

Bison, Ray, Syn. Quad. 71; Pennant, Arct. Zool. i. 1; Long, Exped. iii. 68.


Buffalo, Catesby, Carol. App. 27. fig. App. t. 20; Harmon. Journey, 415; Franklin, First Journey, 113 (110. fig. of Buffalo Pound).

Beuf du Canada, Charlev. Nouv. Fr. iii. 131.

American Oxen, Dobb’s Hudson’s Bay, 41.


American Bull, Penn. Syn. 8. t. 2. f. 2.

American Wild Ox or Bison, Warden’s United States, i. 248.

Bison (d’Amérique), Buffon, H. N. Supp. iii. 64. t. 5; F. Cuvier, Mam. Lithog. t., adult, young, and very young.

Bison, Müller, Magaz. i. 186; Bewick, Hist. Quad. 43. fig.
Wilde Ochsen und Kuhe, Kalm, Amer. ii. 350, 425, iii. 351.
Amerikanische Bison, Zimmer, Geog. Zool. ii. 89; Schäpf. Reise Nordamer. ii. 167; Pallas, Nord Beytr. i. 5.
Buklel, Ochse, Bison, Wisent, Borowsky, Thier. i. 42; Blumenb. Handb. 111.
Nordamerikanischer Bisam Ochs.

Var. White.—Richardson, Faun. Bor. Amer. 283.
Hab. N. America.


Osteology. Skull, t. 4. f. 1, 2.
Bos Americanus, Cuvier, Oss. Foss. iv. 117. t. 10. f. 3, 6.

Hybrid with Bos Taurus.

Naals Buffalo, Americans; Fischer, Syn. Mam. 496.

B. Nose ovine, covered with hair, or with a small naked space between the rather close converging nostrils. Tail short. Hair during the cold season very long, pendent. Living in the Mountains or Snowy regions.

Oxen of the Mountains or Snowy regions, Gray, Knowsley Menag.

6. Poëphagus.

Horns subcylindrical, curved outward on the front of the occipital ridge. Nose hairy, with a narrow bald muffle between the nostrils. Hoofs moderately thick, not dilated or expanded on the outer side, square, and straight in front. Tail moderate, not reaching to the hocks, and covered with long hair; teats 4, narrowing behind. Perineum, scrotum, and inside of the thighs and armpits naked. Skull: intermaxillaries short, triangular and acute behind, not reaching to the nasal bones.

Bos poëphagus (part.), Sundevall, Pecora, 202.

Professor Sundevall observes, "Inter tres divisiones generis et
MAMMALLA.

praesertim inter Bos Bubalum et bisontes medius videtur."—Pecora, 202.


1. Poephagus grunniens. The Yac or Sarlyk.

Black; back and tail often white.


Bos (Poephagus) grunniens, Sundevall, Pecora, 202.


Bos Poephagus, Pallas, Zool. Ross. Asiat. i. 249; Nov. Comm. Petrop. i. 2. 332; Nord Beytr. i. t. 1.

Poephagus, Aelian de Animal. lib. xv. cap. 14, lib. xvi. cap. 11; Marco Polo de Region. Orient. lib. i. cap. 62; Rubruquis, Hist. Général des Voy. vii.

Buoi e la codo di cavallo, N. Conti, Collect. de Ramusio, i. 340. b.


Tangutischen Büffel, Pallas, Nord Beytr. i. t. 1. 1780.

Bubuls, Bell, Travels, i. 212.

Bœboeli, Witsen, N. en O. Tart. i. 66.


Grunting Ox, Bewick, Hist. Quad. 46.

Grunting Bull, Penn. Syn. 5.

Yac of Tartary, Turner, Account, 186. t. 10; Shaw, Zool. ii. 411. t. 213.

Svora-Goy or Yak of Tartary, Asiat. Research. iv. 349. t.
Kalmükische kühe, Georgi Russland, i. 208.
Tangutesche kühe, Pallas, Reise Aus. iii. 126.
Bœuf velu, Bruyn. Iter Mosc. 120. t. 129.

Var. 1. Noble Yak. Head erect; hump large; fur very long, nearly reaching the ground; tail bushy.
The Riding Yak, Hoffmeister, Travels Ceylon, &c., 443.

Var. 2. Plough Yak. Head dependent; legs short; hair short; tail often cut off.
The Plough Yak, Hoffmeister, Travels Ceylon, &c., 441.

Female, stuffed. Black; tail and middle of back whitish.

Var. 3. Hornless Yak. Both sexes without horns.

Var. 4. Ghainorik. Larger.
Ghainorik of the Mongolians and Calmucks, Gmelin; Pallas, Act. Acad. Petrop. 1777, 255.
Yac, Stewart, Phil. Trans. 1777, lxvii. 478.

Var. 5. The Wild Yak. Much larger; the withers of the bulls high.

Hab. Thibet. Mr. Winterbottom.

Osteology. Skull, t. 4. f. 3, 4.

Bos grunniens, Cuvier, Oss. Foss. iv. 129. t. 10. f. 13, 14.

Skull and horns.
Skull of the female, with the horns bent forward at the tip.


Pair of horns of the female, slender, and bent horizontally.

Drawings.
Drawing of a group of the domestic variety.—Hodgson, Icon. ined. B. M. t. 143, copied, with front figure left out, t. 144. Presented by B. H. Hodgson, Esq.

Drawing of horns.—*Hodgson, Icon. med. B. M. t. 100. f. 1, 2. Presented by B. H. Hodgson, Esq.

The *Yaks* dislike the warmth of summer, and hide themselves in the shade and water; they swim well; both sexes grunt like a pig. The calves are covered with rough, black, curled hair, like a curled haired dog; when of three months old they obtain the long hair on the body and tail. They willingly live with the common cows, and breed with them. The long white hairs of the tail are dyed red to form the tufts of hair on the caps of the Chinese.—*Pallas, Act. Acad. Petrop. 1777, 250.*

The *Yak* used for the plough are ugly and short-legged, and hold their heads very low; the beautiful long silky hair, hanging from below the belly, is almost, if not entirely, wanting in them, no less than the bushy tail, which their avaricious owners commonly cut off as an article of trade; they are guided by the nose. —*Hoffmeister, Travels in Ceylon, &c., 441.*

The *Yak* *Ox* used in riding is an infinitely handsomer animal; it has a stately hump, a rich silky hanging nearly reaching the ground, twisted horns, a noble bearing, and an erect head (p. 441). They are very shy, and *kick with their* hind-feet, turning their head round perpetually, as if about to gore their riders (p. 443).

Our broad-footed *Yak* *Ox* is the beast with the thick, silky, white fringe under the body, and the bushy tail, both of which sweep the ground; . . . . as the steepness increased, these poor animals began to moan, or rather grunt, in the most melancholy manner, and this unearthly music gradually rose to such a violent rattle, that driven rather by its irksome sound than by the discomfort of our saddleless seat, we dismounted at the end of the first half-hour (p. 443).

The *Yak* or *Chauri* *Gau* inhabits all the loftiest plateaux of High Asia, between the Altai and the Himalaya, the Belut Jag and the Peling mountains, and is found tame as well as wild. It cannot live on the south side of the Himalaya beyond the immediate vicinity of the snows, where the tribes of the Cachars or Juxtaniean regions of the sub-Himalayas rear large herds of it, and cross-breeds with the *Common Ox*. They rut in winter, and produce young in autumn. *Cæcum* simple, not sacked nor banded, 4 inches long; ribs fourteen or fifteen pair; true dorsal ridge confined to the withers; dewlap none.—*Hodgson.*

7. *Ovibos.*

Nose ovine, hairy, without any naked muffle; inner edge of the nostril with a bald margin. Horns of the male very broad at the base, nearly united together, tapering, pressed downwards
against the sides of the head, and bent up at the tips; of the female subcylindrical, curved, far apart on the sides of the forehead. Tail rudimentary, very short, entirely hidden by the fur of the haunches. Hoofs broad; apices inflexed. Skull: the intermaxillaries short, not reaching the nasal; a small depression in front of the orbit, but no fissure; the grinders are without supplemental lobes. The tail very short, not produced beyond the edge of the pelvis; caudal vertebra thin, flattened, expanded. Skull, t. 5. f. 1, 2.

N. America.

Ovibos, Blainville, Bull. Soc. Philom. 1816, 76 (character);

Bos, § 3 (Farren, part.), Wagner!

1. Ovibos moschatus. The Musk Ox.


Bos grunniiens, O. Fab. Faun. Græn. 28.


Bisam Ochse, Herm. Naturs. xiv. 91. t. 5, head.


Musk Ox, Drage, Voy. ii. 260; Dobb's Hudson's Bay, 19, 25; Ellis, Voy. 232; Pennant, Arctic Zool. 269. fig.; Quad. 131; Hearne, Journey, 137; Parry, First Voy. 257. t.; Second Voy. 497, 503, 512; Knight, Mus. Anim. Nat. f. 767.

Ovibos moschatus, Blainville, Bull. Soc. Phil. 1816; Desm. N. Dict. H. N. xxiv. 300; Mam. 492; J. Brookes, Cat. Mus. 65, 1825; Gray, List Mam. B. M. 153; Cat. Osteol. Spec. B. M. 55; Knousley Menag. 49; Richardson, Fauna Bor. Amer. i. 275.

Musk Bull, Bewick, Hist. Quad. 49. fig.


Specimen figured Parry's First Voyage, t. 189.
Osteology. Skull, t. 5. f. 1, 2. 
Bos moschatus, Cuvier, Oss. Foss. iv. t. 10. f. 15-17, t. 13. f. 3, 8, t. 11. f. 1, 4; Pallas, Nov. Comm. Petrop. xvii. t. 17; Schreb. Saugth. t. 302; Hermann, Naturf. xix. t. 5. 
Bœuf Musque, Buffon, H. N. Supp. vi. t. 3. 

Skull and horns. 
Skull and horns, imperfect. 

Bos Pallasii, Dekay, Ann. Lyc. N. York, ii. 6; Siebel, Fauna der Vorwelt, i. 154. 
Bos moschatus, Pallas, Nov. Comm. Petrop. xvii. t. 17; Ezeretskowsky, Mem. Acad. Petersb. iii. 215. t. 6; Cuvier, Oss. Foss. iv. 150. t. 3. f. 3, 8, t. 11. f. 1, 4. 
B. moschatus B. fossilis, Fischer, Syn. Mam. 494. 

8. Budorcas. 

Muzzle hairy, with a small naked muffle only edging the nostrils; ears narrow, pointed. The fur (in summer at least) consists of short, harsh, adpressed hair. The tail is short, very depressed and hairy, like the tail of a goat. The head is large and heavy. The lips taper, and are clad with hair, like sheep. The nostrils are wide and terminal. The horns are round, smooth, lunate; they are nearly in contact on the top of the head; their direction is vertically upwards, then horizontally outwards or to the sides, and then almost as horizontally backwards. The limbs short and straight; the hoofs broad. Skull, t. 5. f. 3, 4. 


Mr. Hodgson observes, "The Takin is the nearest ally to the Gnoos, but has various points of stronger connection with Musk Oxen. Horns are on the highest part of the forehead, as in the Ox and Sheep, though not, as in them, at the posteal termination of the head, for the encephalon of our animal is spread behind its horns, in the manner of the Deer and Antelopes, but more restrictedly. The horns are attached, not to the lateral margins of the frontal crest, as in the Ox, but to its superior surface, as in the Antelopes, Goats, and Sheep. The horns are nearly in contact on the top of the head, but without actual touching; their direction is vertically upwards, then horizontally outwards or to the sides, then almost as horizontally backwards. Lips are both taper and clad with hair, almost as much as in
the Goat and Sheep: the animal is consequently a browser and not a grazer. Nevertheless the mere nostrils, which are wide and terminal, have a decided Bovine character both as to form and position, and, as it were to remind us of the true Bovine muzzle, there is a clear broad margin round the nostril which is quite nude and moist."

Mr. Turner (Proc. Zool. Soc. 1849) thinks "this genus is closely allied to Nemorhædus, and has no relationship with the Gnu or the Musk Ox;" indeed he appears to consider it as a species of that genus!

Mr. Blyth "believes its affinity to be strictly Caprine, with little relation either to the Bovine or to the Gnous (Catoblepas), notwithstanding the very remarkable form of the horns."—Journ. Asiat. Soc. Bengal, 1850, 348.

1. **Budorcas taxicola.** The *Takin*.

Yellowish grey. Hairs yellow, black tipped. The head, neck, dorsal streak, belly, limbs and tail black; they are sometimes entirely black.

**Budorcas taxicola (Takin), Hodgson, Journ. Asiat. Soc. Bengal, 1850, 65. t. 1; Gray, Knowsley Menagerie.**

**Nemorhædus (taxicola), Turner, Proc. Zool. Soc. 1849.**

*Hab. Eastern Himalaya. The Mishmi Mountains. Called *Takin* by the Mishmis, and *Ken* by the Khamtis.*

Female. **Mus. Asiat. Soc. Calcutta.**

**OSTEOL. Hodgson, l. c. t. 2, skull, copied, t. 5. f. 3, 4.**

Subtribe II. **Antilopeæ.** The horns conical, bent back, cylindrical or compressed, and ringed at the base. The knee (or wrist) in the middle of the fore-leg.

"Occipital plane of skull forming an obtuse angle with the frontal plane. Core of the horns thin, consisting of dense bone, often with a clear sinus at the base within. Horns seated on the upper surface, below the crest of the frontals, and apart at the base. Teats 2 or 4. Feet-pits in hind feet, and generally also in the fore ones."—Hodgson.


**Antilopidae, Tetraerocidae, Rupicapradæ, et Damalidæ, Brookes, Cat. Mus. 63. 1828.**

**Bovidæ et Capridæ, part., Ogilby, P. Z. S. 1836, 137.**

**Antilope?, Gazella?, Dryxis?, Bubalis?, Enagrus, Rafinesque, Anal. Nat. 56. 1815.**
Antilope, *Pallas, Spicil. i. 1, 1767*; *Zoogr. Rosso-Asiat. i. 249.*

*Sylvicaprina, Bovina, Antilopina, et Caprina, part., Sundevall,* *Pecora, 51.*


The Antelopes have been divided into various subgenera by different authors.


M. Desmarest, in his *Species of Mammalia*, adopted M. De Blainville's arrangement, separating *Oreas* from *Boselaphus*, and *Antilocapra* from *Rupicapra.*—*Mamm. 4to, 1820.*

Fischer, in his *Synopsis Mammalium*, also follows De Blainville's divisions.—*8vo, 1829.*


Colonel Hamilton Smith, in *Griffith A. K. v.*, divides the *Antelopes* of *Pallas* into three genera:—


Mr. Ogilby ("On the Generic Character of Ruminants") divides them into two families, on the form of the muzzle:


Professor Carl Sundevall ("On the Pecora of Linnaeus," in Swedish, in Kongl. Vetens. Akad. Handl. 1844, published separately in German in 1848) divides the Antelopes into four families, according to the form of the hoofs.

I. CAPRIDE. 1. Nemorhedus. 2. Oreotragus.


III. BOVIDE. 1. Oryx. 2. Catoblepas. 3. Anoa. 4. Por- tax. 5. Damalis.


Rafinesque names, but does not define, the following genera, which appear to belong to this tribe: Antilope, Gazella, Strepsiceros, Dryxis, Addax, Bubalis, and Enagrus.—Anal. Nat. 56, 1815.

In the Annals and Magazine of Natural History for 1847, Gleanings of Knowsley Menagerie, vol. ii. 1850, and Proc. Zool. Soc. 1851, 111, I proposed to divide them as they are arranged in this work.

**Synopsis of the Genera of Antilopea.**

I. Nostrils bald within. Antelopes of the Fields.

A. Body light, elegant. Limbs slender. Hoofs small. Tail short, or moderate, covered with elongated hairs at the base. Horns lyrate or conical, placed over the eye-brows. True Antelopes.


* Nose very high; nose-hole of skull very large.

**Nose conical, tapering. Horns black.**

2. *Pantholops.* Horns elongate, compressed, sublyrate. Nose of male with a dilatation on each side; nose-hole large.


---

*b. Horns small, slender, straight, conical.*

† Crumen large. Muffle generally large.


††† Crumen a glandular line on side of face. Muffle large.


b. Body large, rather heavy. Limbs slender, strong. Tail elongate, cylindrical at the base, and with longer hair at the end, often forming a compressed ridge. Muzzle cervine. Cervine Antelopes.

a. Neck not maned.


b. Neck maned on the sides.


c. Nape with a linear, central, compressed, recurved mane.


22. *Oryx*. Horns elongate, straight, or slightly recurved.


24. *Capricornis*.

b. Nose ovine, hairy.


27. *Rupicapra*. Horns slender, erect, bent forward at the tip.

28. *Antilocapra*. Horns compressed, with a process in front, conical, and recurved at the tip.

d. Muzzle very depressed, spongy and bristly. The Equine Antelopes.


e. Muzzle moderately broad, with a small moist muzzle. Bovine Antelopes.

32. Damalis. Horns on front of frontal bone, regularly lyrate.

"The genera of the Antilopece being more numerous are worthy of a more minute examination, considering as I do that it is important to divide these numerous genera into natural groups, more especially as there appears to be a character afforded by the nostrils which has been hitherto overlooked, and which separates them into two very distinct and easily recognised sections. This character shows the real position of the Gnu, and at the same time proves that Colonel Hamilton Smith was correct in forming his genus Damalis, though he did not discover the character by which it was best to be defined, and hence placed with it some species that were not truly allied to it; and it leaves the other Antelopes easily reducible into small groups."—Gray, Ann. & Mag. N. H. 1849, 231.


MAMMALIA.

51

a. Horns lyrate, (or rarely cylindrical subspiral,) strongly ringed at the base. Nose ovine, without any naked muffle; inguinal pores deep. Crumen generally distinct.

a. Nose high, compressed; nose-hole of skull very large.

1. Saiga.

Horns short, strong, lyrate, annulated, white. Nose compressed, very high, rounded. Nostrils very close together. Crumen distinct. Fur soft. Skull: nose-opening very large, extended back to over the eyes, t. 6. f. 1. 2.—Pallas, Spic. Zool. xii. t. 3. f. 9, 10.


Antilope (Gazelle), sp., Licht. Berl. Mag. vi. 172, 1814; Sundevall, Pecora, 86.


Gazella, sp., Turner, P. Z. S. 1849.

Colus, "Wagner."

Mr. Turner observes, "This genus (Gazella) seems prone to exhibit in certain species inhabiting more temperate regions, enlargements of, or appendages to, the respiratory passages; for example, the enlarged larynx of G. gutturosa, the elevated nose of G. Colus, and the appendages to its sides in the Chiru (G. Kemas); these seem to be physiological adaptations, in no case marking a group, and therefore insufficient to warrant generic distinction, which has been made in the two latter instances. However, not having as yet seen entire skulls of these species, I retain them provisionally in this genus, judging by the horns. I think few naturalists will set forth, with Mr. Gray, the colour of the horns of the Saiga as a generic character." If Mr. Turner had consulted Pallas's description and figure of the skull of the Saiga, or Hodgson's figure of the skull of the Chiru, I think he would have been satisfied they were good genera.

1. Saiga Tartarica. The Colus and Saiga.

Pale yellowish; crown and back greyish washed. Young: crown greyer.

Antilope Saiga, Pallas, Misc. 6; Spic. xii. 14. 21. t. 1, t. 3. f. 6, 9, 10, 11; Zool. Ross. Asiat. i. 252; Gmelin, S. N. i. 185.

A. (Gazella) Saiga, Licht. Berl. Mag. vi. 172; Schreb. Saught. 1216. t. 276; Desm. Mam. 452; E. M. t. 52. f. 1; Fischer, Syn. 458.
A. (vera) Saiga, Blainv. B. S. Phil. 1816, 75.
Antilope Scythica, Pallas, Spic. i. 9; Penn. Quad. 86.
Capra Tatarica, Linn. S. N. i. 97, from Aldrov.
Colus Tartarica, Wagner.
Colus, Strabo, Geog. vii.
Colus Strabonis, Gesner, Quad. 893; Jonst. Quad. t. 27.
Saiga, J. G. Gmelin, Sibir. i. 212; Buffon, H. N. xii. 198. t. 22. f. 2, horns; Shaw, Zool. ii. 339.
Saigaki, S. G. Gmelin, Reis. ii. 174. t. 12.
Scythian Antelope, Penn. Syn. 35; Quad. i. 98.
Margatsch, Russians.
Hab. Siberia.
Adult male. Siberia. Mr. Brandt’s Collection.
Young ——. Siberia. Mr. Brandt’s Collection.

Anat., t. 6. f. 1, 2. Pallas, Spicil. Zool. xii. 41. t. 3. f. 9 & 10, skull, f. 6, 11, stomach; Daub. in Buffon H. N. xii. t. 22. f. 2.
Horns, separate. Russia.
Two horns, separate.

†† Nose appendaged. Nose-hole of skull rather large.

2. Pantholops.


Gazella, sp., Turner, P. Z. S. 1849.
1. **Pantholops Hodgsonii. The Chiru.**

Pale brown; chest and inside of the limbs white; front of face and front of fore-legs blackish.

Antilope Hodgsoni, *Abel, Edin. Journ. Sci.* 1827, 163; *Féruccac, Bull. xv. 141; Fischer, Syn. 462; Hodgson, P. Z. Soc. 1831, i. 52; 1832, ii. 15; 1833, 110; 1834, 80; 1835, 3; 1836, 39.


*Hab.* Thibet.


**OSTEOLOGY, t. 6. f. 3, 4. Hodgson, J. Asiat. Soc. Beng.**


Skull of male, with horns. Presented by B. H. Hodgson, Esq.


**DRAWINGS.**

Drawing of male and female, t. 146. Lithograph proof by Mr. F. Howard, t. 147.

Drawing of male and female, t. 148.

Drawing of male without inguinal gland, t. 149.

Drawing of horns, t. 150.

Drawing of skull and details of head, t. 151.

Drawing of skull of male, t. 186. f. 7, 8.

The Chiru inhabits the open plains of Thibet. They are gregarious, rutting in winter, gestating six months, having one at a birth in summer. They are very pugnacious and jealous, and in their contests often break off one of their long horns, hence the rumour of Unicorns in Thibet.—*Hodgson, l. c. 12; Journ. Asiat. Soc.* nos. 2 & 27.
+++ Nose tapering. Nose-hole of skull moderate.

3. Procapra.


Inhab. ravines in open plains of Thibet, in small herds or families.

1. Procapra gutturosa. The Dseren.

Pale yellowish; hair long, soft.

A. (Gazella) gutturosa, Gmelin, S. N. i. 186; Schreb. Saugth. 1221. t. 275.
A. (vera) gutturosa, Blainv. B. S. Phil. 1816, 7; Gervais, l. c. 260.


Antilope orientalis, Erxl. Syst. 288.

Antilope, Bellon. i. 311.

Capra gutturosa a, Messerschm. Mus. Petrop. i. 356.


Capra flava, Du Halde Gesch. v. China, ii. 280.


Chinese Antelope, Penn. Syn. 35; Quad. i. 96; Shaw, Zool. ii. 342.


Male and female, stuffed. Thibet.

ANAT. Pallas, Spic. Zool. xii. 52. t. 3. f. 13, horns; f. 14, stomach; f. 15, ——; f. 16, 17, larynx.

Skull, female. Siberia. From Mr. Brandt's Collection.

Hair sordid brown, with rufous tips. Underside, inside of the ears and limbs, and anal disk white. Tail black.


Hab. Thibet. B. H. Hodgson.

Perhaps the same as the former in summer coat.

Osteology, t. 7. f. 2.


Horns lyrate, strong, black. Face tapering. Nose simple. Crumen distinct. Fur short, close-pressed. Females with smaller horns. Teats 4. Skull with a suborbital fissure, and a moderate, or very slight fossa, suddenly pressed in before the orbit; the masseteric ridge rising before the orbit; the auditory bulla large and prominent; the basioccipital bone having its tubercles but little or not developed; the median incisors expanded at their summits; the molars without supplemental lobes, t. 6. f. 5.


Antilope Gazellæ (typicae), Sundevall, Pecora, 85.


† Lower part of the sides with a dark oblique streak. Feet with a tuft of black hair.


Fur rather elongate and harsh, grey brown. Outside of forelegs broad, oblique streak along the side. Edge of anal disk, front of face, and face-streak dark brown. Face-streak, throat, chest, belly, insides of thighs, and anal disk, white. Tuft at

Antilope Dorcas, Pallas, Spic. i. 11, xii. 15.
A. (vera) Dorcas, Licht. Berl. Mag. vi. 168; Berlin Akad. 1824, 231. t. 5; Saugth. t. 5; Schreb. Saugth. 1193. t. 269; Gmelin, S. N. i. 187 (E. M. t. 53. f. 2).
A. Gazella Dorcas, Blainv. B. S. Phil. 1816, 75; H. Smith, G. A. K. v. 825; Fischer, Syn. 459. 628; Desm. Mam. 453.
Antilope Gazella, Pallas, Misc. 7.
Capra Dorcas, Linn. S. N. i. 96.
Algazel ex Africa, Hernand. Mex. 893. fig.
Gazella Africana, &c., Raffi Syn. 80; Brisson, R. A. 69.

Fem.
Antilope Corinna, Pallas, Misc. 7; Spic. Zool. i. 12, xii. 16; Gmelin, S. N. i. 188; Schreb. t. 271.
A. Gazella Corinna, Blainv. B. S. Phil. 1816, 75; H. Smith, G. A. K. v. 333.
Antilope Dorcas ♂, Fischer, Syn. 259. 628.
Corinne, Buff. H. N. xii. 261. t. 27, t. 31. f. 3, 4, horns (not F. Cuvier); Cuvier, Menag. Mus. t.
Corine, Adanson.
Corine Antelope, Penn. Quad. i. 101; Shaw, Zool. ii. 193. t. 194.

Jun.
Antilope Kevella, Pallas, Misc. i. 7; Spic. i. 12, xii. 15; Gmelin, S. N. i. 187.
A. Gazella Kevella, Blainv. B. S. P. 1816, 75; H. Smith, G. A. K. v. 322.
Kevel, Buffon, H. N. xii. 204. 258. t. 26, t. 31. f. 2; not F. Cuvier.
Flat-horned Antelope, Penn. Syn. 34; Quad. i. 92; Shaw, Zool. ii. 351. t. 194.

Var. 1.
Antilope Arabica, Hempr. & Ehrenb. Symb. Phys. t. 5; Licht. Saugth. t. 6; Fischer, Syn. 460.
Antilope Dorcas var., Rüppell.
A. Dorcas var. Cora, Fischer, Syst. 628.
A. Dorcas var., Rüppell.

Male. Shores of the Red Sea?


Male, young, horns short. Egypt.


Three young kids. Egypt.

Male, adult. Presented by the Earl of Derby.

Male. Present by the Earl of Derby.

Female, young. Presented by W. Tyler, Esq.

Var. 2. Nose with a dark spot or streak.

Var. 3. Larger. Legs thicker.

G. Dorcas Cuvieri, *Gray, Knowsley Menag.* t. 3. f. 2.
Antilope Cuvieri, *Ogilby; Frazer, Zool. Typica,* t.
Kevel Gris, *F. Cuv. Mam. Lithog.* t. 3.
*Hab. Mogadore.*

Var. 4. Horns elongate.

Antilope leptoceros, *F. Cuvier, Mam. Lith.* t. 8 ♀.
*Hab. Senaar.*

Osteology, t. 6. f. 5.

Gazelle, *Daub. Buff. H. N.* xii. t. 25. t. 31. f. 1?
Kevel, *Daub. Buff. H. N.* xii. t. 31. f. 2?
Corinne, *Daub. Buff. H. N.* xii. t. 30. t. 31. f. 4?


Four pair. Horns of males. N. Africa.

Two. Single horn of males. N. Africa.


Bones of the body.

Skull.

Skull. India. From Capt. Boys’ Collection.

Skeleton. India. From the Zoological Society.

†† Upper part of the sides with a pale streak.

3. GAZELLA ISABELLA. The ISABELLA GAZELLE.

Fur short, very soft, pale yellowish brown, with a broad, rather paler oblique streak on the upper part of the side. Knee-tuft, front of face, and lower face-streak, darker yellow-brown; upper face-streak, chest, hinder edge of tarsus, underside of feet, inside
of limbs, belly and vent, white. Tail black. Female: horns very slender, longer than the head. Young paler, the lower part of the sides rather darker.


A. Isidis (Die Isis Antelope), Licht. Darstel.
A. Dorcas, Licht. Darstel. t. 5.
A. Dorcas var. a, Sundevall, Pecora, 83.


Male. Abyssinia.
Female? Kordofan. From Mr. Parrey’s Collection.

Osteology.
A skull. Abyssinia.

This species is easily known from the foregoing by the softness and fineness of the fur, and the lower side-streak being of the same colour as the back, and from it and the following by having no dark edge to the anal disk.

4. GAZELLA SUBGUTTUROSA. The JAIROU.


Antilope subgutturosa, Gulderst. Act. Acad. Petrop. 1778, i. 251. t. 9-12; Gmelin, S. N. i. 186; Schreb. Saugth. 1196. t. 270 b.


A. Dorcas var. Persica, Rüppell.

Capra Ahu, Kämpf. Exol. 403. fig. 407.
Dsheren, J. G. Gmelin, Sibir. ii. 103.
Guldenstedt’s Antelope, Penn. Quad. i. 97; Shaw, Zool. ii. 343.


A female. Siberia. From Mr. Brandt’s Collection.
*** Knees with tufts (rump-mark and throat-spot white). Side-streak none. Tail slender, compressed, only hairy above.

Dama, Bennett, Trans. Zool. Soc. i.
Cervicapra (Dama), Gervais, l. c. 1840.

5. GAZELLA SCÆMMERINGII. The ABYSSINIAN MOHR.

Pale brown. Nose, forehead, lower edge of face-streak, and end of tail, blackish. Chest, belly, angular mark on rump above tail, face-streak, and spot on throat, white. Limbs pale. Female: forehead paler in centre.

Antilope Scæmmeringii, Cretzschm. in Rüpp. Zool. 49. t. 19.
A. Gazella Scæmmeringii, Fischer, Syn. 462.
Gazella (Dama) Scæmmeringii, Gray, List Mam. B. M. 161; Ann. & Mag. N. H. xviii. 1847, 331; Knowsley Menag. 5; Turner, P. Z. S. 1849.

Hab. Lower Abyssinia. Senaar.

Male, adult, from Abyssinia. From Dr. Rüppell’s Collection. Female. Senaar. From Dr. Rüppell’s Collection.

6. GAZELLA MOHR. The MOHR.

Bay. Chin, spot on throat, chest, belly, edge and inside of limbs, and angular spot on rump above the tail, white. Spot on side of face and end of tail black.

Gazella (Dama) Mohr, Gray, Knowsley Menag. 5; Proc. Zool. Soc. 1850.
Gazella Mohr, Turner, P. Z. S. 1850, 114.

Hab. West Africa.


Var.? Bay. Chin, spot on throat, belly, lower part of sides, hinder part of the back, and inside of the limbs, white. No spot on side of the face.

Nangeur, Buffon, H. N. xii. t. 32. f. 3. t. 34; Shaw, Zool. ii. 359. t. 197.

Antilope Dama, Pallas, Misc. 5; Spic. Zool. i. 8 (from Nangeur, Buffon), xii. 22; Gmelin, S. N. i. 183; Schreb. Saugth. 1199. t. 264, from Buffon.

Antilope (Dama) nangeur, Bennett, P. Z. S. 1832, 2.
Antilope rubra, Afzelius.
Gazella (Dama) Dama, Gray, Knowsley Menag. 5; Proc. Zool. Soc. 1850.
Swift Antelope, Penn. Syn. 30; Quad. i. 84.

Not seen since Buffon’s time; perhaps a bad figure of former.

Osteology.
Nangeur, Daub. Buff. H. N. xii. t. 32. f. 3.


Whitish. Neck and front part of the middle of the back reddish. Face-streak none.

A. Cervicapra Dama, Blainv. B. S. Phil. 1816, 75, part.; Desm. Mam. 458; Fischer, Syn. 464.

Antilope (Dama) Addra, Bennett, Proc. Z. S. 1833, 2.

Cervicapra (Dama) ruficollis, Gervais, l. c. 261.
A. Dama var. orientalis, Sundevall, Pecora, 82.
Dama, Plinii H. N. viii. 53; Aldrov. Bisulc. 729. fig.

Female, stuffed. Kordofan. Senaar.


These species differ in size as well as markings. The Mohr and Andra differ from G. Šemmeringii in being of much larger size, and in wanting the black face and streaks. Bennett’s Mohr has only an angular white spot on the rump, like G. Šemmeringii; Buffon’s Nangeur is smaller, and has more white on the rump, thighs and sides; and the Andra, which agrees with the figures cited, is almost all white, with a reddish neck and withers.

*** Knees without tufts (but with rather longer hair, forming a linear keel in front). Back and rump brown. Sides with dark streak.


Bay brown; sides above paler, with a broad, dark streak below.
Chest, belly, inside of legs, back edge of tarsus, and underside of feet and anal disk, white. Face bright bay, with a broad white side-streak.

Adult female: nose blackish above. Young pale yellowish. Side-streak brownish.


Kevel (male), F. Cuvier, Mam. Lithog. t. 3; not Buffon.

Corinme, F. Cuvier, Mam. Lithog. t., young and female; not Buffon.


Two males, stuffed. Senegal.

Two females, stuffed. Senegal.

Two young, stuffed.

**ANAT.**

Skull, adult female.

Skull, young.

Buffon mentions a Corine as coming from Senegal, but he says it is smaller than the Kevel, and Daubenton says that it has knee-tufts, so that it cannot be this species. Indeed the Gazelle, Corine, and Kevel of Buffon are clearly all *A. Dorcas* of this Catalogue.

The Kevel figured by M. F. Cuvier well represents this species. He says it was sent from Senegal, and probably it has not knee-tufts, for they are not indicated in the figure, or mentioned in the text; like other descriptions of this author, though it occupies more than two pages, all the peculiarities of the species are left out. The Corine of the same author, also from Senegal, well represents the young. M. Cuvier considers the Kevel and Corine and *A. Dorcas* form one species, but afterwards, under Kevel gris, he appears to change his mind and thinks they may be two.

5. TRAGOPS.


Hab. India. Not gregarious.


The Chikara are not gregarious. They have lyrate horns, common to both sexes, knee-tuft, line along the flanks, and ovine nose of the Gazelles of Africa, but they are wholly destitute of the eye-pits; they have the large, dark-lustred eyes of the Antelopes, very unlike the small, pale-eyed Goats.—Hodgson.

Mr. Hodgson separates this genus from Gazella, because he declares it has no crumen; but Mr. Turner, who says he has seen a skull, describes it as being a typical Gazella; and Colonel Sykes described the suborbital sinuses as very small, not observable in dried skins, nor does the animal dilate them unless very much alarmed.—P. Z. S. 1831, 106.

1. Tragops Bennettii. The Chikara or Ravine Deer.

Bay brown. Knee-tuft, end of nose and tail black. Streak on haunches blackish. Face-streak, chest, belly and inside of limbs white. Feet black or brown.


Antelope Christii, Gray, B. M.

Antelope Doreas var. e, Sundevoll, Pecora, 85.
Chouka or Ravine Deer, Hodgson, J. A. S. Beng. i. 347 & 913.
The Kalsiepie or Black tail, Mahrattas.
Goat Antelope, Europeans in Deccan.

Hab. India; Madras. Nepal; Tarai.

Skin of male, with head and horns, very imperfect. Nepal.
Presented by B. H. Hodgson, Esq.
Tragops Bennetti, Hodgson.
Osteology.  Head, t. 7, f. 1.
Horns of male.  Presented by Dr. Turnbull Christie.
Antilope Christii, Gray, MSS. B.M.

Drawings.
Drawing of male and female, t. 156.
The *Chikara* carries its tail erect when in rapid motion.—Sykes.
An albino of this species now living in the Zoological Gardens has white horns.

6. Antidorcas.

South Africa.  Living in large herds, migrating.


Gazella, § 5, Knowsley Menag.

1. Antidorcas Euchore.  The Tsebe or Spring boc.


A. Gazella Euchore, Blainv. B. S. Phil. 1816, 75; Desm. Mamm. 455; Desm. Dict. Class. H. N. i. 441. t. . f. 1; Fischer, Syn. 461. 629; H. Smith, G. A. K. v. 823.
Antilope Dorcas, Gervais, l. c. 261.
A. Dorcas var. pygargus, Forster, in MSS. 62.
Antilope Marsupialis, Zimmerm. Geog. Gesch. 111. 427; Burchell, Trav. i. 290.
Antilope pygarga, Blumenb. Handb. 119.
Antilope dorsata, Lacep. in Buff.; Burchell, Trav. i. 290.
Antilope saliens, Lacep. in Buff.; Burchell, Trav. i. 290.
Antilope saltatrix, Link, Beytr. 99, from Buffon.
Gazelle à bourse, &c., Allam, Buffon Supp. iv. 142. t. 60.
Gazelle de parade, Vosmaer.
Springer Antelope, Penn. Quad. i. 94; Shaw, Zool. ii. 344. t. 192.
Springbock, Licht. Reise, i. 525, 564, 580.
Tzebi, Shaw, Reise, 151.
Gazelle, Buffon, H. N. xii. 201. t. 23, t. 31. f. 1, skull.
Barbary Antelope, Penn. Syn. 33. fig.; Quad. i. 42; Shaw, Zool. ii. 350.
Hab. South Africa.
A male, in a bad state. S. Africa. Presented by W. Burchell, Esq., LL.D.
A male. S. Africa. From the South African Museum.
A young female. S. Africa.
Osteol. Buffon, H. N. xii. 201. t. 31. f. 1, skull.
Skull and horns. South Africa. Presented by W. Burchell, Esq., LL.D.
Horns. South Africa.
Horns. South Africa.
Horns on frontal bone.
Skull, young. S. Africa.

The Spring Bok is found throughout the whole of South Africa, but in no part so numerously as in the colony, the northeastern division of which they traverse in herds of thousands, devouring everything they meet with in their course. They remain only a portion of the year, and it is during that season the Lion is most frequently found there. Vast numbers are killed, and the flesh dried against a season of scarcity.—A. Smith.

The Springbock at certain periods make a trak bokken or grand migration. They march slowly and steadily along, like the flood of a river, about half a mile in width. These vast legions will continue streaming along in an unbroken, compact phalanx for two or more hours.—R. G. Cumming, Hunter’s Life, i. 122.

7. Æpyceros.

Skull with "no suborbital fissure nor fossa, but a wide opening on the side of the muzzle, between the maxillary and intermaxillary bones; the masseteric ridge rising before the orbit; the auditory bulla large and prominent, with only a small groove on its outer side to receive the attachment of the stylohyal bone; the occiput broad, somewhat produced downwards; its basal portion with the posterior pair of tuberæs broad, the anterior ones small. Molars without the supplemental lobe."—Turner. Skull, t. 7. f. 3.

Æpyceros, Sundevall, Pecora, 87.

Major H. Smith erroneously assigns a suborbital sinus to this animal.

1. Æpyceros Melampus. Pallah of Rooye Boc.

Bay; sides and beneath paler. Belly, anal disk, and lower side of tail white. Crown, anal streak and tip of tail blackish. Tuft above feet, and back of feet black.

A. (Gazella) Euchore, Desm. Mamm. 456; H. Smith, G. A. K. iv. 198. t., v. 828; Fischer, Syn. 463. 630; Burchell, Trav. ii. 301.

Antilope Melampus, Gray, List Mam. B. M. 162; Cat. Osteol. B. M. 56; Knowsley Menag. 6; Turner, P. Z. S. 1849.
Betjuan, Caffers.
Hab. South Africa.

Adult male. S. Africa. From Dr. Smut’s Collection.
Adult female. From Dr. Smut’s Collection.
Young male. From the South African Museum.
Female. S. Africa. Presented by the Earl of Derby.

Horns. South Africa. Presented by William Burchell, Esq., LL.D.

Two pairs of horns. S. Africa.
Two pairs of horns. S. Africa. Mr. Argent’s Collection.
The Pallah is common in the wooded country north of the Kurrichane, where it occurs in herds equally as large as those of the Spring Bok are more to the southward. It feeds on grass or the more delicate twigs of the brushwood. When startled, they generally move off in perfect files, and will not diverge far from the course they first adopt, even to avoid a man, which renders them an easy prey to the hunter who carries fire-arms. Where not disturbed by hunters, they are less shy than the Spring Bok. The flesh is esteemed.—A. Smith.

8. Antilope.

Horns elongate, subspiral, erect, diverging. Face tapering. Nose simple. Crumen large. Skull with a small suborbital fissure and a very large suborbital pit. The tubercles and median grooves of the basioccipital bone well developed, t. 8. f. 1. 3.

Hab. India. Gregarious.


Antilope (Gazellæ), sp., Sundevall, Pecora, 86.

Strepsiceros, sp., Rüppell, Verz. Senck. 183, 1845.

1. Antilope bezoartica. The Antelope or Sasin.

Grey brown or black. Lips, orbits, chest, lower part of sides, belly, edge and inside of limbs, white. Nose, front of shoulder and outside of thighs, end of tail and front of feet, blackish. Neck redder. Young with a narrow pale streak on the upper part of sides.

Antilope Cervicapra, Pallas, Misc. Zool. 9; Spic. i. 18. t. 1, 2. xii. 19; Gmelin, S. N. i. 192.


Capra Cervicapra, Linn. S. N. i. 96.

Strepsiceros Cervicapra, Rüppell, Verz. Senck. 183, 1845.

Damalis Cervicapra (Ledmee), *J. Brookes, Cat. Mus.* 64, 1828.
Gazella, *Jonston, Quad. t. 29; Brisson, R. A.* 68.
Tragus Strepsiceros, *Klein, Quad.* 18.
Lidmee, *Shaw, Trav.* 243?
Antelope and Antelope des Indes, *Buffon, H. N.* xii. 215, 217. t. 35. t. 36. f. 1, 2; *Suppl.* vi. t. 18, 19; *F. Cuvier, Mam. Lith.* t.
Common Antelope, *Penn. Syn.* 32; *Quad.* i. 89. t. 15; *Shaw, Zool.* ii. 336. t. 191.
Bahmunnee Hurn, *Sykes.*
Hab. India, in the dry, open plains, in flocks of scores.

A male. India.

**OSTEOLOGY.** Skull, t. 8. f. 1-3.
Antelope, *Daub. in Buffon H. N.* xii. 273. t. 35. t. 36. f. 1-3.

Three bases of skulls and horns. India.
Skull and horn. India.
Skull and horn. India.
Skull and horn. India.
Skull, with horns, of adult male. India. Presented by B. H. Hodgson, Esq.
One odd deformed horn. Presented by B. H. Hodgson, Esq.
Two pairs of horns. India. Mr. Argent’s Collection.

**DRAWINGS.**

The Black Antelopes are very gregarious on the open, dry plains of India.—*Hodgson.*

b. Horns small, slender, straight, conical, tapering, more or less diverging, and often bent forward at the tip. Muzzle generally large and moist.

a. Crumen large. Muzzle large.

9. **TETRACERUS.**

Muzzle large. Crumen large, longitudinal. Horns 4; front
pair very short, placed over the orbits; hinder on back edge of frontal, conical, straight. Skull like Cephalophus, with nasal bones not expanded. Suborbital fossae large, shallow, occupying nearly the whole of the cheek. Knee-tufts none. **Females hornless.**

**Skull**, t. 9.


Tetraceros, *J. Brookes, Cat. Mus.* 64, 1828.

Tetracerocidae, *J. Brookes, Cat. Mus.* 64, 1828.

1. **Tetracerus quadricornis.** The CHOUSINGHA.

Front pair of horns conical, distinct.


Tetracerus Chicara, *F. Cuv. Mam.* t. 3.

Tetracerus striaticornis, *Leach, MSS.*


Tschikara, *F. Cuvier, Mam. Lith.* t. , from *Hardwicke, Icon.*


Tetraceros striaticornis (Chickara), *Leach in Brookes’ Cat. Mus.* 64, 1828.

Cervus albipes, *F. Cuvier, Mam. Lith.* t. 9.


Chousingha, *Hindoos.*


A female; rufous, without any dorsal streak, and with the front of the fore legs pale. Nepal. Presented by B. H. Hodgson, Esq.

Osteology. Skull, t.
Horns. North India.
Frontal bone, with horns.
Skull, with lower jaw. India. Presented by B. H. Hodgson, Esq.

Skull. India.

Drawings.

M. De Blainville, in describing this animal, from Dr. Buchanan Hamilton's drawing in the India House Library, read Moorshadabad, the habitat, for Hoornadabad, and thought it the name of the animal.
The Chouka inhabits the forests of India, avoiding the mountains and open plains. They are not gregarious; rutting in summer, and gestating six months, the young mostly born in January or February. They are very shy, and when hunted lie close or go off far ahead, bounding like the common Antelope, and hence one of their names from Chouk, a leap.—Hodgson.

2. Tetracerus Iodes. The Rusty-red Chousingha.

Osteol. Hodgson, l. c. t. 4. f. 3, skull.


Osteol. Hodgson, l. c. t. 4. f. 1, 2, skull.


Antilope subquadricornutus, Elliot, Madras Journ. 35. t. 4. f. 2.


Hab. India. Bombay.


Osteology.


10. Calotragus.


Skull with "a small suborbital fissure, with a large deep fossa suddenly pressed in before the orbit; the masseteric ridge rising a little before the orbit; the auditory bulla rather large and prominent; the basioccipital bone flat and smooth; the median incisors expanded at their summits, and the molars without supplemental lobes." Skull, t. 8. f. 4, 5.

Calotragus, part., Sundevall, Pecora, 68.


Tragulus (grisea), H. Smith, Griffith A. K. v. 182; not Brisson nor Ogilby.


Oreotragus, sp., Gray, List Mam. B. M. 164; Turner, P. Z. S. 1850.

Ledunca, sp., H. Smith.


Fulvous ash. Hair uniform. Small spot on nose and two diverging streaks on crown to nape blacker. Upper part of throat, chest and abdomen white. Ears three-fourths the length of head. False hoofs none.

Var. 1. Glaucous, hair white-tipped.


A. Cervicapra Stenbock, Blainv. B. S. Phil. 1816, 75.


Antilope fulvo-rubescens, Desmoul. D. Class. H. N. i. 446.
Antilope (Tragulus) rupestris, Burchell, Trav. i. 202. 281, ii. 15; H. Smith, G. A. K. v. 838; Harris, W. A. Africa, t. 25. f. 2.

Steinbock, Buffon, H. N. Supp. vi. 185.

Tragelaphus Tragulus, Rüppell, Verz. Senck. 181.

Hab. S. Africa.

Three males. S. Africa.

Three females. S. Africa.

Four young. S. Africa.

Osteology. Skull, t. 8. f. 4, 5.

Two skulls, males.

One skull, female.

Two skulls, young.

Var.? Paler.


Bleekbock, Forster, MSS.; Buffon, H. N. Supp. vi. 186.


Vlacksteenbock, Sparrm. Reise, 630.

Antilope rufescens, Burchell.

Var.?


Hab. S. Africa.

This species varies much in colour, perhaps according to the season; sometimes the hairs are whitish at the tip, giving the fur a glaceous appearance; the black streaks are as distinct in the young as in the adult.

A. rupestris (the Steinbok) has favourite feeding- and resting-places, to which it returns as speedily as possible if driven from them. It occasionally crosses pools and streams, and even lies down in them, to avoid leaving its scent, when hunted by dogs. —A. Smith.

**False hoofs small.**


Red bay, with intermixed white hairs. Crown with two dark streaks. Ears two-thirds the length of head. False hoofs small.


Tragelaphus melanotis, Rüppell, Verz. Senck. 181, 1845.


A. Cervicapra grisea, Blainv. B. S. Phil. 1816, 75.


Cervicapra (Tragulus) grisea, Gervais.

Oreotragus melanotis, Turner, P. Z. S. 1849.

Antilope rubro-albescens, Desm. Dict. Class. H. N. i. 446.

Oreotragus griseus, Gray, List Mam. B. M. 164.


Grysbok, Forster, MSS.; Buffon, Supp. vi. 183.

Var. pallida. Pale ashy white. Hairs some white, others lead-coloured with grey tips.

Calotragus melanotis pallida, Gray, Knowsley Menag. 7; Proc. Zool. Soc. 1850, 118.

Hab. S. Africa.

Male. Cape of Good Hope.
Female. Cape of Good Hope. Presented by William Burchell, Esq., LL.D.

Young, with two large black oblong spots on each side of the back of the forehead and the tip of the nose. Cape of Good Hope. From M. Verreaux' Collection.

Yellowish grey, with two black oblong spots on back of forehead. From M. Verreaux' Collection.

11. Scopophorus.


Calotragus, sp., Sundevall, Pecora, 68.

Cervicapra c. redunca, sp., Gervais, l. c. 261, 1840.


1. Scopophorus Ourebi. The Ourebi.

Temple spot small, indistinct. Fur red brown. Cheek paler. Crown darker red brown. Orbit, chest, belly and middle of upper part of inner side of legs, white. End of tail, arched line before the eyes, and spot between the ears, black.

Var. End of nose blackish.


Cervicapra Redunca scoparia, Gervais, l. c. 261.

Antilope melanura, Bechst.

Antilope Ourebi, Shaw, Zool. ii. 320; Lesson, Man.


Ourebi Antelope, Penn. Quad. i. 79.

Oreotragus Scoparius, Gray, List Mam. B. M. 164; Turner, P. Z. S. 1849.

Hab. S. Africa.

Male, female and young. S. Africa. Cape of Good Hope. From the South African Museum.

Two females. S. Africa.
Osteology.
Two skulls. S. Africa.

The *Ourebi* live in the continuous swards of tall grass near the sea-coast, but they are nearly exterminated near the colony, and now chiefly confined to the country between the Uuzimvooboo River and Port Natal.—A. Smith.

2. *Scopophorus montanus*. The *Gibari*.

Temple spot large, deep (more than half an inch over), naked. Fur greyish brown. Cheeks paler. Crown red brown. Orbits, chest, belly, under side of tail, and middle of the inner side of the upper part of the legs, white. End of tail and arched line before the eyes black.


*Hab.* Eastern Africa; Abyssinia; *Rüppell*. West Africa; Gambia; *Earl of Derby*. *Mus.* Earl of Derby.

Very like the former, but grey brown, and the temporal spot much larger, deeper, more distinct and bald, both when alive and in the skin, so that it does not depend on the stuffing.

12. *Oreotragus*.


*Tragulus*, sp., *H. Smith*, *G. A. K.* v. 1827; *Fischer*, ii. 424, not *Pallas*.


*Cervicapra c.* *Tragulus*, sp., *Gervais*, l. c. 262, 1840.

1. *Oreotragus saltatrix*. The Kainsi or Klippspringer.

Dark, brown yellow, grisled. Hair grey, brown at the end, with a short yellow tip, beneath whitish. Edge of ears and feet above the hoofs black.
Antilope Oreotragus, Forster, MSS. 58; Schreb. Saugth. 1228. t. 259.
Cervicapra Tragulus oreotragus, Gervais.
A. (Cervicapra) oreotragus, Desm. Mam. 460.
Klippspringer, Buff. H. N. Supp. vi. 183. t. 29, cop. E. M. t. 54. f. 3; Penn. Quad. i. 80; Shaw, Zool. ii. 321.
Kainsi, Hottentots.
Sessa in Amareen.
Sessah in Tigreu.
Hab. Africa. S. Africa; Cape of Good Hope. East Africa; Abyssinia.

Male and female, stuffed. S. Africa.

Varies in brightness and depth of colour according to the season.


Very like Neotragus in form and character.


1. Nesotragus moschatus.

Reddish grey. Belly white. Legs pale reddish. Hair of back brown, reddish above the middle, with an obscure pale dot and blackish tip.


Madoqua, Ogilby, P. Z. Soc. 1836, 137.


Colonel Hamilton Smith did not observe the crumen.


Tragelaphus Hemprichii, Rüppell, Verz. Senck. 181.


Antilope Grimmia, Rüppell.

Antilope Hemprichii, Rüppell, Abyss. t. 5.

Cervicapra Neotragus Saltiana, Gervais, l. c. 263.

Madoqua Saltiana, Ogilby, P. Z. S. 1836, 137.

Neotragus Hemprichianus, Sundevall, Pecora, 67.

Madoqua Saltiana, Gray, List Mamm. B. M. 164.

Hab. Abyssinia.

Male and female. Abyssinia. From the Frankfort Museum.


Frontal bone with horns. Abyssinia.

The specimen described by M. De Blainville.

γ. Tear-bag replaced by a glandular line across the face. Muffle large, bald. Africa.

15. Cephalophus.

Muffle large. Crumen none, but a naked glandular line, formed of two series of pores, on the side of the cheek. Crown
crested, forming a tuft between the horns. Horns short, conical, far back on the hinder edge of the frontal bone, and inclined backwards. Skull without any suborbital fissure, a large suborbital pit occupying the whole side of the cheek; the nasal bones expanded behind, reaching over on the sides into the suborbital pit; in other respects like Oreotragus.

_Hab._ Africa.


_Cephalolophus_, _Wagler._

_Cephalophorus_, _Gray, List Mam. B. M._ 162.


_Cervicapra_, § _f. Cephalophorus_, _Gervais, l. c._ 261, 1840.


_Sylvicapra_ (mergens), _Ogilby, P. Z. S._ 1836, 138.

_Sylvicapra_, _Sundevall, Pecora_, 66.

_Tragelaphus_, sp., _Rüppell, Verz. Senck._ 181, 1845.

_Grimmia, Laurillard._

Professor Sundevall adopts Mr. Ogilby’s name for the genus. _Cephalophus_ was first used; but he rejects it, because it is badly formed. Wagler has emendedated Colonel H. Smith’s name by changing it to _Cephalolophus._—_Pecora_, 66.

Professor Sundevall has in his specific characters laid some stress on the direction of the lachrymal streak. I find, on comparing different specimens of the same species, that little reliance can be placed on this character, in stuffed specimens at least, for the direction of the streak is altered according as the skin of the face is more or less stretched.—_Gray, Ann. & Mag. N. H._ xviii. 163.

“* Knees and hind legs tufted. Ears and horns elongate. Crumens under the eyes, and a narrow naked streak on cheeks.”

1. **Cephalophus? quadriscopa. Four-tufted Antelope.**

“Buff; paler on the sides. Tail, knee-tuft, front of nose, narrow inferior lateral and anal streak, and streak across legs, blackish. Lips, breast, inside of limbs, vent and houghs, white.”


_Hab._ Senegal.
This specimen is only known from Colonel Hamilton Smith’s description and figure, who informs me that the specimen was not preserved after its death.


2. Cephalophus Grimmia. The Impoon or Duyker.

Yellowish brown (greyish in winter). Hair yellowish, with black tips. Forehead yellowish bay. Inside of ears, chin, throat, abdomen, inside of fore and hind legs, and under side of tail, white. Feet, streak on the nose and up the legs, and upper part of the tail, black. Ears elongate, nearly as long as the head, acute. Horns black, elongate, slender; base rugose and subangular in front. Skull small, short. Suborbital pit large, deeply concave. The intermaxilla (in three specimens) reaching just up to the edge of the nasals. Nasal hole moderate, sides nearly parallel.

Capra Grimmii, Raii Syn. 80.
Moschus Grimmia, Linn. S. N. i. 92, from Grimm.
Capra Grimmia, Linn. S. N. ed. 10. i. 70, from Grimm.
Cervicapra (Cephalophus) mergens, Gervais, l. c. 262.
Antilope nietitans, Thunb. Mem. Petersb. iii. 312, 1811.
Cephalophorus mergens, Gray, List Mamm. B. M. 162.
Sylvicapra mergens, Ogilby, P. Z. Soc. 1836, 138; Sundevall, Pecora, 66. 133.
Cephalophus mergens (Duiker), Gray, Cat. Osteol. B. M. 57; Harris, W. A. S. A. t. 15. f. 2.
Tragelaphus mergens, Rüppell, Verz. Senck. 181.
Cephalophorus Burchelli, Gray, List Mamm. B. M. 162.
Duyker or Duykerbok, Dutch at Cape.
Hab. S. Africa. Cape of Good Hope.
Var.?

Antilope (Sylvicultrix) *b. platyotis*, *Fischer*, *Syn.* 634.

Hab. S. Africa.

Var.?

*Fischer*, *Syn.* 635.

Hab. S. Africa. Cape of Good Hope.


Cephalophorus Burchelli (a. & b.), *Gray*, *List Mam.* B. M. 162.

An adult male. S. Africa.

Two young females. S. Africa.


Osteology.

Skull, young male. South Africa.

Skull and horns. South Africa.

*Skull.* S. Africa. From Mr. Warwick's Collection.

The specimen in the Museum of the London Missionary Society (No. 8 Blomfield Street, Moorfields, formerly in Austin Friars), Case 5, described by Colonel H. Smith under the name of *A. Platous*, is the size and has the horns and ears of an adult *C. Grimmia*, but differs in being paler, and having no dark colour on the nose or feet; but it is evidently much bleached. It has certainly no relation to the *C. sylvicultrix*, with which Colonel Smith was afterwards inclined to place it as a variety (see *Grieff. A. K. Syn.* v. 344).

There are three species which have been called Antilope Grimmia:


2. *Le Grimme* of Buffon, *H. N.* xii. 307. 329. t. 41. f. 2, 3, from a head sent from Senegal by Adanson; the Antilope Grimmia of Desmarest, F. Cuvier, and H. Smith, &c.; the *Cephalophus rufilatus*. 
3. The *A. Grimmia* of Pallas, with large ears and a black streak to the horns, like *C. Campbelliæ*, but is from Guinea. I know of no species common to the W. and S. coast of Africa, so that it is probably yet to be distinguished.

The "*Fitomba" or "Philantomba" appears to be the generic name of all the W. African *Cephalophi* or Bush Antelopes.

3. **Cephalophus Campbelliæ. The Black-faced Philantomba.**

Grey and black grisled, beneath white. Cheeks, neck and chest yellowish. Forehead grey, with a black streak on the nose, widening on the forehead, and ending in a tuft of hair behind the horns. Feet and front of the fore legs reddish black. Fur soft. Hair grey, with a black ring and tips. Ears elongate, acute.


*Sylvicapra mergens* var., Sundevall, *Pecora*, 133.

*Cephalophus Burchellii* var. (*C. Campbelliæ*), Gray, *Cat. Mamm.* B. M. 162.

? *Antilope Grimmia*, Pallas, Misc. i. t. 1; *Spic. Zool.* i. 38. t. 3. t. 4. f. 3, xii. 18; Fischer, *Syn.* 468?


Hab. W. Africa.


A young specimen, with the streak up the face to the back of the forehead. Sierra Leone. Presented by Mrs. A. George Campbell.


This species differs from the *Duyker* by being much darker, and more distinctly grisled or dotted, and the under side being much whiter. It may be only a darker variety of that species.

The adult female was sent as *A. mergens*, var. *Burchellii*, by M. Sundevall (the other specimen of the same name being a true *Duyker*). The young specimen, which has been in the British Museum for several years, was sent from Africa, under the generic name of *Philantomba*, by Mrs. Ambrose George Campbell.

The *A. Grimmia* of Pallas, *Spic. Zool.* i. 18. t. 3, which he describes as grey grisled, becoming brownish ash on the buttocks; throat, chest and beneath the body white; head and neck yellowish grey; a black streak between the horns, forming a
fascia on the forehead and broader on the nose; fur softer than the Deer, but rough, of lower part of the neck rougher and more lax; feet and line on fore-legs blackish; tail black above; ears rather acute; inhabits Guinea; agrees in most respects with this species, but most probably is yet to be procured from W. Africa.

Osteology.


Fur reddish brown, very slightly black punctated. Face redder. Throat, chest, legs and belly rather greyer brown. Middle of the chin, inner side of the thighs, and under side of the end of the tail, whitish. Short streak up the nose and the front of the legs black. Skull large, elongate. The intermaxillary not reaching to the nasal. The suborbital pit very large, rather shallow. Nasal hole large, swelling out on the side.

Antilope (Cephalophus) Burchellii, *A. Smith, Griffith A. K.* iv. v. 844?; *Fischer, Syn.* 635.


Hab. S. Africa.

A small male (wants cover of horns; hair of body rather elongate). South Africa.

Young. South Africa. From M. Verreaux' Collection.

A large female (hair shorter, adpressed). S. Africa.

Inhabiting the district more or less densely covered with underwood in Caffreland and the country north of the Orange River. When interrupted in feeding, or pursued by dogs, it springs with considerable activity over such bushes as may stand in its course, and endeavours to plunge into the closest thickets for concealment; hence they are called Duiker bok.—*A. Smith.*

Osteology.


?Skull and horns. S. Africa. Presented by W. Burchell, Esq., LL.D.

Skull of specimen described *Burchell, Travels,* ii. 337, and *A. Smith, G. A. K.* iv., as *A. Burchellii.*

This species is easily known from either *C. Grimma* or *C. Campbellia* by its darker colour, and by the under sides and inside of the legs being nearly of the same colour as the back, and not white, as in those species, and also by the shortness of the in-
termaxillary and the width of the nose-hole. There has been a
great difficulty about the determination of the species which
Col. Hamilton Smith intended under the above name. The
imperfect skin which Col. Smith described having lost its hair,
has perished, and the skull alone has been preserved. This skull
exactly agrees with the skull of the species above described in
all its more important characters, but is rather smaller in size;
and the colour of the fur best agrees with Col. Smith’s descrip-
tion, for he observes that the animal is more ashy beneath, while
A. Platous, A. Ptoon and A. mergens are described as white or
whitish beneath.

*** Knees not tufted. Ears moderate, acute. Horns short,
conical, thick.


Yellowish brown, slightly punctuated with black. Neck yel-
lowish. Limbs blacker. Face-streak and feet black. Hair rather
rigid, close-pressed, reddish grey at the base; upper part po-
lished, yellow brown with dark tips. Forehead reddish.

Antilope Madoqua, Rüppell, Faun. Abyss. t. 7. f. 2.
Cephalophus Madoqua, Gray, Knowsley Menag. 9; Proc. Zool.
Soc. 1850, 121.

Madoqua, Bruce, Travels, vii. 360. t. 56.
Tragelaphus Madoqua, Rüppell, Verz. Senck. 181.
Sylvicapra Madoqua, Sundevall, Pecora, 66.

This species is very distinct from C. coronatus, being darker,
and the fur more rigid and close-pressed.

6. Cephalophus coronatus. The Coquetoon or Red-
crowned Bush Buck.

Pale yellowish brown. Middle of the back and front of fore
legs varied, with a few scattered black hairs. Crown light bay.
Crest blackish brown, bay in front. Feet and streak up the nose
blackish. Inside of ears, chin, throat, chest, belly, and inner
side of the legs, whitish. Tip of tail black. Horns short, coni-
cal. Ears acute, about half as long as the head.

Cephalophorus coronatus, Gray, Ann. & Mag. N. H. x. 1842, 266;
Sundevall, Pecora, 67; Gray, Ann. Nat. Hist. 1846, 164;
Sylvicapra coronata, Sundevall, Pecora, 133.
Hab. W. Africa; Gambia; Macarthy’s Island: called Coquetoon.
Cephalophorus sylvicultrix, Knowsley Menag. 10. t. 23. f. 3, t. 8. f. 1; Proc. Zool. Soc. 1850, 120.
Sylvicapra sylvicultrix, Sundevall, Pecora, 67.
Bush Goat, Colonists, Sierra Leone.
Hab. Sierra Leone, in swampy places.

A young male. Sierra Leone. Presented by the Earl of Derby.

A male (one horn wanting). Fernando Po. Presented by Thomas Thomson, Esq., R.N.

9. CEPHALOPHUS BADIUS. The Bay Bush Buck.


Young male. Sierra Leone; Waterloo. Presented by the Earl of Derby.

OSTEOLGY.

Skull. Sierra Leone. Presented by the Earl of Derby.

Very like *C. Ogilbii*, but darker bay; the legs are blackish; and the neck bright bay and not blackish grey, as in that species.

10. CEPHALOPHUS DORSALIS. The Bay Bush Goat.

Dark bay; shoulders and legs darker. Hair brown; a few on the haunches white-tipped. Crown and nape, a broad dorsal streak to tail, black. A spot over each eye, the lips, sides of chin, front of chest, under side of tail, and inside of the thighs, pale brown.


11. CEPHALOPHUS NIGER. The Black Bush Buck.

Sooty black; greyer in front half of body. Chin, throat, abdomen, and inside of the thighs, grey. Forehead and crown dark bay and black mixed. Cheek pale brown, black varied. Tail, end whitish.

Cephalophus niger, *Gray, Ann. & Mag. N. H.* 1846, 165; *List
Osteol. Spec. 57; Knowsley Menag. 10. t. 7. f. 2; Proc. Zool. Soc. 1850, 123; Sundevall, Pecora, 134.

Antilope niger, Temm. Mus. Leyden.

Hab. Guinea.

A male, half-grown. Coast of Guinea. From Leyden Museum.

Osteology. Leg-bones, imperfect.


Sylvicapra Natalensis, Sundevall, Pecora, 66.

Hab. S. Africa; Port Natal.

Male and two females. Port Natal. From Dr. Krauss' Collection.

Female. Port Natal. From the South African Museum.

Male. Port Natal. From Mr. Williams's Collection.

Osteology.

Skulls. Port Natal. From Mr. Warwick's Collection.

A. Natalensis inhabits the forests about Port Natal and country more to the eastward, living in thick brushwood which blocks up the intervals between the larger trees; they feed on grass, the young shoots of trees, and the more delicate twigs of the smaller shrubs. They take the place the Little Blue Antelope occupies at the Cape.—A. Smith.


Antilope (Cephalophus) Grimmia, H. Smith, G. A. K. v. 266.

Le Grimme, Buffon, H. N. xii. t. 41. f. 2, 3.

Var. 1. Sides paler, greyish red; forehead rough.
Le Grimme (Antilope Grimmia), F. Cuvier, Mam. Lithog. t., not good (not separate head).

Hab. Sierra Leone.


Osteology.


The hair is rather paler at the base, of the dorsal streak grey, with a blackish tip.

M. F. Cuvier's (Mamm. Lithog. t.) figure is the pale variety, which Mr. Whitfield regards as distinct; he says it is called Grimme by the natives: the separate head of Cuvier's plate appears to have been taken from the Guevei.

**** Knees not tufted. Ears moderate, rounded. Head with a pale streak on each side over the eyes to the base of the horns. Horns short, thick, conical. Guevei.


Grey brown or sooty black. Sides of the head and body greyer. Chin, throat, chest and belly whitish grey. Abdomen and front of thighs white. Feet and end of nose rather darker. Fur rather rigid. Hair uniform. Broad streak over each eye to the base of the horns yellowish white.

Cervicapra Cephalophus Maxwellii, Gervais.
Cephalophus Maxwellii, Gray, Ann. & Mag. N. H. 1846, 166; Knowsley Menag. 11.

Antilope pygmea, Pallas, Spic. Zool. xii. 18?


Guevei, Buffon, H. N.

Guevei (Antilope pygmea), F. Cuvier, Mam. Lithog. t., good.
La Grimme (separate head), F. Cuvier, Mam. Lithog. t.

Antilope Fredericei, Laur.
Mammalia.

Sylvicapra Frederici, Sundevall, Pecora, 66. 133.

Antilope Philantomba, Ogilby, P. Z. Soc. 1836, 121; 1839, 27.
Chevrotain du Senegal, Buffon, H. N. xii. 315. t. 43. f. 2, horns.
Petite bisches, Adans. Seneg. 114.

Royal Antelope, Penn. Syn. 28; Quad. i. 82.
Pygmy Antelope, Shaw, Zool. ii. 326. t. 188.

Guevei, Guinea.

Hab. West Africa; Senegal; Gambia.


A. Maxwellii, H. Smith, Griffith A. K. v. 852?

15. CEPHALOPHUS PYGMEA. The Noumetzi or Cape Guevei.

Grey brown. Streak over the eye, legs, and outer part of thighs, rufous. Feet grey brown. Chin, chest, abdomen and under side of tail, and inside of ears, white. Fur soft, grey, with intermixed rather rigid black hairs.


Blauwbokje, Dutch at Cape of Good Hope; Daniel, Scenery S. Africa, t.

Antilope (Cephalophus) perpusilla, H. Smith, G. A. K. v. 854; Fischer, Syn. 637.
Cephalophorus căeruleus, Gray, List Mamm. B. M. 163.
Capra pygmea, Linn. S. N. ed. 10.
Antilope pygmea, Schreb. Saugth. 1237. t. 260 B.
A. Cervicapra pygmea, Blainv. B. S. Phil. 1816, 75.
Sylvicapra pygmea, Sundevall, Pecora, 66. 122.
?Antilope minuta, Forster, MSS.
Tragelaphus pygmeus, Rüppell, Verz. Senck. 181.
Cervus juvencus perpusillus, Seba, Thes. i. 70. t. 43. f. 5.
Hab. South Africa.
A male. South Africa.
A young male, brighter. South Africa. From M. Verreaux' Collection.
A female (one horn deficient), larger. South Africa.

ANAT. Skeleton.

16. CEPHALOPHUS MELANORHEUS. The BLACK-RUMPED GUEVEI.

Grey brown. Throat and sides paler. Rump and upper part of tail black. Chin, chest, abdomen, back and front edge of thighs, and under part of tail, white. Narrow streak over the eyes whitish. Feet like back. Fur soft, pale grey, with intermixed rather rigid black hairs.

Cephalophus melanorheus, Gray, Ann. & Mag. N. H. 1846, 166; Knowsley Menag. 11. t. 10; Sundevall, Pecora, 134.
Cephalophorus Philantomba (The Guevi), Gray, Cat. Mam. B. M. 163, not H. Smith.
Hab. Fernando Po.

Male and two females. Fernando Po. Presented by Thomas Thomson, Esq., R.N.

Note.—Antilope (Cephalophus) Philantomba, H. Smith, G. A. K. v. 855; Fischer, Syn. 637—appears to be a doubtful species.

17. CEPHALOPHUS PUNCTULATUS. The GRISLED GUEVEI.

Dark fulvous brown; sides and legs rather paler. Narrow streak over the eyes and inside of ears pale brown. Chin, throat, chest, belly, front of thighs, and under part of tail, white. Hair grey at the base, with brown ends and yellow subterminal rings. Crown and upper part of tail darker. Feet pale varied.

Cephalophus punctulatus, Gray, Ann. & Mag. N. H. 1846, 166; Knowsley Menag. t. 11. f. 1; not t. 8. f. 1, as quoted.
Hab. Sierra Leone.

A young specimen (female?). Sierra Leone. Presented by Capt. Sabine.

18. CEPHALOPHUS WHITFIELDII. The WHITE-FOOTED GUEVEI.

Yellowish ash. Shoulders, outside of limbs, and hinder part of back, rather darker. Ears and crown pale yellowish brown. Streak over the eyes, cheeks, throat, belly, inside of the limbs, and ring round the feet above the hoofs, ashy white. Hair ashy grey; of the back brown at the end, with a yellow tip.
MAMMALIA.


16. *Nanotragus.*


Nanotragus, sp., *Wagner.*


Tragulus, sp., *Klein,* Quad. 22; *Brisson,* R. A. i. 65; not Gray, Ant. spinigera.

Antilope, sp., *Pallas.*

Capra, sp., *Linn.*

Moschus, sp., *Linn.* S. N. ed. 12. 92, 1766; *Erxleb.* 1788.

Nanotragus, sp., *H. Smith,* *Griffith A. K.* v. 182.


Fulvous. Throat, belly, edge of thigh and tip of tail, white.


Antilope regia, *Erxleb.* Syst. 278, from Buffon.

Antilope spinigera, *Temn. Menag.* Mamm. i. xxx. 1827; *Fischer,* *Syn.* 469; *Wagner,* Sup. 457.


Antilope pygmea, *Pallas,* *Spic.* Zool. xii. 18, from Buffon.

Nanotragus spiniger, *Sundevall,* *Pecora,* 67, 121.

Moschus pygmeus, *Linn.* S. N. i. 92 (see *Sundevall,* *Pecora* 116); *Schreb.* Saugth. 956. t. 244.


Tragulus Guinensis, *Brisson,* from Seba, t. 45. f. 1; *Klein.*

Cerva parvula africana, &c., *Seba,* *Thes.* i. 70. t. 43. f. 1–3 A, B.
Hinnulus s. Cervus pergracilis, Seba, Thes. i. 70. t. 43. f. 2.
Cervus africanus pilo rubro, Seba, Thes. i. 73. t. 45. f. 1.
Klein Hirschen, &c., Mus. Bareuth. 5. t. 5.
Chevrotain d’Afrique, Buffon, H. N. xii. 310–341. t. 42. f. 2,
horn, f. 3–6, feet.
Royal Antelope, Penn. Syn.
Guinea Musk, Penn. Syn. 59; Quad. i. 127.
Pygmy Musk, Shaw, Zool. ii. 254.
Antilope (Spinigera) spinigera, Lesson, Nov. Tab. R. A. 178.
Hab. W. Africa; Guinea.

A young specimen, stuffed, formerly in spirits, discoloured.
W. Africa; Guinea.

17. PELEA.


Hab. Africa.


1. PELEA CAPREOLA. The Rehbock or Peele.


Antilope villosa, Burchell, Travels, ii. 302, 1822.

Rehbock, Dutch; Sparrm. Reise, 517.

Eleotragus Capreolus, Gray, List Osteol. B. M. 57.
Tragelaphus Capreolus, Rüppell, Verz. Senck. 181.
Hab. South Africa.

Male. S. Africa. Presented by W. Burchell, Esq., LL.D.
Female. S. Africa.
Young. S. Africa.

Osteology.
Head and horns. South Africa. Presented by Dr. Burchell.

18. Eleotragus.

Horns conical, thick, diverging, bent back and then bent forwards at the tip. Face broad. Nose not swollen. Muzzle rather large. Crumen none. Fur harsh, of back more or less whorled. Hoofs and false hoofs rather large. Inguinal pores distinct. Teats four. Skull: "Nasal opening rather lengthened, the nasal processes of the intermaxillary bones long, yet not always reaching the nasal bones; a large infraorbital fissure, but no fossa; the masseteric ridge ascending rather high; the auditory bulla large and swollen; the basiooccipital bone with its median groove and tubercles well developed; the median incisors expanded at their summits; a well-developed supplemental lobe in the first true molar of each jaw, and usually more or less appearance of it in those behind."—Turner.

Hab. Africa, in marshy places.

Redunca, sp., H. Smith, Griffith A. K. v. 1827; Fischer, Syn. 624.
Eleotragus, sp., Turner, P. Z. S. 1850.
Cervicapra, a and β, Sundevall, Pecora, 60.
Nagor, Laurillard.

† Fur grisled, harsh, straight, with a subterminal pale band, and often whorled. Head broad. Temple with a naked spot. Muzzle large, flat, extending behind the nostrils. S. Africa.

1. Eleotragus arundinaceus. Inghalla or Rietbock.

Head broad. Temple-spot naked. Horns divergent, conical, tapering. Fur brown yellow, grisled. Hair pale brown, with a
subterminal yellow band. Cheeks and neck yellower. Base of ears, chest, belly, inside of the legs, and under side of the bushy tail, white. Front of legs black. Hair of back forms a round or elongate whorl.

Antilope arundinacea, Shaw, Zool. ii. 347. t. 193, lower fig.; Bechst.

Antilope Eleotragus, Schreb. Saugth. 1225. t. 266.
A. Cervicapra Eleotragus, Blainv. B. S. Phil. 1816, 75.
Eleotragus reducns, Gray, List Mam. B. M. 165.
Ritbock, Allom. Buff. H. N. Supp. v. 34. t. 13, 14; vi. t. 31, 32; Penn. Quad. i. 81.
Redunca Eleotragus, Rüppell, Verz. Senck. 182, 1845.
Cinereous Antelope, Penn. Syn. 86.
Antilope Lalandiana, Desmar. Mam. 462.
Antilope Lalandii, Fischer, Syn. 467.
Hab. South Africa; Cape of Good Hope.

Female (hair in the front of the dorsal line twisted, face rather darker). S. Africa.
Female (hair of the dorsal line to the loins twisted). S. Africa.
Male and female, adult, stuffed. S. Africa.
Skull. S. Africa.

OSTEOMETRY.
* Skull, female. South Africa.
Horns. South Africa.
Two skulls. S. Africa. Presented by W. Burchell, Esq., LL.D.
Horns. S. Africa. From Mr. Argent’s Collection.

Var. 1. Larger.
Cervicapra Isabellina, Sundevall, Pecora, 70.

Var. 2. With a large black rhombic spot on the back of the head, behind the ears; female.—Gray in Knowsley Menag. 13.

Afzelius, Lichtenstein, H. Smith and Sundevall have described two species of this genus as coming from South Africa; the smaller they call A. Eleotragus, and the larger A. Isabellina. The latter author has given a comparative character between the two kinds, but he has only seen two specimens of the former (a male at Berlin and a female at Stockholm), and several specimens of the larger kind. I have examined with care a series consisting of four males and five females from different parts of South Africa, and can find no distinction between them, except a slight difference in the length of the fur and in its colour. Two specimens in the British Museum are larger than the rest, and have the tarsus one-fourth longer than the others; they have a shorter fur and are of a rather brighter colour, and the front of the leg is blacker; but the fur and colour probably depend on the season when they were killed. In these respects they agree with Sundevall’s description of A. Isabellina, but they both have the temporal spot large and quite naked, while Prof. Sundevall described the spot on this species as pubescent. The female of the larger specimen has the black spot on the back of the head; some of the smaller ones have the temple-spot much smaller and less naked than the others. The two larger specimens have a single whorl of hair in the middle of the back; the others, with longer hair, show the whorls more distinctly, and have the hair from the central whorls to the shoulders forming a more or less diverging line. After examining these specimens and those in other collections, I conclude that they form only a single species. M. Sundevall, in a note just received, observes, “Mr. Wahlberg considers A. Isabellina and A. Eleotragus as very distinct, and our specimens seem to show a difference, though not very well expressed. Also I have committed a mistake, for the young female described in my Synopsis as y. under A. Isabellina is really A. Eleotragus.”

Riet or Reed Bok (Eleotragus) lives in reedy marshes, and in the grass of damp flats, in which it lies close until actually put up by the hunter or his dogs, and even then rarely running beyond musket range; hence it has been nearly exterminated near the colony.

The Rooye Rhee Bok inhabits the rugged slopes of high mountains, and the summits of those of less elevation, from the eastern district of the Cape colony to the Tropic of Capricorn, living in small herds.—Andrew Smith.
†† Fur not grisled. Hair grey, yellow tipped. Head broad. Muff small, scarcely extending beyond the nostril behind. Tail only slightly bushy. N. and W. Africa.

2. Eleotragus reduncus. The Wonto or Nagor.

Head broad. Horns conical, thick at the base, diverging. Fulvous brown, rather pale on the sides. Hair soft, grey, yellow tipped, all in regular order. Chin, throat, spot under the ear and over the eye, inside of limbs, under side of tail and lower side of the body, white. Front of legs sometimes blackish.

Antilope redunca, Pallas, Spic. i. 8 (from Buffon, Nagor, xii. 13); Gmelin, S. N. i. 184.

A. Cervicapra redunca, Blainv. B. S. Phil. 1816, 75; Desm. Mam. 458; Fischer, Syn. 464. 631; Rüppell, Abyss. t. 7, good.

Antilope reversa, Pallas, Misc. 5.
Eleotragus isabellinus, Gray, List Mam. B. M. 165.

Red Antelope, Penn. Syn. 30; Quad. i. 86; Shaw, Zool. ii. 360. ² Oureby, F. Cuv. Mam. Lithog. t.

Hab. W. Africa; Senegal; Gambia; called Wonto.

Var. 1. Larger, brighter coloured.

Antilope Bohor, Rüppell, Fawn. Abyss. t. 7; Sundevall, Pecora.


A male. W. Africa.
A male. W. Africa; Gambia.
A fawn. W. Africa; Gambia.

Pallas and Afzelius’s account of this species is derived from Buffon’s description; both he and Adanson (Hist. Nat. xii. 326) say that it is “all pale red,” and Buffon further observes that it has not the white on the belly of the Gazelles. This does not agree with our animal, which is white in several parts, but certainly not so white as the Gazelle, and has black on the legs; but as yet no other animal has been brought from West Africa which better agrees with their account or figure.
M. Sundevall considers specimens of the *Nagor* of Senegal and the *Bohor* of Abyssinia, in the Frankfort Museum, as distinct, the former having the hair of the back whorled, the foreleg with a dark stripe, and the latter having the hair not whorled and the legs pale. Our specimens, from Gambia, have the hair not whorled, and more or less distinct streaks on the fore-legs; hence I am inclined to believe the *Nagor* and the *Bohor* to be alike. Sundevall’s animal may be the *Kob*, but that has only one whorl on each end of the back, a nearly cervine muffle, and the end of the tail black.

When in Frankfort, I observed that the male *Antilope Bohor*, from Abyssinia, was rather larger than the male of "*A. redunca*", from Senegal, in the same collection, and much brighter, and the horns more slender; the female was darker and browner than the male; both sexes have more black on the carpus and tarsus than the specimen of *A. redunca* in the same Museum.


**Raphicerus.**


Is a very doubtful genus. Colonel Hamilton Smith formed it for two pairs of horns on part of the frontal bones in the College of Surgeons, which he called *Raphicerus acuticornis* and *R. subulata* (*Griffith, A. K*. t. 181. f. 2. 1). The figures are not sufficient to identify the species, and we now know that the horns of the same species differ greatly in individuals of the same species, and during the growth of the same specimen. *R. acuticornis* may be the horns of the *Duyker Boc*, *Ceph. Grimmia*?


*Cephalophus Grimmia*?


*Hab. ——. Skull.*
Cervine Antelopes. Body rather heavy. Tail elongated, with short hair at the base, and a tuft of longer hair at the tip. Horns elongate. Generally of a large size.


a. Neck not maned.

19. Adenota.

Muzzle cervine, cordate, moderate. Nose hairy between and over the nostrils. Horns sublyrate, ringed; when young recurved. Tear-bag none, or covered by a tuft of hair. Hair of back whorled, of dorsal line and back of head reversed. Tail elongate, hairy.


This genus is very like Eleotragus, but has a smaller, more cervine muzzle and lyrated horns; it differs from Kobus in the form of the tail, and wanting the mane, and from both in having a tuft of hair in the front of the orbit.

* Horns short. Tail short, hairy.

1. Adenota Kob. The Æquitoon.

Pale brown. End of nose, inside of ears, chest, belly, inside of legs and thighs, tip of tail, end band above hoofs, white. Front of fore and hind legs, and end of ears and tail, black. Hair of dorsal line reversed, with a whorl on the shoulder and loins.

Antilope Kob, Erxl. Syst. 293, from Buffon; Desm. Mamm. 457; Fischer, Syn. 463; Ogilby, P. Z. S. 1836.
A. Gazella Kob, Blainv. Bull. S. Phil. 1816, 75.
Antilope defassa jun., Rüppell.

Petit Vache brune, Adanson, *MSS.*
Kob, *Mandingoes.*
Æquitoon, *Ioliffs.*

Hab. West Africa; Gambia.

Var.? Hair longer; sides of face whitish. A female.
Kolus Sing-Sing, Gray, *List Mam.* B. M. 159 (not Bennett).

Antilope Koba, Ogilby, *Penny Ency.* fig.
Hab. E. Africa.

Female. E. Africa. Presented by Edward Cross, Esq. (Figure by Mr. Ogilby in the *Penny Ency.* as *A. Koba.*)
Female and young. Gambia. Presented by the Earl of Derby.

Osteology.

Kob, *Daub.* H. N. xii. t. 32. f. 1.

Mr. Gray observes, "A fine pair has been at Knowslsey some years. Thinking them new, I described them as *A. annulipes.* Mr. Ogilby has called it the *Nagor,* but it is scarcely the *Nagor* of Buffon. An adult male noticed by Mr. Ogilby as the *Kob* is now in the Museum of the Zoological Society; its horns, like the male at Knowslsey, are much worn down. They whistle like a stag.

"Buffon (H. N. xii. 219. 267. t. 32. f. 1) figures a skull with horns, brought from Senegal by Adanson, under the name of *Kob,* which is also called the *Petit Vache brune.* Erxleben gave this figure the name of *A. Kob,* and Pennant called it the *Gambian Antelope,* *Syn.* i. 39. The figures somewhat resemble the head of a half-grown male of this species, but the horns are longer, and have more rings than the specimen in the British Museum; but I am inclined to agree with Mr. Ogilby in believing that it was intended for this species. In *Jardin des Plantes* they called the Sing-Sing the *Kob* of Senegal; this may be a mistake for the *Koba.* I may remark that the horns of the *Koba* in the same plate of Buffon are represented with more rings than are mentioned in the description.

"Colonel Hamilton Smith describes and figures a male and female specimen which were alive in Exeter Change, and figures
the male and its skull and horns under the name of *A. adenota*, which well agrees with this species, and has the peculiar distribution of its hair; hence its name: but he says, it has 'a long open suborbital slit, and small black brushes on the knees;' but this I suspect must be a mistake, as he himself observes that no lacrimal cavity was found in the skull. He might have mistaken the tuft of hair for the gland at the distance at which he saw the specimens. He also (G. A. K. iv. 221) described a specimen which was in Exeter Change, which he regarded as the Gambian Antelope of Pennant, and calls *A. forfex*. His characters agree in most particulars with this species, but he says it had 'a long lacrimal sinus, and had small brushes on the knees.' If there was not some mistake in transcribing these descriptions, both these animals should be *Gazellas*, but I have never seen any which agreed with them.

"The young male in the British Museum shows the development of the horns of these animals. The upper rings of the growing horn fall off in large thick flakes as the horn increases in size beneath: this explains how the extent of the smooth tapering part of the horns increases in length as the horn grows, and how the number of rings are found to be nearly the same in the various ages, and different individuals of the various species. Mr. Whitfield informs me that the scrotum is rarely developed or dependent externally in different kinds of Antelopes before they have completed their first year."

The Antelope (Antelope) forfex, *H. Smith, Griffith A. K.* iv. 221, v. 827; *Fischer, Syn. Mam.* 627; which has been compared with this species, is perhaps a young *Gazella*.

**Horns elongate, recurved at the tip. Tail slender, tufted at the end.**

2. **Adenota Lechée.** The Lechée.

Pale brown. Orbit and lower part of body whitish. Front of legs dark brown. Horns elongated, strongly nodose in front. Withers with a small roundish whorl of hair.


Hab. South Africa; banks of river Zouga, lat. 22° S.


This animal is nearly as large as the *Water Buck*. The horns
are very like those of that animal; the neck is covered with short adpressed hair, and has no appearance of a mane.

b. Neck maned on the sides.


Kolus, A. Smith, Ill. Zool. S. Africa; Gray.

Cervicapra, sp., Sundevall.


Ægocerus, sp., Harris, Wild Animals Africa; Lesson.


1. Kobus ellipsiprymnus. Photomok or Water Buck.

Brownish. Rump with a whitish elliptical ring near the base of the tail. Horns converging at the tip.


Kobus ellipsiprymnus, Gray, List Mam. B. M. 159.


Male. S. Africa. From the South African Museum.

Female. S. Africa. Presented by the Earl of Derby.

Osteology.

Skull and horns. S. Africa. From Mr. Argent’s Collection.

Horns. S. Africa. From Mr. Warwick’s Collection.

The Water Buck lives in small herds on the banks of rivers, and has not occurred south of 26°. It is very timid, rushing into and crossing rapid rivers when alarmed. The flesh is not esteemed as food, having a rank, pungent smell, but the taste is less so.

2. Kobus Sing-Sing. The Sing-Sing.

Rump without any pale ring. Reddish or yellowish grey.
brown, rather greyer on the shoulders. Nose, lips, hinder parts of the thighs, under the neck, from the ears to the gullet, a streak over each eye, and ring above the hoofs and false hoofs, white. Belly and legs blacker. End of tail and legs, from shoulder to hough, black. Females greyer. Belly and upper part of legs paler.

Antilope defassa, Rüppell, Faun. Abyss. t. 3.
?Koba, Buffon, H. N. xii. 210. 267. t. 32. f. 2, horn? (more probably Damalis pygarga?).
?Senegal Antelope (part.), Pennant, Syn. 38, part. from Buffon only.

Hab. W. Africa.


Osteology.


This species varies much in the tint of the colouring, and in the length of the hair in the different seasons. In summer they are covered with very short, closely pressed fur, letting the skin be seen between the hairs. In the cold weather, and in England, the fur is longer and more abundant. The hair of the chin and neck is long and rigid in all seasons, and even in the young animals. The tail of the adult specimen is cylindrical and nearly bald, ending in a tuft of black hair; in the young specimens, especially in the winter fur, the base of the tail is fringed with hair on each side. The male is much brighter-coloured, and the chest and belly are nearly black, like the legs. The hinder parts of the rump of the young animals are greyish white; in the older specimens it becomes pure white and broader in extent.

This animal is called Sing-Sing by all the negroes. They do not think their flocks of cattle will be healthy or fruitful unless they have one of the Sing-Sings accompanying them, as some persons think a Goat necessary to be in a stable in England. The English on the Gambia call it the Jackass Deer from its ap-
pearance, and it is called Koba and Cassimause by the negroes at Macarthy's Island. Its flesh is very strong, unpleasant, and scarcely palatable.

As far as I could judge by my recollection and description, the adult specimen at Knowsley, the young male and adult female in the British Museum, the male and female at Frankfort, and the adult male in the Paris menageries, are the same species.

Buffon figured (Hist. Nat. 210, 267. xii. t. 32. f. 2) under the name of Koba a pair of horns which were in the library of St. Victor at Paris. He described them as larger and more curved above than those of the Kob, eighteen inches long, and five inches in circumference at the base, and he refers them to an animal which Adanson says is called Koba in Senegal, and the Great Brown Cow by the French colonists. Pallas refers these horns to A. Pygargus, and the figures and description agree in many particulars with the horns of that species; but they are rather longer, and have more rings. Pennant (Syn. Mam. 38) gave the name of Senegal Antelope to Buffon's short account and figure, but has added to it the description and the figure of the head of a skin which came from Amsterdam, and appears to be A. Caama of South Africa. Cuvier (Dict. Sci. Nat. ii. 235) only translated Pennant's name to A. Senegalensis. Erxleben (Syn. 293) and Zimmerman (Zool. 345) have translated Pennant's description of his skin from Amsterdam of A. Caama, and called it A. Koba, referring to Buffon's description and Daubenton's figure.

Fischer, Hamilton Smith and M. Sundevall regard the Koba of Buffon the same as the Korrigum of Denham and Clapperton, but the horns of that species are considerably longer and much thicker at the base than those described by Daubenton, and the annulations of the horns are higher and more regular. It should be remarked that Buffon describes his horns as having eleven or twelve rings, but figures them as having seventeen or eighteen. Mr. Ogilby (Penny Cyclopædia and the Proceedings of the Zoological Society) considers Buffon's Koba to be the Sing-Sing; in the length of the horns, and in the number, disposition and form of the rings, his figure more nearly agrees with the horns of that species than of that of the A. Pygargua, to which Pallas first referred it; but the horns are represented much more lyrated than any horns of the Sing-Sing I have seen; indeed, not one of the specimens which have come under my observation have had any inclination to assume that form: but as this is the only Western-African species which in any way agrees with Buffon's figure, perhaps it is best to adopt Mr. Ogilby's suggestion. The name of Koba or Kob appears to be common to many species. Schinz erroneously considers Damalis Senegalensis, Antilope adenota and A. forfex (H. Smith) as synonyms of this species.
c. Nape with an erect, recurved mane.

21. \textit{Ægocerus}.


\textit{Ægocerus, sp.}, \textit{H. Smith, Griffith A. K. v.} , 1827; \textit{Fischer, Syn.} 623; \textit{Turner, P. Z. S.'} 1850, not \textit{Pallas}.


\textit{Ægocerus, Desmar. Mamm.} 475.


\textit{Hippotragus, Sundevall, Pecora}, 72.


1. \textit{Ægocerus leucophaeus}. The \textit{Etaac} of \textit{Blauboc}.

Glaucous grey.

\textit{Capra cærulea}, \textit{Kolbe, Cap. i.} 141.

Antilope Leucophea, \textit{Pallas, Mise.} 4; \textit{Spic. Z. i.} 6, xii. 1; \textit{Erxl. Syst.} 271; \textit{Gmelin, S. N. i.} 182; \textit{Schreb. Saugth.} i. 183 t. 278.


A. \textit{Oryx Leucophea}, \textit{Blainv. B. S. Phil.} 1816, 75; \textit{Desm. Mam.} 475.


B. \textit{Oryx Equina}, \textit{Blainv. B. S. Phil.} 1816, 75; \textit{Desm. Mam.} 476; \textit{Desmoulin, Dict. Class. H. N. vi.} 446. t., head; \textit{Fischer, Syn.} 480, 645.


\textit{Aigocerus Equina}, \textit{Gray, Knowsley Menag.} 16.

Antilope aurita, \textit{Burchell, MSS.}, fide \textit{H. Smith}.
Antilope glauca, Forster, MSS.
Oryx Leucophea, Ogilby, P. Z. S. 1836, 137.
Blau bock, Licht. Reise, ii. 121.
Blau bocke, Kolbe, Vorgeb. 141.
Blue Antelope, Penn. Syn. 24. fig. head, 29; Shaw, Zool. ii. 355. t. 193.
Tzeiran, Buff. H. N. xiii. 271. t. 31. f. 6, horn; Supp. vi. 168. t. 20.
Blauw Bock, Dutch at Cape.
Antilope Truteri, Fischer, Syn. 478, 644.
Antilope (Ægocerus) barbata, H. Smith, Griffith A. K. v. 813.
Capra Æthiopica, Schinz; Cuvier, Thier. i. 403.
Bouquetin à crinière d' Afrique, Cuvier, R. A. i. 266.
Takhaize, Daniel, Afric. Scenery, xxiv. t.

Hab. South Africa.

Male. Cape of Good Hope. From the South African Museum.

Osteology.
Horns. South Africa.
Skull and horns (of female?), horns slender.
Base of skull and horns. South Africa.
Horns (separate), short, thick. South Africa.
Horns, separate. S. Africa. Mr. Argent's Collection.

Var.? Docoï or White Mouth, Mandingoës.
Kob or Koba of the Ioliffs.
Vache brune, French in Senegal.
Ægocerus equinus var., Gray, Knowsley Menag. 16.

Hab. West Africa, Whitfield.


The head of the female covered with skin from Macarthy's Island, on the coast of Gambia, which Mr. Whitfield brought home, did not appear to differ from the specimen from the Cape in the British Museum. The species does not appear to be uncommon in the locality, for Mr. Whitfield brought over several pairs of horns. He informs me the flesh is very good venison. "It is called Docoï or White Mouth by the Mandin-
goes, *Kob* and *Koba* by the Ioliffs, and *Vache brune* by the French at Senegal." This is certainly not the *Kob* of Buffon (xii. t. 32. f. 1, 2). The negroes at the Gambia declare that this animal never bears more than one fawn; for after that period, the horns increase in length, and enter the loins and destroy the animals!

The small variety in the Paris, Upsal and Stockholm Museums, described as *A. Leucopheus* by Pallas and Sundevall, which was formerly found at the Cape, but is now said to be extinct, is the size of the Common Stag, *Cervus Elaphus*. M. Sundevall observes that it is as different from *A. Equina*, as the species of *Eleotragi* and *Tragelaphi* are from one another; and he observes, in a letter I have just received, "I must tell you, that after the inspection of a whole series of *A. Equina*, which Wahlberg brought home, I am convinced that the *A. leucophae* of Pallas is a very distinct race. Our stuffed specimen, that must have been adult, has much smaller hoofs than the very young *A. Equina*, male as well as female, amongst Wahlberg’s, and the tuft over the lachrymal sinus, as I have shortly expressed in the printed survey."

Mr. Gray observes, "When I examined the specimen at Paris, I regarded it as a young or rather dwarf specimen of *A. Equina*, and the absence of the nuchal crest led to this belief; and I am not satisfied that the number of rings on the horns is a sufficient proof of its being adult."

The *Blaubok* lives in herds of six to twelve, on the slopes and summits of small hills. They are most abundant north of the Kurrichane. They are exceedingly swift. Their flesh is used as food, but has a rank flavour, and is inferior to most of the South African Antelopes.—A. Smith.


Black. Face white, with a dark streak. Female and young brown.


Antilope Harrisii, *Harris, Narrative.*

*Ægocerus niger*, *Gray, List Mamm. B. M. 158.*


*Hab.* S. Africa.

A male. S. Africa. Major Harris’s Collection. The specimen described by Capt. Harris.

Male. S. Africa. From M. Sundevall’s Collection.

Female. S. Africa. From M. Sundevall’s Collection.
22. Oryx.

Horns elongate, subulate, ringed at the base, straight or slightly arched, placed on a line with the face. Neck maned above and below. Tear-bag none. Nose subcervine. Muzzle only margining the nostrils. Hoofs narrow in front; false hoofs large. *Female ——. Female.*

**Skull:** a suborbital fissure, but no fossa, the masseteric ridge not extending high; the auditory bulla large and compressed; the basioccipital bone with a raised Eminence on each side; molars with supplemental lobes.

*Horns straight.*

1. Oryx Gazella. The Kookaam or Gemsbok.

Horns straight, shelving backwards. Throat with a bunch of black hairs. Grey. Rump, face, spinal line, lateral streak, and a very broad band on the thigh and cubitus, black in summer. Black streak on the face conjoined under the chin. Young pale brown. Hair blackish at the base.

Capra Gazella, *Linn. S. N.* i. 96.
Antilope Oryx, *Pallas, Spic. Z.* i. 14, xii. 16. 65; *Gmelin, S. N.* i. 189.


A. Gazella, *Forster, MSS.* 56.


Oryx or Gemsbok, *Harris, W. A. S.* A. t. 9, and head.

Oryx, Cuvier, R. A. i. 262.
Passan, Buff. H. N. xii. 212. 272. t. 33. f. 3; Supp. v. 157. t. 17.
Egyptian Antelope, Penn. Syn. 25; Quad. i. 72; Shaw, Zool. ii. 312. t. 183.

Gemsbock, Dutch at the Cape.
Hab. South Africa.

Female, adult. S. Africa.
Young. Presented by the Zoological Society.
Adult. S. Africa.

Osteology.
Passan, Daub. Buffon H. N. xii. t. 33.
Single horn. South Africa.
Horns on base. South Africa.
Horns on head. South Africa.
Skull and horns. S. Africa. Mr. Stevens's Collection.

The Gemsbock eat the bulb of the water-root, a liliaceous plant.—G. Cuming, Hunter's Life, i. 118.

2. Oryx Beisa. The Beisa.

Horns straight. Throat without any bunch of hair. Pale grey. Face, belly and limbs white. Front of face, two streaks on cheek (not united under the throat), narrow line along throat, dorsal streak, streak on each side of abdomen, band round upper part, and streak in front of lower part, of fore-leg, and end of tail, black.

Antilope Beisa, Rüppell, Atlas, t. 5.

Osteology.
Antilope beisa, Rüpp. Faun. Abyss. t. 5.

The male and female in the Frankfort Museum are smaller than A. Gazella of the Cape, and both have the face-streaks separate; there is a black streak on the throat, as in A. Gazella, but no bunch, nor is there any in the Frankfort specimen of A. Gazella; the mane of the nape of the male is small, indistinct, continued behind in a broader dark streak to the middle of the loins. In the male the mane is blackish, in the female like the back. They have no dark mark on the rump, found in A. Gazella.
**Horns arched, recurved.

3. Oryx Leucoryx. The Oryx.

Horns slender, slightly arched, white, reddish varied; in winter grey.

Antilope Leucoryx, Pallas, Spic. i. 14; xii. 17. t. 3. f. 1. 61.
A. Bubalides leucoryx, Licht. Berl. Mag. vi. 156; Akad. Abh. 1824, 200. t. 1; Saugth. t. 1; Gmelin, S. N. i. 190; Schreber, Saugth. 1180. t. 256; Ehrenberg, Sym. Phys. t. 3.

O. (Oryx) leucoryx, Blainv. B. S. Phil. 1816, 75; Desm. Mamm. 474.


Antilope Algazella, Rüppell; F. Cuvier, Mam. Lith. t.

Antilope ensicornis, Ehrenb.

Oryx leucoryx, Ogilby, P. Z. S. 1836, 139.

Gazella recticornis, Pallas, Nov. Com. Petrop. xiii. 468. t. 10. f. 5.

Oryx, Plin. Hist. Nat. ii. 40, viii. 55; Oppian. Cyneq. iii. ver. 445; Gesner, Quad. i. 870; Descrip. Egypt, v. t. 18. f. 9, 10; Bull. Soc. Philom. 1816, 80; Oriental Misc. i. 127.


Antilope Eleotragus, Schreb. t., not description.

Milk-white Antelope, Penn. Syn. 25; Quad. i. 76. t. 12.

White Antelope, Shaw, Zool. ii. 315. t. 184.

El Wahruh el Bukras, Persians.

Abu-hard, Jachmur and Yazmur, Arabs.

Antilope Gazella, Pallas, Spic. z. xii. 17; Gmelin, S. N. i. 190; Schreb. Saugth. 1182. t. 257 a. f. 2, horn; Fischer, Syn. 479. 645.


? Antilope bezoardica, Erxl. Syst. 274?


Capra Gazella, Linn. S. N. i. 97?


Capra s. Hircus bezoartica, Aldrov. Bisulc. 755 fig.

Algazel, Buffon, H. N. xii. 211. t. 33. f. 1, 2; Penn. Quad. i. 77; Shaw, Zool. ii. 216; F. Cuvier, Mam. Lithog. t.

Hab. N. or W. Africa; Nubia; Senaar; Senegal.

Female. Senaar.

Young. Senaar.
There is no appreciable difference between the Nubian and Senegal specimens.

**Osteology.**

Algazel, *Daub. Buffon* H. N. xii. t. 32. f. 1, 2.


Skull, young. Senaar.

**Note.**

   Hab. N. Africa. "Very doubtful;" Rüppell.

   Hab. N. Africa; desert of Haraga. "Very doubtful;" Rüppell.

*d.* Throat slightly maned. Nape not maned.

**23. Addax.**

Horns slender, elongate, ringed, slightly spirally twisted, sloping nearly in a line with the face. Forehead with long hair. Neck with a slight gular mane, but no nuchal mane. Nose ovine, hairy. Hoofs semicircular, thin-edged. Tear-bag marked with a tuft of hair.


Addax, sp., Laurill.

Oryx, sp., H. Smith; Fischer, Syn. 624.


Gazella, sp., H. Smith, G. A. K.

Damalis Acronotus, sp., H. Smith, G. A. K.


**1. Addax nasomaculatus.** The Addax.

White; forehead and front of face darker; in winter grey.

*Capra Cervicapra, Linn. S. N.,* fide Ogilby.

Antilope Cervicapra, *Children, Denham's Travels.*

Antilope Addax, Licht. Berl. Abhand. 1824, 215. t. 2; Saugth. t. 2, fem. and young; Rüppell, Zool. Atl. 19. t. 7; F. Cuv.

*Mam. Lithog.*


A. Alcelaphus Addax, Fischer, Syn. 474, 641.
Antilope Gazella mytilopes, H. Smith, G. A. K. iv. 204. t. 182. t. 183. f. 6, head; v. 821; Fischer, Syn. 636.
A. (Alcelaphus) suturosa, Fischer, Syn. 475, 641.
Strepsiceros quem Addacem, &c., Plinii H. N. xi. 37.
Strepsiceros addax, Rüppell, Verz. Senck. 183.
Strepsiceros, Caji, Opusc. 56; Gesner, Quad. 323.
Addax, F. Cuvier, Mam. Lith. t., winter and summer; Ehrenberg, Symb. Phys. t. 4.

Junior.
Oryx nasomaculata, Gray, List Mamm. B. M. 156.
Antilope (Oryx) Tao, H. Smith, Griffith A. K. v. 816.

A young female. N. Africa. From Mr. Bullock’s Museum. (The specimen described as Antilope mytilopes, H. Smith, t. 182, and A. nasomaculatus, Blainv.)
Female and young. N. Africa. Presented by the Earl of Derby.

Osteology.
* Skeleton, imperfect. Presented by the Earl of Derby.

The Caprine Antelopes. Body heavy. Legs and hoofs large. Tail very short, depressed, covered with hair to the base. Horns conical, rarely with a flat process in front.

Ovine and Caprine Antelopes, Turner, P. Z. S. 1850.
110

MAMMALIA.


'24. Capricornis.

Nemorhædus, H. Smith; Turner, P. Z. S. 1850.

Horns short, strong, conical, inclined, recurved, arising behind the orbit. Nose cervine. Muffle moderate. Tear-bag and interdigital pores large. Skull with “no suborbital fissure; the fossa rounded, shallow, very variable in size, sometimes very minute; the nasal bones rather short and broad, joining the maxillaries only by the interposition of some imperfect ossifications, or separated from them altogether; the masseteric ridge extending high before the orbit; the auditory bullæ very small; the basioccipital bone broad, with moderately developed eminences; the middle incisors slightly expanded at their summits; the molars without supplemental lobes.”

Hab. Asia.


Nemorhedus, sp., H. Smith; Turner, P. Z. S. 1848.
Oryx, sp., Rüppell, Verz. i. 80.


Black. Chin and linear nuchal mane yellowish, especially near the withers. Inside of the ears white. Young like adult.

Antilope Sumatrensis, Shaw, Zool. ii. 354; Desm. Mam. 465; Fischer, Syn. 470, 639; Raffles, Linn. Trans. xiii. 266; F. Cuv. Mam. Lith. t.


Cambing Outan, Marsd. Sumatr. 93. t.

Nemorhedus Sumatrensis, Gray, List Mamm. B. M. 166; Turner, P. Z. S. 1848.

Sumatran Antelope, Penn. Quad. ii. 321.
Oryx Sumatrensis, Rüppell, Verz. Senck. i. 80.


OSTEEOLOGY.

?Frontal bone, with horns.
2. Capricornis Bubalina. The Thaar or Thar.

Grey brown, blackish washed. Crown and dorsal streak black. Thighs and outside of legs rufous. Nose, chin, inside of ears, lower part of mane, and legs below the hocks, whitish.


Kemas Thar, Hodgson.


Næmorhædus Bubalina, Turner, P. Z. S. 1848.

Hab. India; Nepal.

Male and female. Nepal.


Osteology.


Horns. Nepal. Mr. Argent's Collection.

Icon.


A head was sent to the United Service Museum by Lieut.-Colonel Childers, of the 11th Dragoons, in 1820, under the name of Serow or Imo. “It is not speedy, as might be inferred from its make. Its flesh is very coarse and bad. It is usually killed with poisoned arrows.”—Hodgson, l. c. 14.
The *Thar* or *Suraw* inhabits the sub-Himalaya as far north as the forest extends. They are not gregarious, and they rush with fearful precipitancy down the steep mountain. They rut in February or March, gestate eight months, and have one young in September or October. They always have a gall-bladder.—Hodgson, *Journ. Asiat. Soc.* 1835, Sept.

The Gorals and Thars differ from the Antelope in being stout, clambering animals, but they are not, as some have supposed, allied to the Bovines.—Hodgson.

3. **Capricornis? crispa.** The **Japanese Goat Antelope.**

Fur harsh, crisp, brown or brownish. Sides whitish. Cheeks white. Legs black brown.


**Osteology.** Temm. *Fauna Japon.* t.

b. **Nose ovine, without any muffle.** Horns short, conical, recurved, ringed.

25. **Nemorhedus.**


*Damalis*, sp., *J. Brookes, Cat. Mus.* 64, 1828.

Mr. Turner observes, “Although the ‘tear-bag’ is said to be wanting in the *Goral*, there is certainly a slight depression upon the lacrymal bone, and the pore with which the gland opens may be so small in this species as to escape detection in dried specimens.”—Turner.

1. **Nemorhedus Goral.** The **Goral.**

MAMMALIA.

Bouquetin de Nepaul, *F. Cuvier, Mam. Lith.* t., copy of Hardwicke.

Damalis Hardwickii, *J. Brookes, Cat. Mus.* 64, 1828.

Hab. India; Sub-Himalayas.

Young, half-grown. Nepal.

Osteology.
Horns (of female?), very thin, far apart at the base.
Two skulls of males. India. Presented by B. H. Hodgson, Esq.

Icon.
Drawing of male, female and young.—*Hodgson, Icon. ined. B. M.* t. 157; male copied t. 160. f. 2. Presented by B. H. Hodgson, Esq.
The Goral inhabits the Sub-Himalayas as far towards the snows as the great forest extends, to which exclusively they adhere, living in families of four or six. Breeding amid the crags and rocky recesses: rutting in January; gestate six months: the young born in May or June.

Note.—Antilope Nemorhædus Duvaucellii, H. Smith, G. A. K. iv. 277, v. 861; Antilope Sumatrensis β? Duvaucellii, Fischer, Syn. 639—was described from a drawing sent to Paris by M. Duvaucel without any notes, as were most of his drawings. It is only a badly coloured tracing of a drawing of the Goral in General Hardwicke’s Collection. It has no connection with C. Sumatrensis, to which many naturalists have referred it.

In the Bengal Journal, two Antelopes, said to resemble the Goral, are mentioned as found in Affghanistan, one called Suja and the other Goomast.

26. Mazama.

Horns small, conical, round, nearly erect, slightly inclined backwards, and recurved at the tip, ringed at the base. Nose ovine, hairy. Muffle none. Tear-bag none. Fur double; outer very long, hairy, dependent; under fur short, woolly.


Antilocapra, sp., Lesson.

1. Mazama Americana. The Mazame or Spring-buck.

White. Horns and edge of the nostrils black.


Capra montana, Harlan, Fauna Amer.

Capra lanigera aut Americana, Ogilby, P. Z. S. 1836, 137.


Antilocapra montana, Lesson, Nov. Tab. R. A. 182.


Antilope lanata (Mountain Sheep Antelope), Bennett, Cat. Mam. Zool. Soc. 1828, 14 fig., & 1829, 18 fig.
Antilope Americana, Desm. Mam. 478.

Antilope Aplocerus lanigera, H. Smith, Linn. Trans. xiii. 38. t. 4; G. A. K. v. 865.

Mazama dorsata, Rafinesque.

Mazama sericea, Rafinesque.

Antilope (Aplocerus) Mazama, H. Smith, Linn. Trans. xiii. 33; Griffith, A. K. v. 865; Fischer, Syn. 482. 647.

Aplocerus Americanus, Turner, P. Z. S. 1850.

Mazama seu Cervus cornutus, Seba, Thes. i. 69. t. 42. f. 3.

Rocky Mountain Sheep, Jameson, Wern. Mem. iii. 306.


27. Rupicapra.

Horns elongate, slender, round, nearly erect from above the orbit, suddenly hooked backward at the tip. Nose ovine, hairy. Muzzle none. Fur soft. Skull with "a minute suborbital fissure, but no fossa; the masseteric ridge ascending high before the orbit; the auditory bulla very small and compressed; the basioccipital bone flat; the incisors equal-sized, vertical; the molars without supplemental lobes."—Turner.

Antilope, Pallas, Misc. 4; Spic. 7. 17.

A. Rupicapra, Erxleb. S. A. 268, 1777; Desm. 1804; Illiger, 1811.


Rupicapradæ, J. Brookes, Cat. Mus. 64, 1828.

1. Rupicapra Tragus. The Chamoise or Gems.

Yellowish brown, with a dark dorsal streak; in winter blackish.

Antilope Rupicapra, Pallas, Misc. 4; Spic. i. 7, xii. 12; Gmelin, S. N. i. 182.


A. Rupicapra Rupicapra, Blainv. B. S. Phil. 1816, 76.


Rupicapra (hæmolicorns), J. Brookes, Cat. Mus. 64, 1828.
Capra Rupicapra, Linn. S. N. i. 95.


Rupicapra, Plinii H. N. viii. 53; Gesner, Quad. 321. fig. 329.

Rupicapra Tragus, Turner, P. Z. S. 1850.

Rupicapra capella, Bonap. Fauna Ital.

Tragus seu Dorcas, Klein, Quad. 17.

'Ατέργιας, Oppian, Cyneg. ii. 338.

Chamois, Perrault, Anim. i. 201. t. 29; Buffon, H. N. xii. 136, 177. t. 16; Penn. Syn. 17; Quad. i. 72; Shaw, Zool. ii. 361. t. 187.

Gems, Riding Jagdh. Th. t. 12; Kleine, Th. t. 72; Wilde, Thier. t. 25; Meyer, Thier. i. t. 66; Lewenwald. Damegraph. 1793; Allisser. v. Salins Marschlin Hopfn. Mag. i. 111.

Hab. South Europe; Switzerland; Pyrenees and Pindarus.

In summer coat, yellowish. Alps, Europe.

In change (nose imperfect). Alps, Europe.

In winter coat, blackish. Alps, Europe.


Osteology.

Chamoise, Daub. in Buffon Hist. Nat. xii. t. 17.


Three horns. Alps.


Skeleton. Alps. From Mr. Brandt’s Collection.


I have compared specimens from Switzerland, the Pyrenees and Mont Pilatus, and cannot discover any difference between them.

28. Antilocapra.

Horns erect, arising directly over the orbit, compressed at the base, with a flattened process in front, and ending in a conical recurved tip. Nose ovine, hairy. Muffle none. Tear-bag none. Fur very close. Hair stiff, coarse, flattened, wavy. Tail very short. False hoofs none. Inguinal pores none. Legs rather slenderer than the other Goat Antelopes. Female horned. Skull with "no suborbital depression; the fissure lengthened; the nasal bones widest posteriorly; the orbit a little elevated above the line of the face, and the masseteric ridge not rising before
it; the auditory bulla moderate, compressed and angular; the incisors equal-sized, sloping; the molars without supplemental lobes.”—Turner.

Dicranocerus, H. Smith, Griffith A. K. v. 182; Fischer, Syn. 623; Turner, P. Z. S. 1850.


Antilopecapra, J. Brookes, Cat. Mus. 64, 1828.

Oreamnos, Rafin.

Mazama, Ogilby, P. Z. S. 1836, 137.

Cervus, sp., Blainville.

Antilopecapradæ or falcicornis, J. Brookes, Cat. Mus. 64, 1828.

1. Antilocapra Americana. The Cabrit or Prong-horn.

Pale brown; beneath and caudal disk white.

Antilope (Dicranocerus) furcifer, H. Smith, Linn. Trans. xiii. 28. t. 2; Griffith, A. K. iv. 170 t., 352 t., v. 808.

A. rupicapra furcifer, Desm. Mamm. 479; Fischer, Syn. 481. 646.

Antilocapra furcifer, Richardson, Fauna Bor. Amer. t. 21; Gray, List Mamm. B. M. 170.

Cervus bifurcatus, Rafinesque.

Antilope (Dicranocerus) palmata, H. Smith, Linn. Trans. xiii. 31. t. 3, horns; Griffith A. K. iv. 352 t., v. 809; Desm. Mamm. 479; Fischer, Syn. 481. 647; Coulter, P. Z. S. 1826, 121.

Antilopecapra furcifer, J. Brookes, Cat. Mus. 64, 1828.


Mazama furcifer, Ogilby, P. Z. S. 1836, 137.

Prong-horned Antelope, Lewis & Clark, Travels.

Springbock, Anglo-Americans.

Cabrit, Canadian Hunters.

Kistu-he, N. Amer. Indians.

Hab. N. America; in the plains in summer, and in the mountains in winter. Called the Goat. Mexico (Coulter).

A fawn, just born. N. America. Presented by Sir John Richardson, M.D.

Male and female. Rocky Mountains. Presented by the Hudson’s Bay Company.

Male, adult, and young. Rocky Mountains.
Antilope furcifer, H. Smith, Linn. Trans. xiii. t. 2.
A. palmata, H. Smith, Linn. Trans. xiii. t. 3, horns only.

*Skull, female. Hudson’s Bay. Presented by the Hudson’s Bay Company.

Dr. Coulter brought a head from Mexico which had the face dark brown, and the horns large, wide-spreading and much hooked at the tip, like the A. palmata of H. Smith (Proc. Zool. Soc. 1826, 121). This is probably only a larger variety in the summer fur.

II. The Antelopes of the Desert. Nose broad; nostrils subvalvular, and lined with bristles within.


Damalidæ, J. Brookes, Cat. Mus. 64, 1828.

I am not aware that this division was ever hinted at until published in the Ann. & Mag. N. H. for 1846. Mr. Turner observes: “I will now proceed to the ‘Antelopes of the Desert’ of Mr. Gray, a very well-marked natural group, consisting of two distinct genera, which have usually been widely separated. Mr. Blyth, however, in the translation of Cuvier’s Animal Kingdom, hints at their affinity, and Mr. Waterhouse informs me that he has long held that opinion. Indeed he has placed the species next each other in the Catalogue of the Society’s Museum.” And again: “A. pygargus has usually been placed among the Gazelles, where it was left by Mr. Blyth, who speaks of it as leading ‘through A. Caama, Bubalis, &c. to the Gnu.’ Mr. Waterhouse, who in the Catalogue of the Society’s Museum uses the generic name Antelope throughout, places this species between the Gazelles and the others of its natural genus, to which the Gnu follows. Mr. Gray, who had left it with the Gazelles in the List of Mammalia in the British Museum, has removed it to its true place in his paper in the Annals and Magazine of Natural History.”

The reference to the Catalogue of the Zoological Society’s Museum does not justify these observations. In the edition for 1839 I find the species placed in the middle of the genus Antelope, intermixed with other subgenera, thus: 272. A. Duma; 273. A. Pygarga; 274. A. Caama; 275. A. Gnu; 276. A. Oryx; 277. A. leucoryx; 278. A. Sing-Sing (p. 41).

The only observation I can find in Blyth respecting the subject is as follows: “A. pygargus, which seems to tend through
A. Caama and bubalus, &c., to the Gnus” (p. 139); but in neither is there the slightest idea of the character which unites them together as a natural group.

A. Equine Antelopes. Muzzle broad, depressed, spongy, bristly; nostrils large, covered with a large spongy valve.


Catoblepas et Damalis (et acronotus), H. Smith, G. A. K.

Damalidæ, part., J. Brookes, Cat. Mus. 64.

29. Connochetes.

Horns bent down and outwards on the sides, broad at the base, bent up at the tip. Nose broad, dilated, spongy, bristly. Nostrils large, operculated. Tail elongate, bushy, hairy from the base. Hoofs compressed in front. Intermaxillaries elongate, extending to the nasal, the front half expanded and flattened, the front part much dilated, flattened and sharp edged. Nose-hole rather large. Frontal bone much produced behind. Females: teats 4. Skull: “the general characters the same as in Alcelaphus; but the depression before the orbit less marked; the occiput rather less prolonged, and its base, together with the auditory bulla, broader.”—Turner.

Hab. S. Africa.


Catablepas, J. Brookes, Cat. Mus. 64.


Bos, sp., Forster MSS.

This genus, which has all the characters of the true Antelopes, in the slenderness and proportion of the leg-bones, has been placed with the Oxen by Forster, and in the Bovine section by Professor Sundevall. Lichtenstein’s name has undoubted priority of publication.


1. Connochetes Gnu. The Gnu or Kokoon.

Nose with a tuft of reversed hair. Chest maned. Brown or
blackish; the lower part of the mane and tail often paler or whitish. Young pale fulvous. Nasal, gular and nuchal mane black.

Antilope Gnou, Zimmerm. Geog. Gesch. ii. 102; Gmelin, S. N. i. 189.
A. Connochætes Gnu, Licht. Berl. Mag. vi. 165; Reise, ii. 66; Schreb. Saugth. 1165. t. 280; Cuvier, Dict. S. N. ii. 247. t.; Harris, W. A. Anim. t. 1, and heads; Burchell, Trav. i. 24, 431, 432, ii. 278; Desm. Mam. 472.
A. Boselaphus Gnu, Blainv. B. S. Phil. 1816, 75; Fischer, Syn. 475, 642.
A. Capensis, Gatterer, Brev. Zool. i. 80.
Catablepas operculatus, J. Brookes, Cat. Mus. 64.
Bos Connochætes, Forster, MSS. 66.
Antilope Boselaphus Taurina, Fischer, Syn. 476.
Antilope Taurina, Burch. Travels, ii. 277. fig.
Antilope Gnu var. grisea, Goldfuss.
Katoblepas, Ælian, Anim. vii. 5; Plinii H. N. viii. 39.
T'Gnu, Hottentots, Sparrm. K. Svensk. V. Hand. 1779, 76. t. 3.
Gnou or Niou, Buffon, H. N. Supp. vi. 39. t. 8; Cuvier, R. A. i. 264; Daniel, African Scenery, t. 3.
Boschbuffell, Vosmaer, Besch. 1784, t.
Gnou Antelope, Penn. Quad. i. 70; Shaw, Zool. i. 319; Barrow, Travels; Burchell, Trav.
Wildebeest, Dutch at Cape.
Hab. S. Africa.

S. Africa. Presented by William Burchell, Esq., LL.D.
Half-grown. S. Africa.
Young? S. Africa.
Young. South Africa. From the South African Museum.
Young. S. Africa.
Three parts grown. S. Africa.

Osteology.
Skull, with horns. S. Africa. From Mr. Argent's Collection.
Skeleton. S. Africa. From the Zoological Society’s Collection. Skull, with horns. S. Africa.

ICON.

Drawing of the head in colours by Rymsdyk, 1775.—Bank. Icon. ined. B. M. t. 56.

Bos Connocætus.—G. Forster, Icon. ined. B. M. i. t. 19, 19 a, 20–28.

The Antilope Gnu of Burchell, H. Smith, F. Cuvier and Harris, “and the Kokong of Lichtenstein,” has a white tail and mane. Burchell and H. Smith have given the name of A. taurina to the specimens which have those parts black. When young they are fulvous, and become black as they reach maturity. The specimens of the Kokoon in the Museum of the London Missionary Society (Blomfield Street, Moorfieds), named by Colonel H. Smith Kokoon (Cat. taurina, Griff. A. K. iv. 369, v. 368), is an adult common Gnu, C. Gnu (Var. mane and tail white; Kokong, Licht. Trav. Cape), and his description of Dr. Burchell’s specimens in the British Museum agrees with the Gnu in having the ridge of hair on the face. Indeed, Dr. Burchell (Travels, ii. 278) appears to consider the difference between the Gnu and A. taurina, that the former has a white and the latter a black tail. Dr. Andrew Smith (Illust. Zool. S. A.) has regarded the C. taurina and C. Gorgon as the same species. Dr. Sundevall, in his Synopsis, has, by mistake, given the name of C. taurina to the Gorgon, or Brindled Gnu (C. Gorgon, H. Smith).


2. CONNOCHETES GORGON. The GORGON or BRINDLED GNU.

Face convex, smooth, covered with hair lying towards the nose. Chest not maned. Black, varied and striped with grey. Half-grown blackish; crown grey. Young dark grey; face, gular and nuchal mane, and end of tail, black.


Antilope Boselaphi Gorgon, Fischer, Syn. 643.

Antilope Gnu var., Smut, Mam. Cap. 94.

Gorgon fasciatus, Gray, Knowsley Menag. t.

Bastard Wilde Beest, Dutch at Cape.

Kokoon or Brindled Gnoo, Harris, S. Africa, t. 4, and head.

Catoblepas Taurina, Sundevall, Pecora; not Burchell nor H. Smith.

Hab. S. Africa; Cape of Good Hope.

Male. From the South African Museum.
Female. S. Africa.
Young. S. Africa. From the S. African Museum.
Half-grown. S. Africa.

Osteology.
Skull. S. Africa.

The Brindled Gnu lives to the north of the Black River or Nugariep, and though herds feed almost on its banks, yet it is not known to cross it. It occurs in large herds on the plains north of the Orange River, and when alarmed each herd decamps in long regular files. The flesh is much sought after. The Bechuana use the skins for their cloaks or mantles.—And. Smith.

Note.—Catoblepas Brooksii, H. Smith, G. A. K. iv. 366. t. f., from horn only, is a very doubtful species.

E. The Bovine Antelopes. Nose moderately broad, with a moderate or small, bald, moist muzzle. Horn high on the frontal ridge. Grinders rather small, without supplemental lobes. The central cutting-teeth enlarged at the end. Skull with "a large deep impression before the orbit, but no fissure; the masseteric ridge not extending high; the bones of the face lengthened downwards and forwards, and the occiput also prolonged and drawn downwards; the process upon the alisphenoid bone, which terminates the pterygoid ridge, prolonged and ensiform; the auditory bulla large and prominent, enclosing a large rounded space for the attachment of the stylohyal bone; the basioccipital tubercles high and sharp, the groove between them narrow in front, wide behind, with a flat space between the occipital condyles; the median incisors expanded at their summits; the molars rather small, narrow, and without supplemental lobes, showing, when somewhat worn, a pit in the middle."—Turner.

Alcelaphus, Turner, P. Z. S. 1850.
Damalidae, part., J. Brookes, Cat. Mus. 64.

31. Alcelaphus.

Horns lyrate, on the upper edge of the rather produced frontal bones, thick at the base, end suddenly curved at a nearly right angle. Nose moderately broad, cervine. Muzzle moderate, bald, moist. Crumen covered with a tuft of hair. Female: teats 2.

Acronotus, sp., H. Smith, Griffith A. K. v. 182; Fischer, Syn. 625.
Buselaphus, Raff Syl.

1. Alcelaphus Bubalis. The Bubale.

Pale brown, nearly uniform. Rump like back.

Antilope Bubalis (part.), Pallas, Misc. 7; Spic. Z. xii. 16 (not syn.).


A. Bubalides Bubalis, Licht. Berl. Mag. vii. 163; Burchell, Trav. i. 420, ii. 82, 334.


Damalis bubalis, J. Brookes, Cat. Mus. 64.

Bubalis Mauritanicus, Ogilby, P. Z. S. 1836, 139.

Alcelaphus Bubalis, Turner, P. Z. Soc. 1848.

Bubale, Oppian, Cyneget. ii. 300.


Buselaphus Cagii, Raff Quad. 81.


Acronotus Bubalis, Gray, List Mamm. B. M. 157; Cat. Osteol. B. M. 58.


Bekker el Wash, Yachmur bilicus, Shaw, Reise, 151, 358.

Bubale, Buffon, H. N. xii. 294. t. 37. t. 38. f. 1; Supp. vi. 133. t. 14; Cuvier, Menag. Mus. t.


Cervine Antelope, Penn. Syn. 37; Quad. i. 102; Shaw, Zool. ii. 331. t. 184.


Young. N. Africa. From Mr. Fraser’s Collection.

Osteology.

Bubale, Daub. in Buffon H. N. xii. t. 37, t. 38. f. 1, 2.

Skull and horns, one deformed. North Africa?

Frontal bone and horns. North Africa?

Var. 1.? Tunisianus. Uniform pale brown; with a dark brown streak down the outer side of the front of the fore-legs, like...
the streak on the leg of the Lecama or Harte beest from South Africa, which is not generally found in this species.


Hab. Tunis.

A skin, without a head or hoofs, brought by Mr. Fraser from Tunis; it probably indicates a third species, or perhaps the dark streak is only marked in the very adult or fully-coloured specimens.

2. Alcelaphus Caama. The Lecama or Harte beest.

Grey brown. Dorsal line, streak on face, outer side of limbs, black. Large triangular spot on the haunches whitish.

A. (Alcelaphus) Caama, Blainv. B. S. Phil. 1816, 75; Desm. Mam. 467; Fischer, Syn. 474, 841; Burchell, Trav. i. 420.
Antilope (Bubalides) Bubalis (part.), Licht. Berl. Mag. vi. 163; Schreb. t. 277.
Acronotus Caama, Gray, List Mamm. B. M. 157; Cat. Osteol. B. M. 58.

Damalis aaronotus Caama, H. Smith, G.A.K. iv.338.t.197,y.877.
Bubale, Buffon, H. N. xii. t. 38. f. 2; Suppl. vi. 135. t. 15.
Harte beesten eller Dorcas, Sparrm. in K. V. Handl. 1779, 151. t. 5, bad.

Caama, Cuvier, Menag. Mus. t.; Règ. Anim. i. 261; Pallas, Misc. 7; Spicil. i. 12 (not syn.).
Antilope Koba, Erxleb. Syn. 293, from Pennant.
?Senegal Antelope, Penn. Quad. i. 103. t. 50. vig. 40, head.
Harte beest, Dutch at Cape.

Kaama, Hottentots.
Licama, Caffers.
Hab. South Africa.

(Not in good state.) S. Africa. Part of Sir Hans Sloane's Museum.

Male. S. Africa. From the South African Museum.
Adult male. S. Africa. Presented by the Earl of Derby.
Male, young. S. Africa.

Osteology.
Frontal bone and horns. South Africa.
Frontal bone and horns, wide apart, very rough. South Africa.
Horns, with the head stuffed. South Africa.
Frontal bone, with the skin on. South Africa.
Horns. South Africa.
Two pair of horns. S. Africa. Mr. Warwick’s Collection.
Skull, without lower jaw. S. Africa.
Nine pair of horns. S. Africa. From Mr. Argent’s Collection.

ICON.
Antilope Bubalis, Hardw. Icon. ined. B. M. n. 10,975. t. 164, 165.

Pennant figures the head and horns of this species under the name of Senegal Antelope, and erroneously refers to Buffon’s figures of the horns of the Koba as representing the species, which has occasioned some confusion; for the A. Senegalensis (Cuvier, Dict. Sci. Nat. ii. 235) is an abbreviation, and A. Koba (Erxleben, Syn. 293) is a translation, of Pennant’s description of this species. Pennant’s specimen is said to come from Senegal, but he describes the nuchal line and the knees as black, and the figure indicates the dark colour on the face of the Cape species.

The Hartebeest has an extensive range; it is found everywhere in the flat and wooded districts between the Cape of Good Hope and the Tropic of Capricorn. Its movements are ungraceful, and give a notion of great exertion, but when urged by danger it shows no want of either agility or endurance. The flesh is esteemed.—A. Smith.

32. DAMALIS, H. Smith.

Horns lyrate, diverging, subcylindrical. Nose moderately broad, cervine, with a small bald moist muffle between and below the nostrils; an exposed tear-bag. Female: two teats.

Damalis acronotus, sp. (Koba), H. Smith, Griffith A. K. v. 182.
Damalis, Gray, Ann. & Mag. N. H. 1846, 233; Knowsley Menag.;
Alcelaphus, sp., Fischer, Syn.; Turner, P. Z. S. 1850.
Bubalis, sp., Sundevall, Pecora, 83.
Gazella, sp. (pygarga), Blainv. B. S. Phil. 1816; H. Smith, G. A. K. v.; Fischer, Syn. 642.

* Horns recurved above, diverging from the base. Face dark in front.

1. DAMALIS LUNATUS. The Sassayby.

Rufous, glaucous. Outer side of limbs dark.
Antilope lunata, Burchell, Trav. ii. 334, 591. fig.
A. Alcelaphus lunata, Fischer, Syn. 642.
Alcelaphus lunatus, Turner, P. Z. S. 1848.
Bubalis lunata, Sundevall, Pecora, 83.
Hab. S. Africa.

Female. S. Africa. From the South African Museum.
Male. S. Africa.

Osteology. Burchell, Trav. ii. 591. fig.
Horns and skin of legs. South Africa. Presented by W. Burchell, Esq., LL.D.
Horns. S. Africa. From Mr. Warwick’s Collection.
Two pair of horns. S. Africa. From Mr. Argent’s Collection.

The Bastard Hartebeest inhabits between Latikoo and the Tropic of Capricorn. It lives in herds of six or ten in the flat or wooded districts. Its flesh is esteemed. Where not disturbed it is confiding and curious, but where hunted it becomes vigilant and shy.—A. Smith.

**Horns regularly lyrate, nearly parallel at the base, and then diverging and approaching at the tips. Face black marked. Crumen moderate.

2. Damalis Senegalensis. The Korrigum.

Reddish grey. Front of face from nose to occiput, a small spot behind the eyes, a small streak above the angle of the mouth, and streak on outside of the limbs above the knees, and tuft of the tail, black. Very young: uniform pale brown, without any dark marks.

Damalis (Acronotus) Senegalensis, H. Smith, Griffith A. K. v. t. 199. f. 3.
Antilope Koba, Children in Denham & Clapperton’s Travels (not Erxleben).
Bubalis Koba, Sundevall, Pecora, 83.
Damalis Korrigum, Gray, List Mamm. B. M. 158.
Antilope Corrigum, Ogilby, P. Z. Soc. 1836, 103; Gray, List Mamm. B. M. 158.

*Alcelaphus Senegalensis*, *Turner, P. Z. S. 1848.*

_Hab._ West Africa; Gambia River, Macarthy's Island, Mr. Whitfield, called _Yonga_; Senegal; Senaar. Mus. Stockholm.


**Osteology.**


Mr. Whitfield informs me this species is found on Macarthy's Island, on the Gambia; they afford very good venison; are called _Yonga_ or _Yongah_ by the Ioliffs, and _Tan Rong_ by the Mandingoes.

In *Denham & Clapperton's Travels* I regarded this species as the _Koba_ of Buffon, and Colonel H. Smith and Dr. Sundevall are of the same opinion: but on comparing the six pairs of horns of this species which I have been able to examine with Buffon's figure and descriptions, I find them all longer and much thicker at the base than Buffon describes them; the thinner specimen (a female?) being 7 and the others 9 or 9½ inches in circumference, while that Buffon described is only 5 inches. The rings are also more elevated, and reach nearer to the top than in Buffon's figure. All the characters lead me to believe that the horns figured as those of the _Koba_ by Buffon belong to *Damalis Pygarga*.

Colonel Hamilton Smith, in Griffith's _Animal Kingdom_, described and figured the heads brought home by Messrs. Denham and Clapperton as *Antilope Senegalensis*, but they are different from the one so called by Cuvier. Mr. Ogilby, in the _Proceedings of the Zoological Society_ (1826, 103), proposed to call these heads _A. Corrigum_.

Under the name of *Antilope Koba*, Schinz (_Syn. Mam. ii. 407_) combines the _A. defassa_, Rüppell, *Damalis Senegalensis* and *Antilope adenota*, H. Smith, the _Koba_ of Buffon, and the _Antilope Koba_ or _Caama_ of Erxleben.

***Horns regularly lyrate, parallel at the base. Face of the adult white.***

3. *Damalis Pygarga*. The _Nunni_ or _Bonte boc_.

Purple red. Outer side of the limbs darker. Streak between horns, face, and rump above the tail, white. Temple and upper
part of throat whitish. Legs whitish, upper and lower part brown varied. Female: throat and under part of body white. Fawn pale yellowish brown.


A. Gazella Pygarga, Blainv. B. S. Phil. 1816, 75; H. Smith, G. A. K. v. 820; Fischer, Syn. 461, 629.

Alcelaphus Pygargus, Turner, P. Z. S. 1848.
Antilope pygargus, Pallas, Spic. i. 10.
Bubalis pygarga, Sundevall, Pecora.
Antilope Dorcas, Pallas, Misc. 6—not Spicil. i. 11.


White-faced Antelope, Penn. Quad. i. 93; Shaw, Zool. ii. 352.
Bonte bok or Pied Antelope, Harris, W. A. Africa, t. 17.
Antilope personata (Bonte bok), H. Woods, Zool. Journ. iv. 524, v. 2. t. 1, young, not arrived at its colour; P. Z. S. iii. 45.

Nunni, Bushmen.

Hab. S. Africa.

Horns, long and slender. Mr. Warwick’s Collection.

Osteology.

Koba, Daub. in Buffon H. N. xii. 268. t. 32. f. 2.
Skull. Cape of Good Hope. Presented by William Burchell, Esq., LL.D.

Horns. South Africa.

Two pair of horns. S. Africa. From Mr. Warwick’s Collection.

Horns, ten pair. S. Africa.

Male.

Male and female. S. Africa. From Dr. Smut’s Collection.

Young, pale brown. S. Africa.

Very young. S. Africa. From M. Verreaux’s Collection.

Male, adult. S. Africa.

These animals are often brought to the Cape market for food. The names Kob and Koba appear to be generic among the negroes for Antelopes. Colonel Smith, Professor Sundevall, and Mr. Children in Clapperton’s Travels, have considered the horns figured by Buffon under the name of Koba the same as Damalis Senegalensis of this work. The comparison of six pairs of horns of that animal with Buffon’s figure and description has led me to doubt the identification. I believe they are the horns of the
MAMMALIA.

Bontebok, *D. Pygarga*; if so, all the following names which have been given to these horns must be regarded as synonyma of this species.


Damalis Koba, *J. Brookes, Cat. Mus.* 64, 1828.


A. Gazella Koba, *Blainv. B. S. Phil.* 1816, 75.


4. Damalis albifrons. The Bless bock.

Purple red. Front of face, spot between horns and on temples, the hinder edge of rump below the tail, white. Throat, stripe down the outer side of front of legs, brown.

Antilope albifrons (Bless bok), *Burchell, Travels,* ii. 335?; *Harris, W. Anim. Africa,* t. 21, and head.

Bubalis albifrons, *Sundevall, Pecora.*


Hab. South Africa.

Dr. Burchell, when speaking of the Bless bock, proposed to call it *A. albifrons*, as the name *Pygarga* has been used for both the Springer and the Bless bock; but it is not certain if he intended by Bless bock this or the preceding species. Captain Harris’s figure shows the distinction of the two species, and he applies Dr. Burchell’s name to the one now described.

A half-grown specimen of this species, when compared with a similar-sized specimen of *D. Pygarga* in the same paddock, was darker, with a pale spot between the horns, separated by a dark spot from the white on the face; the temple was white, with a white spot; the legs had a brown stripe down the outer side of the front; and the throat and rump brown, the latter without any white spot.

**** Horns unknown.


Bright golden brown, with several black cross-bands narrowing at the end. Outside of the fore- and hind-legs dark brown.

F 5
Antilope, n. s., Bennett, P. Z. S. 1832, 122.
(not described); Frazer, Zool. Typica, t.
Antilope Zebrata, Robert, Echo du Monde Savante, 1836; Ger-
Damalis? Zebra, Gray, Knowsley Menag.
Canis or Viverra Zebra, Whitfield, MSS.
Hab. W. Africa.

Flat skin, without limbs. Sierra Leone.

Skins without head and feet are alone known; they are brought
down the river by the negroes. In the Catalogue of the Mam-
malia in the British Museum, I have referred this species with
doubt to Cephalophus. Mr. Ogilby (P. Z. S. 1836, 121) thinks
it should be referred with the Harness Antelopes to Calliope. I
am inclined, on account of the dark mark on the outside of the
limb, to think it belongs to the genus Damalis. Mr. Whitfield
believes it, on the authority of the negroes, to be a species of
Viverra.

The specific name is supposed to be commemorative of Mrs.

Fig. 1.

Skull of Eleotragus arundinacea. Female (see p. 92).
Ogilby, whose christian name was Doria. In the Catalogue of the Zoological Society it is called the Gilded Antelope.

Section 2. Horns subangular, with a more or less distinct ridge on the front angle. Knee in the middle of the fore-leg—Angulicornia.


Antilope, § C. spiralibus, Gray in J. Brookes, Cat. Mus. 63, 1828.


Strepsiceros et Portax, Turner, P. Z. S. 1850.


Bos, part., Wagler, N. Syst. Amph. 32, 1830.

The animals of this subtribe are peculiar as being the only hollow-horned or Bovine Ruminants which are marked with white stripes and spots. The bands are not very distinct in the Impoofo or Eland, but they are easily to be observed in the female, if it is looked at obliquely, which was brought home by Burke, and presented to the British Museum by the Earl of Derby. The skull, which somewhat resembles that of the Deer, has a rather small nasal opening, no suborbital pit, and only a small suborbital fissure.

Colonel H. Smith forms of the larger species three of his four subgenera of Damalis: he places the smaller kinds as a subgenus (Tragelaphus) of Antelopes.

Prof. Sundevall placed the genera here brought together in two different families; the genus Portax with the Bovina, and the others in the Sylvicaprina, or True Antelopes.

M. Agassiz has observed, that the horns of the Strepsiceres and the Sheep are twisted in the contrary direction. Mr. Ogilby has justly observed, that the right horn of the Strepsiceres is twisted in the same direction as the left horn of the Sheep, and vice versa. — Trans. Zool. Soc. iii. 57.
Synopsis of Genera of Strepsiceræ.

   2. Oreas. Horns straight, with a spiral keel.


II. Hinder legs short. Asiatic.


I. The African Genera have large heavy horns, only the rudiment of a tear-bag, and the limbs nearly equal. Skull with "the nasal opening of moderate size; a suborbital fissure, but no fossa; the masseteric ridge not extending high; the auditory bulla swollen and prominent; the basioccipital bone with its anterior and posterior pairs of tubercles well developed, the former separated by a deep median groove; the median incisors expanded at their summits; the molars without supplemental lobes." — Turner.

Strepsiceros, Turner, P. Z. S. 1850.
Antilope et Damalis, part., H. Smith.
Sylvicaprina, Sundevall, Pecora.


I. Strepsiceros.

Horns large, heavy, spirally twisted, with a distinct, raised, rounded keel in front. Tear-bag a naked space. Throat with a central linear mane. Females hornless. (Skull, t. 17. f. 1, 2.)

Risia, Laurill.
Calliope, sp., Ogilby.
1. Strepsiceros Kudu. The Eechlongole or Koodoo. (t. 17. f. 1, 2.)

Grey, white striped. Face with a broad, white, lunate cross band.

Antilope Strepsiceros, Pallas, Misc. 9; Spic. i. 17, xii. 19; Gmelin, S. N. i. 192.


A. (Tragelaphus) Strepsiceros, Blainv. B. S. Phil. 1816, 75; Desm. Mam. 468; Fischer, Syn. 472. 640.

Strepsiceros Capensis or Koodoo, Harris, W. A. Africa, t. 20, and head.

Damalis (Strepsiceros) Strepsiceros, H. Smith, G. A. K. v. 883.


Strepsiceros excelsus, Sundevall, Pecora, 71.

Bos Strepsiceros, Aldrov. Bisule. 368. fig. 369.


Strepsiceros kudu, Gray, Cat. Mam. B. M. 155; Osteol. B. M. 59.

Condoma, Buffon, H. N. xii. 301. t. 39. f. 1, 2 (cop. E. M. t. 56. f. 2); Supp. vi. t. 13.

Coudu, Vosmaer, Besch. 1783, t.

Cerf du Cap de Bonne Esperance, Colini, Comm. Palat. i. 487. t. Afrikanischer Kutu, Knorr, Déléc. iii. t. K.

Striped Antelope, Penn. Syn. 31. Quad. i. 88. t. 14; Shaw, Zool. ii. 324. t. 185; Daniel, African Scenery, t.


In bad state. Cape of Good Hope. Presented by the College of Surgeons.


OSTEOLGY. Skull, t. 17. f. 1, 2.


Three pairs of horns. South Africa.

Frontal bone and horns. South Africa.

Two skulls and horns. South Africa.

Head and horns. Presented by the Trustees of the Hunterian Collection.

Single horn of young. South Africa.

*Skull, female. S. Africa.

Skull, with horns, male. S. Africa. From Mr. Argent’s Collection.
134

MAMMALIA.

Var. 1. Smaller.—Mus. Ind. Comp. Lond. and Frankfort.
Antilope Tendall, Rüppell, Abyssinia, 22; Fischer, Syn. 475.
Antilope chora, Rüppell, Abyssinia, 22; Fischer, Syn. 475.
Hab. Abyssinia.

Var. 2. Lighter and smaller.
Hab. Banks of River Zonga, Osowell.

2. OREAS.

Horns large, straight or slightly curved, bent back from the forehead, with a strong, raised, rounded spiral keel. Throat with a longitudinal crested dewlap. Crumen ——. Females with smaller, thinner, less keeled horns. Skull, t. 17. f. 3, 4.

Oreas (Oreades), Desm. Mam. 471; Lesson, N. Tab. R. A. 181.
Boselaphus, sp., Blainv. Bull. S. Phil. 1816; Desm. Mam.
Damalis (Boselaphus), H. Smith, Griffith A. K. v. 182.
Damalis, Sundevall, Pecora, 74.

1. Oreas Canna. The Impoofo or Eland.

Pale brown, nearly uniform, with very indistinct, narrow white stripes on the sides.

Antilope orcas, Pallas, Spic. Z. xii. 17; Gmelin, S. N. i. 190.
1153. t. 256.
A. Oreas orcas, Desm. Mam. 471; Burchell, Trav. i. 248.
A. Boselaphus orcas, Blainv. B. S. P. 1816, 75; Fischer, Syn.
477. 644.
Boselaphus Oreas, Gray, Cat. Mam. B. M. 155; Cat. Osteol.
B. M. 59; Ann. & Mag. N. H. 1846.
Boselaphus Canna, Gray, Cat. Mam. B. M. 155, female.
Antilope Oryx, Pallas, Misc. Z. 9; Spic. Z. i. 15; Forster, MSS.
55; Erxleb. Mam.
f. 5, horn ?; v. 882.
Antilope Canna, Fischer, Syn. 644.
Afrikanisches Elend thier, Kolbe, Vorgeb. Hoffn. i. 145. t. 3. f. 1.
Coudou, Buffon, H. N. xii. 357. t. 46 b, horn.
Canna, Buffon, Suppl. vi. t. 12 & adult; Cuv. R. A. i. 263.
Eland, Sparrm. Kongl. V. Handl. 1779, 155. t. 5; Harris, W. A.
A. t. 6 and head; Vosmaer, Besch. 1785, t.
Cape Elk, var., Daniel, African Scenery, t.
Indian Antelope, Penn. Syn. 26; Quad. i. 78; Shaw, Zool. ii. 319. t. 183; Barrow, Travels; Licht. Reise, i. 155, ii. 39.462; Burchell, Travels.

Elandt, Dutch at Cape G. H.
Canna t’Gann or Y’gann, Hottentots.
Impophos or Poffo, Caffers.
Empophos, Zimmerm. Geog. Zool. ii. 109; Lobo, Abyss. i. 293.
Bastard Eland, Dutch at Cape G. H.

Hab. S. Africa.

Skin and horns, in bad state. S. Africa. Presented by William Burchell, Esq., LL.D.
Female. S. Africa.

Osteology. Skull, t. 17. f. 3, 4.
Coudou, Daub. in Buffon H. N. xii. t. 46. f.
Three pairs of horns, separate. South Africa.
Frontal bone and horns. South Africa.
Horns on base of skull. S. Africa.
Horns and skin of nape. Cape of Good Hope. Presented by William Burchell, Esq., LL.D.
Separate horn of an adult. (Antilope Canna of Col. H. Smith, and figured by Griffith, A. K. t. 181. f. 5.)

Icon.
Horns.—Hardw. Icon. ined. B. M. 10,975. t. 166.
A. Orix.—Forster, Icon. ined. B. M. i. t. 30.

Mr. Livingston observes, “It is a well-ascertained fact, that the Eland, Gemsbock, Duiker, Steinbock, &c., can live for months together without water. The Eland becomes enormously fat during the driest season, viz. the winter, when all the herbage is withered and so dry that it crumbles to powder in the hand; and yet the stomach of all these animals, when opened, contained a good deal of moisture. Our party was well supplied with Eland flesh during our passage through the desert; and it being superior to beef, and the animal as large as an ox, it seems strange it has not yet been introduced into England.”—Journ. Geog. Soc. xx. 139, 1850.

They have bred at Knowsley, but are ravenous feeders, and liable to an epidemic.


Pale reddish brown. Front of the face, the neck, the front part of the under side, a spot on the front and hinder side of the
upper part of the fore-leg, and the dorsal streak, dark black. The belly, the front and back edge of the upper part of the legs, and under side of tail, whitish. A broad half-collar in front of the shoulder, narrowed above. Fourteen or fifteen narrow, waved, perpendicular streaks on each side of the body white. Withers with intermixed black hairs. Throat of female dark brown; crown reddish brown.

Oreas Derbianus, Gray, Knowsley Menag. t. 3 and 9.
Hab. Western Africa; River Cassaman.

Horns. Gambia.

B. Horns subangular, obscurely keeled. Nose bovine. Muzzle rather large, bald between and beneath the nostrils, and on a narrow band up the middle of the hairy upper lip. Neck with longer hair, forming a mane. Body high. Legs slender. Hoofs and false hoofs small.

3. TRAGELAPHUS.

Horns conical, tapering, with only one spiral turn, subangular, very obscurely angular in front at the base, with a keel above arising from the hinder part of the base. Tear-bag distinct. Neck and throat with longer hair. Nape and back with a more or less distinct mane. Legs slender. Hoofs and false hoofs small. Females hornless. Skull, t. 18. f. 1, 2.

Antilope (Tragelaphus), sp., A. Smith, Griffith A. K. v. 182; Lesson, N. Tab. R. A. 181.


Strepsiceros, sp., Ogilby.
Euryceros, Gray, Knowsley Menag.

1. TRAGELAPHUS EURYKERUS. The Broad-horned Antelope.

Head pale brown. Broad band before the eyes, and two large spots on cheeks, chin, and front of upper lip, white. Horns
elongate, thick, scarcely bent forward at the tip. Throat with long black hairs.

Tragelaphus (Euryceros) Eurycerus, Gray, Knowsley Menag. t., head.
A. Tragelaphus Eurycerus, Lesson, N. Tab. R. A. 181.

Hab. W. Africa.

Osteology.
Horns. From Mr. Warwick's Collection.
The horns are very similar to those of T. Angasii, but the head is considerably larger, nearly as large as that of the Kudu, and the horns are thicker and larger; they are 27 inches long in a straight line from base to tip, and 9 inches in circumference at the base. The hair of the head is also paler and more uniformly coloured, and with very large white spots on the cheek, much larger than those of the Kudu or of T. Angasii. The throat has a distinct mane of blackish rigid hairs. The muffle is very like that of T. Angasii, and larger than that of the Kudu. The skull is imperfect; it has no appearance of any suborbital pit or slit.

Var. 1. Skull about two-thirds the size of the former.

Hab. Bight of Biafra.


2. Tragelaphus Angasii. The Inyala.

Black. Back with a vertebral streak and four or five bands on each side. Head blackish. Narrow band before eyes and small spot on cheeks, front of upper lip and chin, white. Forehead and feet bay. Throat with a mane of long, rigid, blackish hair. Horns rather slender, elongate, rather bent forward at the tip. Female bay, with many white bands. Muffle band small, only extending half-way up between the nostrils and about one-third the length beneath them, and entirely separated from the edge of the upper lip by a broad, hairy band (with a slight central groove). The horns are 8 inches in diameter at base, rather slender, elongate, black with white tips, rounded in front, with a very obscure indication of a keel, and with a keel arising from the back edge of the horns, on the inner side of the upper part, rather bent forwards in front.
Hab. S. Africa; Port Natal; Angas, Proudfoot.

A skin of male and female without feet. S. Africa; Port Natal. Mr. Proudfoot’s Collection.

The slenderness of the horns and smaller size of the head, and the dark colour and small size of the bands and spots on the head, chiefly distinguish the head of this species from T. Euryceros.


† Back with cross bands and lateral streaks.

3. Tragelaphus scripta.


The adult males (four years old) have a high ridge of long, coarse, white hair extending the whole length of the back to the tail.—Dict. Sci. Nat. t.; Knowsley Menag. t.

Antilope scripta, Pallas, Misc. 8; Spic. i. 15, xii. 18.
A. vera scripta, Licht. B. M. vi. 169; Gmelin, S. N. i. 191; Schreb. Saurg. 1212. t. 258.
A. (tragelaphus) scripta, Blainv. B. S. Phil. 1816, 75; Desm. Mam. 470; H. Smith, G. A. K. v. 859; Fischer, Syn. 473. 640.

Tragelaphus scriptus, Gray, Cat. Mamm. B. M. 160; Cat. Osteol. B. M.; Knowsley Menag. t. 3♀; Ann. & Mag. N. H. x. 267, 1843.


Antilope (Tragelaphus) phalerata, H. Smith, G. A. K. v. 860; Fischer, Syn. 640.


Harness Antelope, Penn. Syn. 27; Quad. i. 81; Shaw, Zool. ii. 322. t. 186.

Bontebock, Dutch in Africa.

Oualofes or Zalofes, Negro in Gambia.

Hab. West Africa; Senegal and Gambia.

Osteology.
Skull of female with the intermaxillaries reaching to the nasal. Suborbital pit none. Nasals, slit up each side in front.
Varies, some having seven, and others nine white cross bands, and some are spotted and others not. They breed together at Knowsley, and produce specimens different in these respects from their parents.

4. **Tragelaphus Decula.** The Decula.
Grey brown. Back with three or four indistinct cross bands. Arched streak on upper part of side, a few spots forming an arch on the haunches, dorsal line, streak on nose and on front of fore legs, blackish.

Antilope Decula, Rüppell, *Fauna Abyss.* t. 4.

Male. Abyssinia. From the Frankfort Museum.

Var. Back without the cross bands. *Hab.* Africa; Abyssinia; Rüppell.

†† Back without any cross bands or lateral streaks.

5. **Tragelaphus sylvatica.** The Bosch Boc.
Blackish brown. Head pale brown. Band across forehead black. Small spot on haunches, larger spot on insides of legs and on feet white. Dorsal line longly crested, black, white varied. Female paler brown. Young pale bay.

Antilope sylvatica, Sparrm. *Act. Holm.* 1780, iii. 197. t. 7; Gmelin, *S. N.* i. 192.
Tragelaphus sylvaticus, Gray, *Cat. Mamm.* B. M.* 160; Cat. *Osteol. B. M.* 59; Knowsley Menag.


Forest Antelope, *Penn. Quad.* i. 86.

Bosch bock, *Dutch at Cape.*

*Hab.* South Africa.
Skin (bad state). S. Africa. Presented by W. Burchell, Esq., LL.D.
Female and males. S. Africa.
Young. From M. Verreaux's Collection.
Half-grown female. S. Africa.

Var. 1. Smaller. Horns shorter, less diverging and more ascending.


Osteology.
Base of skull, with horns.
Pair of horns, separate.
Horns. S. Africa. From Mr. Warwick's Collection.

The two pairs of horns, named by Colonel H. Smith Boselaphus canna (a, b, in the List of Mamm. Brit. Mus. 155); one, presented by Dr. W. Burchell, is certainly the horns of this species, and the other appear to be those of a young male, Strepsiceros Kudu.

II. In the Asiatic Strepsiceres the horns are short, conical, angular, subspiral, with an obscure oblique ridge. Tear-bag deep, longitudinal. The hind leg much shorter than the fore; shoulder higher than rump. The nose bovine, with a large moist muffle. Skull with "the nasal opening rather small, with the nasal bones small and narrow; a minute suborbital fissure; no fossa, but a smooth line upon the lacrymal bone; the masseteric ridge not extending high; the auditory bulla moderate, bulbous, compressed; the basioccipital bone with the posterior tubercles moderately developed, the anterior ones scarcely at all; the molars with supplemental lobes. The smooth line upon the lacrymal bone terminates in a small foramen, but one side is continued for some distance forwards upon the maxillary bone, where it terminates in the same way."—Turner.


4. PORTAX.

The Character of Section.

Damalis (Portax), H. Smith, Griffith A. K. v. 182; Fischer, Syn. 625; J. Brookes, Cat. Mus. 64, 1828.


Tragelaphus, Ogilby, P. Z. Soc. 1836.

Fig. 2.

Skull of Portax Tragocamelus.


Grey. Rhombic spot on the forehead and above the hoofs black, and white ringed; tail end black. Female browner. Young dull reddish fawn. Lower part of legs brighter. Under lip, spot on jaw, and line along the belly, on outside of leg, and fore part of hock, white. Tip of tail, line on back, of nose, and on front of legs, black.

Antilope Tragocamelus, Pallas, Misc. Zool. 5; Spic. Zool. i. 9, xii. 13; Gmelin, S. N. i. 184.
Antilope picta, Pallas, Spic. xii. 14; Gmelin, S. N. i. 184; Schreb. Saugth. 1159. t. 262, 263 A, 263 B; Desm. Mam. 471; Wolf. Abbild. ii. 57. t. 16; F. Cuvier, Mam. Lithog. t.; Fischer, Syn. 476. 645; Bennett, P. Z. S. 1831, 37.
A. Boselaphus picta, Blainv. B. S. Phil. 1816, 75.
Portax Tragocamelus, Gray, Knowsley Menag. 28. t. 29.
Damalis picta (Nylgau), J. Brookes, Cat. Mus. 64, 1828.
Antilope leucopus, Forst. MSS.; Zimmerm. Zool. 541.
Portax Tragelaphus, Sundevall, Pecora.
Portax picta, Gray, Cat. Mamm. B. M. 154; Cat. Osteol. B. M. 59.
The Nylghau, Hunter, Phil. Trans. lxi. 170. t. 5 ♀, cop. Naturf. vii. 236. t. 2.
Neelghau, Antilope Hippelaphus, Ogilby in Royle’s Himal. i. 73.
Hippelaphus, Aristotle, Hist. Anim. ii. c. 5.
Nilghau, Shaw, Zool. ii. 327. t. 189.
Neel ghæ, Ogilby, P. Z. S. 1836, 338.
White-footed Antelope, Penn. Syn. 29. t. 6. f. 1, 2; Quad. i. 83. t. 13.
Biggel, Mandelslo Itin. i. 122, 1658.
Tragelaphus Caii, Ray, Quad. 82?
Quadruped from Bengal, Parson, Phil. Trans. xliii. 465. t. 3. f. 9.
Hindostan Antelope, Penn. Syn. 29; Quad. i. 83; Shaw, Zool. ii. 329. t. 190.
Hab. India.
Young. India. Presented by the Zoological Society.
Skin of head. India.

OSTEEOLOGY. Skull, fig. 2. p. 141.
Skull. India.

ICON.
Neelghau, Hardw. Icon. ined. B. M. n.10,975. t.149 ♀, n. 10,974. t. 90, 96.

Subtribe IV. Caprææ. Forehead convex, elevated behind. Chin of males bearded. Suborbital sinus none. Horns erect, compressed, curved backwards and rather outwards, and furnished with a longitudinal keel in front, deeper than wide at the base, and with transverse ridges in front. Hoofs four-sided, scarcely higher before than behind. The skull has “a small suborbital fissure, no fossa; the masseteric ridge ascending high before the orbit; the auditory bulla prominent and compressed; the basioccipital flat, with its processes developed; the middle incisors not expanded; the molars without supplemental lobes.” —Turner.

“The occipital plane of skull forms an acute angle with fron-
tal plane. Cores of horns thick, porous, cellular. Horns seated superiorly on the crest of the forehead, and by their union covering the top of the head. Canines wanting. Teats 2, rarely 4.” —Hodgson.

The males have a strong stench; they butt first raising themselves on their hind-legs and then coming down sideways against their enemies.


Mr. Hodgson, in his remarks on the Craniological character of Ovis and its allies, observes, “That the great depth or extent of the posteral plane of the skull (comprehending half the frontal and all the parietal bones), and the acute angle it forms with the anteral plane in the genus Ovis, will be found to be characters of more permanence and moment in separating this genus and Capra from the nearest adjacent groups of Ruminants, than most of the diagnostics now employed. I subjoin an outline of the typical Antilopine and Cervine form of skull on one hand, and that of the normal form of Ovis and Capra. Of these forms, Cervus and Ovis represent the extremes, and Antilope and Capra the means; but there is a regular gradation from Cervus to Antilope, from it to Capra, and from it again to Ovis.” —J. A. S. B. x. 234. t. 2.

Mr. Hodgson, in his remarks on the genera Capra and Ovis, observes, “The males not being odoruous is one of the best characters to separate the Sheep from the male Goats, which are always odoruous.” —J. A. S. B. iv. 491, 1835; x. 234, 1841.

The horns of some domestic varieties have an inclination to twist more or less spirally, like some varieties of Sheep and Strep-siceres.

The keel of the horns of the Sheep, and especially of the Goats, is on the inner part of the front edge of the horns; but in the Marbur or Snake-eater of Affghanistan the strongest keel which forms the spiral ridge arises from the hinder part of the inner side of the horns, the front one being obscure.

The hybrid produce of the Sheep and Goat are fertile, black-faced, and differ little in form from the black-faced Sheep. The intercourse is stated to be common.—Muirhead, Statistical Acc. Parish of Urr. xi. 66; Fleming, Phil. Zool. ii. 198; see also Cuvier, R. A. i. 267.
Synopsis of Genera of Capreæ.

**A. Muzzle naked.**

1. **Hemitragus.** Horns trigonal, compressed, and knotted in front.

2. **Kemas.** Horns square, flat, and cross-ridged in front.

**B. Muzzle hairy.**

3. **Ægoceros.** Horns roundish, conical.

4. **Capra.** Horns square, flat, and nodose in front.

5. **Hircus.** Horns trigonal, compressed, sharp-edged, and knotted in front.

**A. Muzzle naked.**

1. **Hemitragus.**

   - Nose cervine. Muzzle small, moist between the nostrils. Horns short, recurved, compressed, triangular, shelving on the outer side, and nodose in front. Interdigital and suborbital pores none. Tail very short. **Female:** horns smaller. Teats 4. **Male** not bearded, neck maned; odour like the Goats.


   Kemas, Ogilby, P. Z. Soc. 1836.


   Hemitragus, b, Gray, Knowsley Menag. 31.

---

1. **Hemitragus Jemlaicus.** The Jharal or Tehr.

   Brown or ashy. Dorsal streak and feet black.


   Hemitragus iharal, Sundevall, Pecora, 101.

Semicapra Jemlaicus, *Hodgson.*

Thar, *Ogilby in Royle's Flora,* i. 73.

*Hab.* India; Nepal, the Kachar, or northern hilly region.

An adult specimen, blackish.
An adult specimen, reddish brown, long hair of neck and back whitish.
A half-grown specimen, pale brown.
A young specimen.

**Osteology.**

Head and horns. Nepal.
Base of skull, with horns. Nepal.
Basal part of skull, and horns of female. Nepal.

**Icon.**

Drawing of male, female and young.—*Hodgson, Icon. ined. B. M.* t. 165.
Drawing of male and female.—*Hodgson, Icon. ined. B. M.* t. 166.
Drawing of male.—*Hodgson, Icon. ined. B. M.* t. 167.
Drawing of male, with details of head.—*Hodgson, Icon. ined. B. M.* t. 168; copied with more details of head, t. 170.
Drawing of male.—*Hodgson, Icon. ined. B. M.* t. 169.
Drawing of skull of young female.—*Hodgson, Icon. ined. B. M.* t. 187. f. 1, 2.

"The Jharals inhabit the loftiest mountains of India, in the most inaccessible bare crags beyond the forest, close to the perpetual snows. They feed in the open glades below such crags at early morning and evening, returning in the day to their awful fastnesses. They are gregarious, in flocks of twenty or thirty,
but sometimes of forty or fifty. If alarmed when feeding, they go off at speed with a noise like thunder, but anon halt to gaze on the intruder, whose shot sends them off again under the guidance of an old male, whom they follow blindly. They rut in winter, and the female gestates six months, producing one young in June or July. They are more dauntless and skilful climbers than the Wild Sheep. If they can but touch a rough edge or crevice now and then, they will run up nearly perpendicular precipices of many feet elevation, and they will stand on a bit of rock not larger than one’s palm, looking confidently down over sheer space, with not a shrub to break the awful absence of rest for the foot.

“The Jharal breeds with the domestic Goat, and perhaps more nearly resembles the ordinary model of the tame than any wild species yet known.”—Hodgson, J. A. S. B. iv. 491, 1839.

“I never could get any progeny from the Goats by the Jharal, though my male had commerce with Goats of several breeds repeatedly during the six years he lived with me, quite tame and going abroad with the Sheep and Goats.”—Hodgson.

“In February 1842, a male Jharal in possession of the Court of Nepal had intercourse with a female Cervus Axis, which in July produced a young hybrid of mixed appearance, but more like the mother than the father, which lived and grew up a fine animal; I saw it last in October 1843. I note the circumstance as a strong corroboration of the affinity of the Hemitragus to the Deer, which is indicated by the four teats and moist muzzle.”—Hodgson.

2. Kemas.


Hemitragus, § a, Gray, Knowsley Menag. 31.

1. Kemas WARRYATO. The WARRYATO or JUNGLE Kemas.

Brown, yellow grisled. Male: back with a dirty white patch. Female paler. Young ashy grey.


Capra hylocria, Schinz, Verz.

Hemitragus Warryato, Gray, List Osteol. B. M. 60.

Warryato, Hardw. MSS.

Hemitragus hylocrius, Sundevall, Pecora, 101; Gray, Knowsley Menag.


**OSTEOLOGY.**


Head of female, without the sheath to the horns. Nepal?

**ICON.**

Warryato or Hill Goat of the Tamooleans, Hardw. Icon. ined. B. M. n. 10,975. t. 192 (sketch improved from former by Col. H. Smith, t. 193).

**B. Muffle hairy, ovine.**

Hircus, Brisson, R. A. i. 38, 1762.

Capra, sp., Pallas; Illiger, 1811; Linn. S. N.; Desm. N. D. H. N. 1804.


3. **Ægoceros.**

Nose ovine, hairy, without any muffle. Horns (of male) very large, spirally curved, flat, and with nodose tubercles in front; base very thick, roundish, then conical, attenuated, with sharp and strongly converging tips; of females smaller. Tear-bag and inguinal pores none. Ears densely pilose. Hair of forehead simple. Tail very short, flattened. Chin bearded.


Capra, § a, Sundevall, Pecora, 91.

Capra (sect. Turs), Gray, Knowsley Menag.

* Horns keeled behind.

1. **Ægoceros Pyrenaica.** The Pyrenean Tur.

Face black in front, paler on the sides. Horns keeled behind, flat on the inner side.
Capra Ibex, *Linn. S. N.* i. 95, part. (see Sundevall, *Pecora,* 115).  


f. 1, 2, skull; 1836, t. 2, animal and horns; t. 3, skull; t. 4, young; *Verz. Syst.* ii. 457; *Sundevall, Pecora,* 91; *Brehm, Isis,* 1844, 481; *Wiegmann, Arch.* 1845, ii. 41.  

**Hab. Pyrenees.**  

Male and female. Pyrenees.  

**Osteology.**  

*Skull, female. Pyrenees.*  

*Var. 1. Legs paler, only black up the centre of the front.*  


**Horns not keeled behind.**  

2. *Ægoceros Caucasia.* The Tur or Zack.  

Wool chestnut-brown. Beard of male long. Horns black, wrinkled, moderately thick, semicircular behind and descending externally, the tip turning upwards and inwards; the base almost triangular; middle roundish and compressed. Female with no beard. Horns small, with a slight curve.  


t. 17 a, female, b, head, male; cop.* Schreb. v.* t. 281 b;  


Ovis Cylindricornis (Caucasian Argali), *Blyth, P. Z. Soc.* 1840, 68.  


Caucasian Ibex, *Shaw, Zool.* ii. 367.  

Bouquetin du Caucase, *Cuv. R. A.* i. 266.  

**Hab. Caucasus.**  

Male and female. Aladagh. From Mr. Warwick’s Collection.  

“They live in droves of five or six females and their young, under the care of an old male.”

Nose ovine, hairy, without any muffle. Horns (of male) very large, elongate, recurved, curved nearly on the same plane; base subquadrangular, broad, flattened, and with broad cross ribs in front; outer side rather compressed and rounded; tip compressed, broad; of female smaller. Hair of forehead elongate, whorled. Crumen and inguinal pore none. Chin bearded.


Capra, § 1. Ibex, Gray, Knowsley Menog. 

Capra, sect. β, Sundevall, Pecora, 93.

* Ears densely villose.

1. Capra Ibex. The Ibex or Steinbock.

Ears small, acute, not one-fourth the length of the head. "Horns of the male very strong, thick, subquadrangular, transversely rugose, flattish and nodose in front; of female small, compressed, slightly nodose. Fur in summer short, adpressed, without any under coat, ashy grey. In winter, elongate, fulvous brown, with long, dense, intermixed under-fur. Beard short, brown, in summer wanting."—Schinz.

Capra Ibex (part.), Linn. S. N. i. 95; Gmelin, S. N. i. 196; 


Ibex alpinus, Gray, List Osteol. B. M. 59.

Ibex, Plin. Hist. Nat. viii. 53; Gesner, Quad. 351, fig.; Brisson, R. A. 64; Shaw, Mus. Lever. iii. 105. t. 2; Zool. ii. 364. t. 198; Knight, Mus. Anim. Nat. f. 667, 668, 669, bad.


Bouquetin, Buffon, H. N. xii. t. 13, 14; Cuvier, R. A. i. 266; 
Mam. Lithog. t. Knorr, Delic. ii. t. K. 5. f. 2.

Capricornis, Gesner, Quad. 1099. fig.

Hab. Europe, Alps.


Male. Europe, Alps.
Osteology.
  Base of skull and horns, very large.
  Two skulls and horns.
  Single horn, rather compressed.

2. **Capra Sibirica.** The Tek or Takiga.

Pale grey. Ears oblong. Beard of both sexes dependent.
Lower maxilla of *male*, and spot on each side of the jaw in the
female, black brown.

Ibex Sibiricarum (Der Sibirische Steinbok), Pallas, *Spic. Zool.* xi.
32, 53. t. 3. t. 5. f. 4, horns.
Soc. Helv. ii. t. 2, horns, 1838; Sundevall, Pecora, 94; Gray,
*List Mamm. B. M.* 167.
Capra Ibex, Schreb. *Saugth.* t. 281, from Pallas.
Capra Pallasi, Schinz in Cuvier, Thierr. iv. 511.
Hab. Siberia.

Male and female. Siberia. From the St. Petersburg Academy.

3. **Capra Himalayana.** The Sakeen or Skyn.

Brownish grey. Tail, beard, dorsal stripe, band on shoulders,
anteüz part of limbs, black or dark brown.

Capra Sakeen, Blyth, *J. A. S. Beng.* xi. 283, not described.
414, iv. 291.
Himalayan Ibex or Sakeen, Hutton, *Calcutta Journ. N. H.* ii. 542;
Capra Himalayanus, Schinz, *Syn.* 463?
Skyn, Skee, Saken, Sikeen, or Kyl, Vigne, *Travels*, i. 311.
Skyn ♂, Damma ♀, Moorcroft, *Journ. Asiat. Soc. Bengal*, 1839,
928.

Capra (Ægoceros) Skyn, Wagner; Sundevall, Pecora, 94.
Ibex (from Simla), Ogilby in Royle’s *Himal.* i. 75.
Hab. Himalaya; Little Thibet; Mountain districts of Afghan-
istan, called Borz by the Afghans.

Probably not distinct from *Ibex Sibirica*.
"The Tehr or Wild Goats of the Himalaya (of Simla and Muscuri) have the anterior edge of the horns decidedly nodose, though less so than the Jharal."—Hodgson, J. A. S. B. iv. 491, 1835.

"Horns of the Ibex are attached to the Zearuts and places of sacred note in Afghanistan."—Bengal Journ. 1841, 978.

"The Ibex is so abundant in Thibet, as to be killed for their potham or fine wool, which is used to make shawls. They surround them when the mountains are covered with snow. The horns are slit down longitudinally, and formed into bows for archery."—Lord A. Hay.

In the Collection from Thibet in the India House Museum there are the skins and skulls of what appear to be two species of *Capra*, but the skulls and skins are not attached together, and the horns of both are very similar. One has short hair and a black beard, and the skull has an elongated face. The other has a black, abundant beard, and very elongated soft fur, like *Capra Sibirica*, and the skull which appears to belong to it has a short face, very broad at the orbits.


*Capra lœvicornis*, Sundevall, Pecora, 95.

*Hab.* ——? Menagerie of the French Museum. Two males.

The horns are intermediate between *C. Ibex* and *C. hircus*; they are probably hybrids. The smoothness of the horns of the specimens in the Paris Museum (1851) appears to arise from the animal having rubbed them against the wall and bars of his paddock.

**Ears very shortly pilose.**

5. *Capra Nubiana*. The Beden or Jaela.


*Capra Ibex* (Baeden), Forsk. Faun. Arab. iv.

*Capra Nubiana* (Boue de la Haute Egypte), F. Cuvier, Mam. Lithog. 1825; Gray, Spic. Zool. t. 9; Cat. Mamm. B. M. 168; Fischer, Syn. 483, 648.
Capra arabica, Mus. Vindob.
Capra Jaela, H. Smith in G. A. K. v. n. 869 (not figure at iv. 301).
Capra Sinaitica (Sinaica), Ehrenb. Sym. Phys. t. 18; Gene, Mem. Turino, xxxvii. t. ♀.
“Capra Beden, Forsk.,” Wagner; Sundevall, Pecora, 95.
Cretan Wild Goat, Belon, fig.
Hab. Egypt; Arabia; Crete.
Adult male, young male, and younger male. N. Africa.

Osteology.
Pair of horns, half-grown.
Skull and horns. Mount Sinai.

Var. 1. Legs less black.


Capra Walie, Riippell, Fauna Abyss. t. 6.
Capra Valie, Sundevall, Pecora, 95.


5. Hircus.

Horns compressed, with a narrow, thin, nodose or torn keel in front; outer side convex, rounded behind. Ears covered with short, adpressed hairs. Hair of forehead like back, rather whorled.

Hircus, Wagner, Supp.
Hircus, sp., Brisson; Rafin. Anal. Nat. 56, 1815.
Capra ἥ, Sundevall, Pecora, 96.
Tragus, Klein, Quad. 15; Schrank, Fauna Boic. i. 45.
“Goats are distinguished by the horns being inclined very obliquely, not angular, compressed, and presenting a sharp keeled edge to the front, whereby they may be distinguished at once from all kinds of Sheep and Ibexes. They have usually a true beard, common to both sexes, not present in the Sheep. They have callosities on the knees, and sometimes also on the chest.” —Hodgson.


Capra Hircus, Linn. Faun. Suec. 15; S. N. i. 94; Gray, List Mamm. B. M. 168; List Osteol. Spec. B. M. 60; List Hodgson Coll. B. M. 28; Sundevall, Pecora, 96; Fischer, Syn. 484. 648.


Capra Ægagrus, Gmelin, S. N. i. 193; Meyer, Zool. Ann. i. 396; Schreb. Saugth. t. 282; Cuvier, Menag. Mus. R. A. i. 267; Desm. Mam. 483; Fischer, Syn. 484. 646; F. Cuvier, Mam. Lithog. t.; Sundevall, Pecora, 97.

Ægagus, Pallas, Spic. Zool. xi. 45. t. 5. f. 2, 3.

Ziege, S. G. Gmelin, Reise, iii. 493.

Capra Hircus vulgaris, Schreb. t. 283.

C. Ægagus ß. Hircus, Gmelin, S. N. i. 193; Desm. Mam. 483.


Tragus Ægagrus, Schrank, Fauna Boic. i. 45.

Capra, Plinii H. N. vi. 50; Gesner, Quad. 270. fig.; Hodgson, J. Asiat. Beng. xvi. 1847, 1017.

Hircus, Gesner, Quad. 301. fig.

Hircus vel Capra domestica, Brisson, R. A. 62.

Tragus domesticus, Klein, Quad. 15.


Capra bezoartica, Linn. S. N. i. 96, part. from Kämpfer.

Gazella bezoartica, Brisson, R. A. 69, part. from Kämpfer.


Common Goat, Shaw, Zool. ii. 369. t. 199.


Bouc et Chèvre, Buffon, H. N. v. 59. t. 8, 9.

Capricorne, Buffon, H. N. xii. 146. t. 15, skeleton.

Hab. Domesticated.

Stuffed, ears pendent.

Stuffed. (Africa.) Presented by Miss Inglis.

Adult, stuffed. From the Zoological Society’s Collection.

Half-grown male. From the Zoological Society’s Collection.

Cashmere Goat. India. From Capt. Boys’s Collection.
Hybrid Goat, male and female, between Common Goat and European Ibex; bred in the Zoological Society's Gardens.
Young. From Riddle Museum.

Osteology.
Capricorne, Daub. Buff. H. N. xii. t. 15.
Skull, with horns. India. From Mr. Argent's Collection.
Horns. India. From Mr. Argent's Collection.
Horns, elongate, erect.
Horns, expanded on the side.
Three skulls, var. Sinai, with the horns regularly bent back.
Skull, with horns, var. Chângra or Shawl Goat. Thibet.
Presented by B. H. Hodgson, Esq.
Skull, with horns, var. Chappoo, Capra Chungra. Thibet.
Presented by B. H. Hodgson, Esq.

Two skulls and horns. (The specimens described (Capra Caucasica) by Col. H. Smith.)
Single horns, in bad state, with only three very distant knots on front keel. Specimen described as Capra Caucasica by Col. H. Smith.


Domestic Varieties.

1. The Maykay or Maycay, Buchanan, Mysore, i. 120. t. 5. f. 10. Hab. India; Mysore; kept with sheep.


Bouc de Nepaul, F. Cuv. Mam. Lith. t. 8 9.
Goat of the country west of the River Jumna, Hardw. Icon. ined. B. M. 10,974. t. 111.
   *Hab.* Dukhun.

   Capra Æg. Thebaica, *Desm. Mam.* 848.
   C. Æg. Thebaicus, *Fischer*, *Syn.* 493.
   Adimain, *Nieremb. H. N.* 183. fig.
   *Hab.* N. Africa.

6. The Doogoo, *Hodgson*, *J. A. S. B.* x. 913; *Icon. ined.* t. 171. 3 §.
   *Hab.* Central Hill, Nepal; common, domesticated.

   C. hircus var. Sinal, *Gray*, *Cat. Hodgson Coll. B. M.* 28;
   *Hodgson*, *Icon. ined.* 172; *J. A. S. B.* i. 347, xvi. 1022. t., xx. 913.
   *Hab.* Nepal; Central Mountain region; domesticated, with
   hair and shorn.
   Three skulls, with the horns regularly bent back.
   A skin, with skull and horns.
   Drawing of varieties.—*Hodgson*, *Icon. ined.* B. M. t. 172.
   "A tall, largish species, with ordinary horns, long, flowing,
   straight hair, drooping, longish ears, and semi-erect short tail."—
   *Hodgs.* l. c. i. 347.

   Capra Æg. Cossia, *Buchanan, Hamilton, MSS.* ii. 9, and horn, t.
   C. Aries Cossus, *Fischer*, *Syn.* 493.
   C. tubericornis, part., *Schinz*, *Verz.* 467.
   *Hab.* High Mountain districts; called *Cossea* in the East of
   Sylhet.
   They are bred by the middling and lower classes of the inhabi-
   tants of the highest Cossia mountains. Neither the skin nor
   hair is applied to any use. The hair is coarse and straight, long
   and pendulous, and has no wool mixed with it, by which it is
   easily distinguished from the Shawl Goat. Ears spread, covered,
   like the legs, with short hair. Tail small and short.
   "The female long-haired Goat is said sometimes to produce
   at a birth one kid like itself, and another short-haired, like the
   Common Goat of Bengal."—*Buchanan, Hamilton, MSS.*
9. Greater Shawl Goat or Changra.
   Capra Ægagrus Changra, Buchanan, MSS. Icon. ined. t. 11;
   Hodgson, Icon. ined. t. 173. f. 1, t. 174. f. 1; Journ. Asiat. 
   Beng. xvi. 1017.
   Changra, Ogilby in Royle's Himal. i. 75.
   Changra or Shawl Goat, Hodgson, J. A. S. B. i. 347, x. 913, 
   xi. 283.
   Hab. Nepal and Thibet.
   A skull with horns.
   An adult skull with horns.
   Drawing of male.—Hodgson, Icon. ined. B. M. t. 173. f. 1, and 
   t. 174. f. 2.
   Drawing of horns.—Hodgson, Icon. ined. B. M. t. 175. f. 1, 2.
   Chungra, Paruttes; Cholay, Newars; Camgoo, Thibetians; 
   Shawl Goat, English.
   "Domesticated in Thibet; wool exported to Cashmere, where 
   it is manufactured into cloth and felts. Many castrated speci-
   mens are brought to Nepal for food. Manners exactly like com-
   mon Goat, and thrive best in a very cold climate."
   "Hair of body, neck, and upper part of head remarkably long, 
   especially that arising from the spine, pendulous, straight and 
   rather harsh, and intermixed with remarkably fine and soft short 
   wool, which alone is used by the manufacturer; hair on legs and 
   face rather short, and not mixed with wool. Ears very short.
   Nose straight. Horns longer than the head, much compressed, 
   inner edge sharpest, approach at the base and diverge at the 
   summit with a twist round; they are nearly straight, and stand 
   on the plane of the forehead. Tail short."
   "The drawing from a castrated male (made by Mr. Burton)."
   —Buchanan, Hamilton MSS.

10. Lesser Shawl Goat, Capra Ægagrus Chapu, Buchanan, Icon. 
    Bouc de Cachemire, F. Cuvier, Mam. Lith. t.
    White, black varied. Horns suberect, subspiral. 
    Hab. Cashmere; Buch. Tibet; Hodgson.
    Stuffed. India. From Capt. Boys's Collection.
   A skull with horns.
   A young skull.
   A pair of separate horn-sheaths.
   Drawing of male.—Hodgson, Icon. ined. B. M. t. 173. f. 2, and 
   t. 174. f. 1.
   Drawing of horns.—Hodgson, Icon. ined. B. M. t. 175. f. 3, 4.

Hair long, rather coarse, white.

_Hab._ Assam.


Capra imberbis Berbura, *Hamilton, MSS.* ii. 10, and *Icon.* t.
C. Aries Barbarus, *Fischer, Syn.* 493.
C. Jemlaica var., *H. Smith, G. A. K."

_Hab._ India; West of the Jumna; called Berbura ♂, Berburi ♀, and Ram Sagul, Bengalese.

The horns of the male near the ear at the base, inclining a little back and spread out laterally near the tip, much compressed at the root, convex before, concave behind, and having a spiral turn, not remarkably wrinkled. Ears short. Forehead prominent, covered with longish hair. No beard. Throat of males with a deep dewlap. Fur smooth. Hair harsh, of the spine forming an erect mane, and on fore-part of hind thighs long. _Male_: scrotum divided into two distinct bags. _Female_: want the long hair on spine, thighs, and the dewlap.

They differ from the common Indian Goat by the want of the beard and the length of the legs; and from the Maycay of Mysore by the shortness of the ears. They are white, variegated with black and reddish brown. Length from nose to horns 9 in.; from horns to tail 3 ft. 4 in.; height at shoulders 2 ft. 9 in.

"They are said by Mr. Fleming to have been introduced from Abyssinia by an ambassador from that country."—*Hamilton, l. c.*


"Body marked with beautiful streaks."—*Robinson, Assam*, 99.

_Hab._ Assam.


Capra reversa, *Linn. S.* N. 95.
C. Æg. reversa, *Gmelin, Desm.*
Bouc de Juda, *Buffon, H. N.* xii. t. 20, 21, 22; *Suppl.* iii. t. 13.
_Hab._ Whidaw.


Capra depressa, *Linn.*
_Hab._ Africa.


Capra hircus, *Linn.*
Capricorne, *Buffon, H. N.* xii. 146. t. 15, skeleton.
C. Ægagrus capricornus, Gmelin, S. N. i. ; Erxl. 364.
C. Hircus capricornus, Fischer, Syn. 486.
Capricorne Goat, Penn.
Goat, Low, Dom. Anim. B. I. ii. 73.
Bouc et Chèvre, Buffon, H. N. v. t. 8, 9.
Hab. Europe.

Chèvre de Thibet, F. Cuv. Mam. Lith.
Bouc de Cachemere, F. Cuv. Mam. Lith. t.
Hab. Thibet.

C. Angorensis, Linn.
C. Æg. Angorensis, Gmelin, Desm.
Chèvre d’Angora, Tour. Voy. ii. 185. fig.; Buffon, H. N. v.
71. t. 10, 11; F. Cuv. Mam. Lith. t.
Hab. Angora.

19. Syrian Goat, Penn. Syn. 15. t. 5. f. 1, 2.
Capra Mambrica, Linn.
C. Hircus Mambrica, Schreb. t. 285; Desm.
C. Mambrine ou de Levant, Buffon, H. N. xii. 152. t. 10.
C. auribus demissis, Aldrov. Bisulc. 769. fig.
C. Syriaca, Brisson.
Long-eared Syrian Goats, Knight, Mus. Anim. Nat. f. 661,
662, 663.
Hab. Syria.

Hab. Persia.

C. Æg. Indicus, Fischer, Syn. Mam. 649.
Indian Goats (various), Capra Ægagrus var., Hardw. Icon.
ined. B. M. n. 10, 974. t. 114, 115. t. 189, 190, 191.
Hab. India.

i. t. 287 b.
C. Æ. acera, Desm.
Chèvre sans cornes, F. Cuvier, Mam. Lith.
Hab. Spain.


Hab. Thibet.


Hab. Jamaica.


Hab. S. America.

Dr. Gardiner observes, "Goats in Brazil lose the long hair natural to them in cold countries, which proves how much the economy of animals can suit itself to change of circumstances." —Travels, 163.

Var. 1. Horns very large, more or less twisted, varying from the curvature of those of the Koodoo (A. Strepsiceros), only in an opposite direction, to the straight with spiral keel of the Impofo (Antilope Oreas). Size large. Brown, like Domestic Goat. Aigoceros Falconeri, Wagner, Murch. Gel. Anzeig. 1839, ix. 430; Wiegm. Arch. 1841, 54.

Capra Falconeri, Hugel; Wagner in Hugel Kaschmir, iv. 579. tab. 1844; in Wiegmann, Arch. 1845, ii. 7.

Markhur, Vigne, Ghuzni, Kabul, Afghanistan, 1840, p. 86; Travels in Kashmir, 279; Lord in Burns' Cabool (1842), p. 386.


Capra Ægagrus, var., Blyth, P. Z. S. 1840, 80.

Markhor, Ray Soc. i. 65.

Capra hircus γ. asiatica, Sundevall, Pecora, 97.

Hab. India; Mountains of Cashmere; Dr. Falconer. Called Markhore or Snake-Eater by the Afghans, and "Marbul at Cabul," Blyth. Rewachi of Little Thibet.

Mr. Blyth justly observes, that the horns of all domestic Goats have a tendency to assume the spiral form, especially at the tip, and he has never observed this in the wild kinds. He further remarks, that he has never seen two specimens of the Markbur with the horns alike.

Mr. Blyth says, "I consider the Markbur to be a feral race of domestic Goats of remarkable large size, but otherwise not essentially different from the Shawl Goats of the same countries." —Ann. N. H. vii. 196, note.

Osteology.

Skull, with horns. India. Presented by the E. I. Company.

Single horn. India. Presented by H. Falconer, M.D.
1. Capra?
   Antilope torticornis, Herm. Obs. Zool. i. 87.
   A. (Tragelaphus) torticornis, Fischer, Syn. 473.


Subtribe V. Oveæ. Forehead flat or concave. The horns are more or less spiral, wider than deep at the base, and slightly annulated in front. The females are often hornless. The skull has a more or less deep rounded suborbital pit, without any fissure; the masseteric ridge ascending high before the orbit; the auditory bulla small; the basioccipital flat, more or less expanded anteriorly by the extension of the anterior pair of tuberces, the posterior ones small; the cutting-teeth are nearly equal-sized and shelving; and there are no supplemental lobes to the grinders. The hoofs are triangular, and being shallow behind, they have distinct interdigital fosse. Males emitting no stench.

Ovis, Linn. S. N.; Desm. 1804.
Aries, Brisson, R. Anim. i. 48, 1762.
Capra, sp., Illiger, 107, 1811.
Ovis, part., Wagler, N. Syst. Amph. 32, 1830.
Ovidæ, J. Brookes, Mus. Cat. 72, 1828.
Capridæ, part., Ogilby, P. Z. S. 1836, 137.
Sheep, Penn. Hist. Quad. i. 32.
Aries, Rafinesque, Anal. Nat. 56, 1815.

In fighting they run a-tilt, adding hither the force of impulse to that of weight; incurious and timid; rarely bark trees.

Pallas, and more lately Géne, Hodgson, Blasius, and Blyth, have pointed out the characters that define the limits of this genus, which Desmarest, Fischer, and several other authors are inclined to place with the Goat.

The females are sometimes hornless. Gmelin noticed this with respect to O. Ammon, Blyth. O. Nahor and the female Corsican O. Musimon are generally hornless.

Blasius has remarked that the right horn of O. Argali, O. montana, O. Nahor, O. Aries, O. Musimon and O. Vignei, winds to the left, but in the two latter species only slightly, while in O. Tragelaphus, O. orientalis, O. Burhel and O. Cyprius, the right horn winds to the right.
Mammalia.

Synopsis of Genera of Ovæ.

1. Ovis. Crumen distinct. Tail elongated. Skin covered with wool or adpressed hair.

2. Caprovis. Crumen distinct. Tail very short. Skin covered with thick hair, covering the wool.


   a. Crumen distinct. Infraorbital pit distinct.

   1. Ovis.

   Forehead convex. Horns more or less spiral, bent inwards at the tips, varying greatly in size and form. Crumen distinct. Tail more or less elongated. Body covered with wool or close-pressed hair. Skull with a more or less deep suborbital pit, but no fissure.

   Ovis, sp., Linn.
   Capra, sp., Blumenb.; Fischer.
   Musmon, Schrank, Fauna Boica.


   Agoceros Aries, Pallas; Wagner.
   Ovis Aries, Linn. S. N. i. 97; Gmelin, S. N. i. 197; Erxl. 242; Desm. Mam. 483; Gray, List Mamm. B. M. 169; List Osteol. B. M. 61; List Hodgson Mam. & Birds B. M.; Sundevall, Pecora, 89.
   Ovis domestica, Brisson, Reg. Anim. 74.
   Capra Aries, Fischer, Syn. 489. 649.
   Musmon Aries, Schrank, Faun. Boic. i. 46.
   Ovis Aries, &c., Gesner, Quad. 872. f. 873, 925, 926; Jonst. Quad. 54. t. 22; Linn. Amæn. Acad. iv. 169.
   Ram, Penn. Syn. 10.
   Bélier et Brebis, Buffon, H. N. v. l. t. 1, 2; Schäf. Meyer Thiere, i. t. 51; Walther, Wetterau Ann. i. 283.
   Hab. Domesticated.
Female Turkish Sheep, brown and white varied; tail slender; with two throat-beards.

O. Aries Africanus, Linn.
O. Aries longicaudatus, Brisson?

Male, many-horned, white and black varied.

O. Aries polyceratus, Linn.; Buffon, H. N. xi. 354. t. 31, 32; Penn. B. Quad. t. 3. f. 2, 3.

Young.

Osteology.
Mouton, Cuvier, Oss. Foss. iv. t. 1. f. 1–4, skull.
Brebis, Daub. H. N. v. 1.
Horns of many-horned variety.
Horns of many-horned variety.
Horns, small.
Skull and horns of spiral-horned variety.
Skull and horns of spiral-horned variety.
Horns of spiral-horned variety.
Horns of spiral-horned variety.
Skull, with the horns united together at the base.
Var. Huniah Sheep.
Two skulls of many-horned variety, horns of each side arising from the same base, showing that they are produced by the division of the core. Nepal. Presented by B. H. Hodgson, Esq.
Two skulls of four-horned varieties, with horns separate from one another at the base (each wanting one sheath). Nepal. Presented by B. H. Hodgson, Esq.
Skull of the young, hornless.
Var. Horns united at the base. Skull, with the horns cut off near the base. Presented by B. H. Hodgson, Esq.
Skull. From Mr. Argent's Collection.
Skull. Fat-tailed variety. From Mr. Argent's Collection.
Horns, separate.
Skull and horns.
Skull and horns.  From Mr. Argent's Collection.

The Domestic Sheep offer many varieties in the form and even the number of the horns, and especially in the texture of their fur. Many in cold and temperate climates, which are covered with wool, when they are moved to a warmer climate become permanently covered with short hair.

Dr. Gardiner in his journey from Pernambuco to Crato passed through a flock of several hundred sheep. "The excessive heat of the climate had wrought a remarkable change in their appearance, their skin being wholly destitute of wool, and replaced by a short hair not unlike that of a cow."—Trav. 163.

But some kinds even in England, which are covered with wool in the winter, are covered with short adpressed hair in the summer. This is the case with the West India Sheep, noticed by Mr. Blyth (Ann. Nat. Hist. vii. 255). They also present several varieties in the form of the tail.

Pallas divides the Russian Sheep into four varieties, according to the shape of the tail, thus:


**Domestic Varieties.**

   Merino, Desm. N. Dict. H. N. t. 918. f. 1, 2.
   British Middle-wooled Sheep, Knight, Mus. An. Nat. f. 684.

   O. Gallica, Desm.
   O. brachyura, Pallas, Spic. Zool.
   O. leptura, Schreb. Saugth. t. 290 A. B.

   Ovis A. Anglicus, Erxleb.
   Lincolnshire Sheep.
e. Old Lincoln Ram, Low, Dom. Anim. B. I. ii. t. 16.
g. Cobwold Ewe and Lamb, Low, Dom. Anim. B. I. ii. t. 18.
i. Cheviot Ram, Bewick, Hist. Quad. 58. fig.
j. Old Teeswater Ram, Bewick, Hist. Quad. 60. fig.
k. Improved Teeswater Ram, Bewick, Hist. Quad. 61. fig.
l. Mr. Culley’s Wedder, Bewick, Hist. Quad. 66. fig.
m. The Dunky or Dwarf Ram, Bewick, Hist. Quad. 70. fig.

Improved Leicestershire Sheep, Bewick, Hist. Quad. 63.

i. Cheviot Ram, Bewick, Hist. Quad. 58. fig.
j. Old Teeswater Ram, Bewick, Hist. Quad. 60. fig.
k. Improved Teeswater Ram, Bewick, Hist. Quad. 61. fig.
l. Mr. Culley’s Wedder, Bewick, Hist. Quad. 66. fig.
m. The Dunky or Dwarf Ram, Bewick, Hist. Quad. 70. fig.

The Kerry Sheep (Wethers), Low, Dom. Anim. B. I. ii. t. 5.
w. Old Norfolk Ewe, Low, Dom. Anim. B. I. ii. t. 9.


Wild Sheep, *Marco Polo, Travels, 142.*

Rasse, *Burnes, Travels Bokhara, ii. 208.*

Hab. India; Plains of Pamer, east of Bokhara, 16,000 feet above the sea level.—*Blyth.*

**Osteology.**


The skull named *Ovis Polii* in the Museum of the India Company, Leadenhall Street, which was sent from the Asiatic Society of Bengal, agrees with Blyth’s figure, and is probably one of the heads he describes as being in that Collection; the facial line is very convex.

The India Company received from Capt. Strachan (Dec. 1850) the skin, with head and horns, which exactly resembles the pair of horns and skull from the Bengal Society, and with Blyth’s figures; but it is evidently a variety of the Domestic Sheep covered with wool.

The animal does not agree with the *Katchgar* or Wild Sheep of *Wood’s Sources of the Oxus, 368*, quoted by Mr. Blyth in the *Journal of the Asiatic Society of Bengal.*


Kachar or Barwal Sheep, *Hodgson, J. A. S. B. i. 347.*


Barwall, *Ogilby in Royle’s Himal. i. 75.*

Hab. Nepal.


**Osteology.**

Skull, with horns, half-grown, imperfect. Nepal.

Two pair of horns of different ages. Nepal.

**Icon.**

Drawing of adult.—*Hodgson, MSS. ined. B. M. t. 179, t. 181. f. 2.*

The Hoonia or Black-faced Sheep of Tibet, *Hodgs. J. A. S. B.* xi. 284. t., young male.

Hooniah Sheep, *Ogilby in Royle’s Himal.* i. 75.

Hab. Nepal, Northern hilly region.

“Large tall breed, with slender, compressed, spirally twisted horns, and short narrow tails; wool white, superb; individuals have often three, four, and even five horns.”—*Hodgson.*

Osteology.

A skull of adult male, with horns.

Two skulls of young, without the cases of the horns.

Two skulls of many-horned variety, horns of each side arising from the same base, showing they are produced by the division of the core.

Two skulls of four-horned varieties, with horns separate from one another at the base (each wanting one sheath).

Icon.

Drawing of Hoonia Sheep, two varieties.—*Hodgson, Icon. ined.* B. M. t. 180, one copied t. 181. f. 1.

“Barwall and Hooniah Sheep are used as beasts of burden for carrying grain and other produce across the mountains.”—*Ogilby,* t. c. 74.


Cago Sheep, Gray, *List Hodgson Mam.* & *Birds B. M.*

Hab. Nepal, Central hilly region.

Osteology.

A skull of adult (without the sheath of the horns), imperfect.

A skull of the young, hornless.

Icon.

Drawing of male Cago or *Cajia Bhira,* female and young.—*Hodgson, Icon. ined.* B. M. t. 182.


Hab. Nepal, Central hilly region; Tibet, eastern.

A specimen with head and horns.

Icon.

Drawing of Silingia Sheep, male and female.—*Hodgson, Icon. ined.* B. M. t. 183.
7. Curumbar (Sheep), Buchanan, Mysore, ii. 277. t. 17 ♂ ♂. f. 42, 43.
   Wool thick, curly, with little or no hair. Ears small.
   Hab. India; Mysore.

8. The Sheep called Gārār, Buchanan Hamilton?, Icon. ined. Mus.
   Ind. Company, t. ♂ ♀.
   Hab. India.

   Legs short. Body throughout short, chaffron arched. Wool short, crisp and coarse, nine-tenths black, with a white streak from angle of the eyes to the mouth, and a white patch on crown. They are extensively bred; as many as 20,000 or 30,000 Sheep and Goats may be seen together in the uncultivated tracts of the Dukhun.
   Hab. Dukhun.


11. Brazilian Sheep, Gardiner, Travels Brazils, 163.
    Hab. Brazils.

    Hab. W. Africa.

A male. From the Gardens of the Zoological Society.


   O. Æthiopica, Charlet. Exerc. 9.
   O. Africana a, Sloane, Jam. ii. 328.
   Hab. Africa.

   A. longipes, Desm. Mam. 489.
   A. Guineensis seu Angolensis, Marg. Bras. 234. fig.
   Capra Mambrinus, Charlet. Exerc. 10.
   Adimmayn, Marmol. Afric. i. 39.
*Hab.* Africa.

Belier et Brebis des Indes, *Buffon, H. N. xi.* t. 35, 36; cop.
O. A. Guineaensis, *Schreb. Sauyth.* t. 294 a, b, c.
*Hab.* Guinea.

*Hab.* China?

18. Shaymbliar (Sheep), *Buchanan, Mysore,* ii. 277. t. 18. f. 44, 45 ε ?.
Wool very scanty, principally covered with reddish brown or
black hair.
*Hab.* India; Mysore.

White. Head and neck black or brown, covered with hair.
Tail slender at the tip, short, broad, and fat at the base.
*Hab.* Zeyla; entrance of Red Sea. Domestic at Mokha; Buck-
ingham.

12. 474.
*Hab.* Tripoli. Presented by Hamner Warrington, Esq.

*Hab.* St. Helena.

A lamb born in Enfield, from one of Mr. Warren’s flocks at
Enfield. Purchased of Mr. Argent, 1850. A true Sheep, very like a Goat, with a cylindrical tail.

326.
*Hab.* Marocco.

326.
*Hab.* Congo.

326.
*Hab.* Angola.

25. Zenu or Goitred Sheep, *Ovis Aries Steatinion, H. Smith,*
*Griff. A. K.* iv. 327. t. 196.
*Hab.* Angola.
   Ovis ——, sp., Blyth, P. Z. S. 1840, 12; 1843, 73; Ann. & Mag. N. H. vii. 255.
   Ovis ixalon, Sundevall, Pecora, 90.
   Ovis Aries var., Gray, Knowsley Menag. 40.

Mr. Ogilby made a genus of this skin, but it appears to be only a short-haired Sheep with rudimentary horns.

27. Cretan Sheep, Penn. Syn. 11. t. 3. f. 1; Hist. Quad. 33; Shaw, Zool. ii. t. 203.
   Ovis Strepsiceros, Раи Syn. 75; Linn. Syst. Nat. i. 98; Belon. Obs. 20. fig.
   O. A. Strepsiceros, Schreb. Saught. t. 291 a. b.
   O. Cretenesis, Jonst. Quad. t. 45.
   Capra Cretenensis, Brisson.
   Strepsiceros, Buffon, H. N. xi. 358.
   Belier et Brebis de Valachie, Buffon, H. N. Supp. iii. t. 7, 8.
   Zackl, Austrians.
   Wallachian Sheep, Bewick, Hist. Quad. 73. fig.
   Chèvre de Crète, Buffon, H. N.
   Hab. Island of Crete.

28. Long-tailed Sheep, Ovis longicaudatus, Brisson, R. A. 76.
   O. dolichura seu tscherkessica, Pallas, Spic. xi. 60.
   O. Arabica, Jonston, Quad. t. 23.
   Arabisch Schaf, Gesn. Thierb. 326. fig.
   Mouton à long queue, Munk. Palestine, t. 3.
   Hab. Russia.

   O. Turcica, Charlet. Exerc. 9.
   O. cauda obesa, Ludolf, Æth. 146. fig.
   Arabæ Oves, Aldrov. Bisulc. 404. fig.
   Mouton de Barbarie, Buffon, H. N. xi. 355. t. 33.
   Sheep, Russel, Aleppo, 51.
   Belier de Tunis, Ency. Méth. t. 47. f. 2.
   Hab. Barbary.
MAMMALIA.

   O. Steatopyga, Pallas, Spic. 55. t. 4. f. 1, 2; Schreb. Saugth. t. 292.
   O. Aries Kurgiesia, Gene, l. c.
   Tartarian Sheep, Bewick, Hist. Quad. 71. fig.


   Mouton à grosse queue, F. Cuvier, Mam. Lith. t.

d. The Aora fiyel, or Abyssinian Sheep.
   Hab. Abyssinia.

e. Bucharian Sheep, Ovis Bucharica, Pallas, Spic. xi. 78.
   Mouton d’Astrachan, Desm.
   Ovis Aries Astrachanica, Gene, Mem. Acad. Torino, xxxvii.
   Hab. Bucharia, Caucasus, and Persia.
   The skin of the unborn lambs with grey curled hair is much prized as a fur.

f. Thibetan Sheep, O. Thibetanus, Fischer, Syn. 491.
   Cachemerisches und Thibetanisches Schaf, Walth.
   Tus Aessel, Thibetian.
   Hab. Thibet.

g. Cape Sheep, Penn. Syn. t. 4. f. 2.
   Hab. Cape.


i. Sheep of Belkah, Buckingham, Trav. Arab. Tribes, 93.
   Body white. Head and neck black or brown. Covered with thick wool. Tail short, fat, broad, with a thin excrescence at the end like a pig-tail, about an inch long.
   Hab. Palestine; Plains of Belkah.
30. Many-horned Sheep, Penn. Syn. t. 3. f. 2, 3; Bewick, Hist. Quad. 72. fig.  
O. sexcornis et O. tricornis, Aldrov Bisulc. 397. fig.  
Brebis à plusieurs cornes, Buffon, H. N. xi. 354.  
Belier et Brebis d’Island, Buffon, H. N. xi. t. 31, 32.  
Dumba Sheep, Gray, List Hodgson Mam. & Birds B. M. Hab. India; Nepal.  

31. The Puchia or Hindostan Dumba.  
Cabul Dumba, Hodgson, l. c. ii. 390, iv. 330.  
Skull of a "Cabul Dumba" Sheep.  
Drawing of "Indian Doomba Sheep."—Hodgson, Icon. ined.  
B. M. t. 184. f. 1, copied t. 185. f. 1.  
Drawing of "Cabool Doomba Sheep."—Hodgson, Icon. ined.  
B. M. t. 184. f. 2, copied t. 185. f. 2.  
Four-horned Sheep, with long mane on neck below. Drawing in India ink, with a pencil sketch on the back.—Bank. Icon. Mam. t.  
Drawing in colours, by S. Parkinson, after nature.—Bank. Icon. Mam. t., copied Pennant, Quad. i. t. 3. f. 2.  
Drawing in colours, by F. Masson, in lat. 50°, long. 115°.—Bank. Icon. Mam. t.  
Hab. India.  

32. The Short-tailed Sheep.  
Hab. Northern Russia.  

33. Sheep of Tartary, Moorcroft; Lesson, Compl. Buffon, x. 313.  
Hab. Tartary.  
"Eat bones like a dog."

2. Caprovis. Moufflons or Wild Sheep.  


Ovis § Musimon, Gray, Knowsley Menag.
172

1. **Caprovis (Musimon) Vignei.** The Sha of Koch.

   Throat with a fringe of black hairs. Fur rufous brown. Lateral streak, rings on lower part of feet, blackish. Belly and back of shanks, and ring above hoofs, white. Skull: suborbital pit deep and rounded.


   ?Mountain Sheep, Lord in Burnes’ Cabool, 384; Ray Soc. Rep. i. 64.

   Ovis Musimon Vignei, Gray, Knowsley Menag.


   Sha (not Sna), in Little Thibet.

   Koch, at Suliman’s Range.

   Koh i poombar, by the Afghans.

   Hab. Thibet.

   Male. Ladank. Presented by the East India Company.

   Horns, with skin of forehead. Thibet?


   Skull and horns. North India. Presented by the East India Company.

   Horns, separate. North India. Presented by the East India Company.

   Horn, single. North India. Presented by the E. India Company.

   Skull. Thibet. From Mr. Argent’s Collection.

   Skull. Thibet. From Mr. Argent’s Collection.

   Horns. Thibet. From Mr. Argent’s Collection.

   Horns, separate. Thibet. From Mr. Argent’s Collection.

   Two skulls. Ladank. Presented by the East India Company.

2. **Caprovis (Musimon) Orientalis.** The Armenian Sheep.

   Fulvous chestnut, darker on the back. Limbs and under parts whitish. Tuft of black and white hair above the wrist. Males with a dark line of more or less elongated hair on front of neck, widening into a patch on the chest. “Horns of male subtrigonal, compressed and very deep, with strongly-marked angles, and cross striae, diverging backwards, with slight arcuation near the tips, which incline inwards.”—Blyth.
Ovis orientalis, Gmelin, Reise Russland, iii. 486. t. 55; Pallas, Spic. Zool. xii. 15. t. 5. f. 1, horns; Keyselín. Europ. Wirb.
Ovis Gmelinii, Blyth, P. Z. S. 1840, 69; Ann. & Mag. N. H. vii. 250. t. 5. f. 8, horns.
Ovis (Musimon) orientalis, Gray, Knowsley Menag. Hab. Armenia; Erzeroom.


Brown.
Hircus Capra orientalis, Brisson, R. A. 71 (not Gmelin).
Capra Amon (part.), Linn. S. N. i. 47.
Capra Ammon, Blumenb. Naturg. x. 117.
Ovis Ammon (part.), Erxll. Syst. 250; Gmelin, S. N. i. 200.
Ovis Musimon, Musimon, Gray, Knowsley Menag.
Ovis aries fera, Desm. Mamm. 488.
Ovis Musimon, H. Smith, Griffith A. K. v. 875; Bonap. Faun. Ital. i.
Capra Musmon, Fischer, Syn. Mam. 488; Bonap. Fauna Ital. 45. t. 1 ².
Mouflon or Musmon, Bewick, Quad. 74. fig.
Musmon or Musimon, Gesner, Quad. i. 823. fig.
Musimon, Rall Quad. 75.
Mouflone, Cette H. Sard. Quad. i. 111. t. 2 ³. t. 3 ³. ².
Mouflon, Buffon, H. N. xi. 352. t. 29; Cuvier, R. A. i. 262, ed. 2. i. 277; F. Cuvier, Mam. Lith. t.; Knight, Mus. A. Nat. f. 673, 674.
Wildes Scharf, Gesner, Thierb. 155. fig.
Muffione in Sardinia = Murvoni ³, Murva ², Blyth.
Muffòlo in Corsica = Mufro ³, Mufra ², Blyth. Hab. Sardinia and Corsica.

Var.? Horns more like O. orientalis, Blyth.
*Hab. Cyprus, Mus. Berlin; Candia, Bellon; Corsica.*

**Osteology.**  

b. Argali. Tail very short. Horns long, heavy, with the tips bent inwards, and with the two edges equally prominent. Throat and side without any dark streak. The suborbital pit in the skull is moderately broad and concave. "Tear-bag and interdigital pores distinct."—*Hodgson, J. A. Soc. Calcutta*, 1846, 308.

4. **Caprovis (Argali) Argali. The Argali.**  
Ovis fera Sibirica, Argali dicta, *Pallas, Spic. xi. 3. t. 1, 2.*  
Ovis Argali, *Bodd.*  
Capra Ammon, *part., Linn. S. N. i. 97.*  
Capra Ammon, *Fischer, Syn. 487; Cuvier, R. A.*  
Siberian Goat (part.), *Penn. Syn. i. 18 (Synonyma).*  
Wild Sheep (Siberian), *Penn. Quad. i. 38; Arctic Zool. i. 12.*  
Argali, *Shaw, Zool. ii. t. 101.*  
Argali de Sibérie, *Cuvier, Règ. Anim. i. 267.*  
*Hab. Siberia.*  
Male and female. Siberia.

**Osteology.** *Tilesius, l. c. xii. t. 23; Bojanus, l. c. xii. t. 24, 25.*  
*Hab.* Kamtschatka.

Var. 2. Ovis Argali, *Hodgson, J. A. S. Beng. i. 347.*  
Ovis Bambhera, *Hodgson, Cat. MSS.; Institute, n. 101, 102.*
Ovis Ammonoides, Hodgson, *J. A. S. Beng.* x. 1841, 236. t. 1. f. 1, skull; x. 913, xi. 283; *Calcutta Journ. N. Hist.* iv. 291;
Gray, Hodgson Coll. B. M. 29.
Bambhera (or Ovis Ammon), Ogilby in Royle's *Himal.* 75.
Bambhera or Bhaaral, Hodgson, MSS.

*Hab.* Himalaya; Nepal.

Fragments of the skin of a male.
A flat skin of a young male.
A flat skin of a female.
Skin of young, without head. Northern hill region of Nepal.
Presented by B. H. Hodgson, Esq.

Male. Ladank. Presented by the East India Company.

Two skulls. Ladank. Presented by the East India Company.

**Icon.**
The Bhaaral. Drawing of skull of young male.—*Hodgson, Icon. ined.* B. M. t. 186. f. 1, t. 187. f. 9, 10.
Drawing of male, female and young.—*Hodgson, Icon. ined.* B. M. t. 176, with details of the head, t. 177.
Drawing of head of adult.—*Hodgson, Icon. ined.* B. M. t. 178.
Drawing of skull of old male.—*Hodgson, Icon. ined.* B. M. t. 186. f. 3, 4.

"The Wild Sheep inhabit the snowy barriers of High Asia, *Ammon* of Siberia being confined to the remoter, and *Ammonoides* of Thibet to the nearer ranges. They are distinguished by their angular, compressed, nearly wrinkled horns, turned almost into a perfect circle, and their flat points directed forwards and outwards, the short-disked tail, and absence of a beard."—Hodgson.

The Wild Sheep proper, or *Nyens* of the Thibetans, never mix with the *Nahoors.* They are far more hardy, active and inde-
pendent than any tame breeds of their kind, as may well be sup-
posed from their terrific abode amid the snowy peaks of He-
machal. They are gregarious, feed in the glens, seek refuge on
the tops, and leap and run with deer-like power, though as climb-
ers inferior to the Jharal (*Hemitragus*), or as leapers to the Musk.
They are often snowed up for days without perishing, unless
their breathing-holes betray them to man, a more terrible foe
than the direst inclemency of the season. They rut in winter,
gestate about 160 days, or perhaps six months, and breed early
in summer.

The *Nyens* or *Bambheras*, or Wild Sheep, seldom or never
cross the Hemachal, the Indian side of which range is the spe-
cial habitat of the *Nahoors*, while to the north and west beyond
Thibet our animal is replaced by other species, so that Thibet
may be considered as the special habitat of one species (*O. Am-
monides*), and the plateaux north of Thibet as far as the Altai
of another (*O. Ammon*), cited as types of the true ovine form;
and it may be added, that the six sorts of tame Sheep of Thibet
and the sub-Himalayas, all without exception exhibit the essen-
tial characters of that form.

There are several species that may be confounded under this
head; the Siberian *Argali* is found in the most northern part
of that country, and it is probably different from the Himalayan
animal; but I have not been able to discover any difference be-
tween the specimen received from Mr. Hodgson and those which
were sent from Siberia by the Russian naturalist.

Pallas regards this and the next as one species, and observes:
—"Nobilissimum et statura et agilitate animal ab Altaico et Me-
dio Asiae alpestri jugo; per omnem orientalem montium tractum
usque in Peninsula Camtschatcam imo verosimiliimine in Conti-
nente America locis maxime desertis vagatur, parvis gregibus
hominis frequentiam fugiens, frigoris patiens, montibus apricis
gaudens et asperrima loca frequentans. In occidentem vix pro-
cessit, ubi precedenti speciei (*Caprovis orientalis*), australiores

5. *Caprovis (Argali) Canadensis*. The Taye or Big
Horn.

Grey-brown. Hair thin (in summer). Rump with a very large
white disk, with a narrow vertical line to the base of the tail, it
and the very short tail grey-brown like the back. Horns of male
very large, subtrigonal at the base, ringed, nearly equilaterally
triangular, bulging a little between the angles; the inner front
angle obtusely prominent, the hinder double, forming a second
plane at a slight angle with the superior one, and the inferior
angle much rounded off.

Ovis Ammon, Harlan, Fauna Amer. 259.

Ovis Pygarga, H. Smith, Griffith A. K.


Richardson, Fauna Bor. Amer. t. 23; Lesson, Compl. Buffon, x. 311.

The Argali, Godman, Nat. Hist. ii. 329. t. 1; Cook, Voy.

Rocky Mountain Sheep, Richardson.

White Buffalo, Mackenzie.

Big Horn, Lewis & Clerk, Travels.


Berindo, Forbes, California.

Wild Sheep, Venegos, California.

Missiliones, M. A. Pigafette in Ramusium, i. 354 b, iii. 361 b.

Hab. N. America; California.

Male. California. Presented by Capt. Fitzroy, R.N.


Probably the same as the Ammon of Northern Siberia.


3. Pseudois.

Horns smooth, subcylindrical, directed towards the sides (nearly at right angles with the axis of the body), and recurved backwards at the tip, with a distinct longitudinal ridge on inner side. Forehead convex. Neck not maned. Tear-bag none. Interdigital pores distinct. Body covered with hair, dark lateral streak distinct. Tail well developed, not tufted at the end. Skull without any infraorbital pit or fissure. Females sometimes hornless.


Ovis β, Sundevall, Pecora, 90.

1. Pseudois Nahoor. The Nahoor or Nervate or Sna.

Ovis Nahura, Hodgs.; Gray, Cat. Mamm. 170.

O. Nayaur, Hodgs. J. A. S. B. i. 347.
MAMMALIA.


O. Thur, non var., Hodgs. P. Z. S. 1833, 105; 1834, 99?

Nepal Ram or Nervate, Hardw. Icon. ined. B. M. 10,975. t. 194, horns.

Ovis Ammon (part.), Richardson, Fauna Bor. Amer. i. 274.


Burrhal or Nahoor, Ogilby in Royle’s Himal, i. 75.


Female. Nepal.
Female, horns directed on one side. Nepal.
Horns of male on base. Nepal.
Horns of male on base. Nepal.

Male. Ladank. Presented by the East India Company.

Osteology.

Base of skull of male, with horns. Nepal.


Horns.
Skull. India. From Mr. Argent’s Collection.
Horns. India. From Mr. Argent’s Collection.
Two single horns. India. From Mr. Argent’s Collection.

Var. 1. Smaller, more robust, with shorter ears and very dark horns, without white.


Ovis Burrhel, Blyth, P. Z. S. 1840, 67; Ann. & Mag. N. H. vii. 248. t. 5. f. 7, horns; Sundevall, Pecora, 90.

Pseudois Burhal, Hodgson, J. A. S. Bengal, 1846, 308.

Hab. Barenta Pass.

The Nahoor inhabit the Himalayas; they are distinguished from the Sheep by the want of the eye-pits; the rounded, uncom-
pressed, smooth horns, directed upwards and backwards with
great divergency, and with their round points again bent inwards;
by their short, deer-like tail, which is rather longer than that of
the Wild Sheep and not disked. They rut in winter, gestate 5½
months, and breed in the summer.

Their habits resemble those of the Nyens or Wild Sheep, but
the two never commingle nor approach each other, nor will the
male, however long and completely they are tamed, have sexual
commerce with domestic Sheep. Ribs 13 pair.—Hodgson.

The Nahoor is much less easily acclimatized in foreign parts
than the Jharal, in confinement more resigned and apathetic.
I have tried in vain to make the Nahoor breed with tame Sheep.
because he will not copulate with them.—Hodgson, J. A. S. B.
v. 493.

4. Ammotragus.

Forehead concave. Crumen none. Horns subcylindrical,
turning outward backward, with the tips inward towards each
other. Chin not bearded. Neck maned beneath. Tail rather
elongate, tufted at the end. Skull with no suborbital pit nor
fissure.

Pseudois, sp., Hodgson.
Ammotragus, Blyth; Gray, Knowsley Menag.
Ovis § γ, Sundevall, Pecora, 90.

1. Ammotragus Tragelaphus.

258. 261; Gray, List Mamm. B. M. 169; List Osteol. B. M. 61.
264; Lesson, Comp. Buffon, x. 312.

Capra Jaela, H. Smith, Griffith A. K. t. 192, not text.
Ammotragus Tragelaphus, Gray, Knowsley Menag. 40.
Mouflon d’Afrique, Cuv. R. A. i. 268; F. Cuvier, Mam. Lithog. t.
Bearded Sheep, Penn. Quad. i. 46.
Siberian Goat, Penn. Syn. Quad. i. 18 (the skin described as
from India, not synon.).
Tragelaphus seu Hircocervus, Caii Opusc. 59.
Aoudad, Jackson, Morocco; Knight, Mus. Anim. Nat. f. 671.
Fichtall or Lerwea, Shaw, Trav. 243.
Antilope Lervia, Pallas, Spic. xii. 12; Gmelin, S. N. i. 182;
Fischer, Syn. 480.

Hab. N. Africa.

Bad state. North Africa.
Osteology.

Horns.

Pennant, in his Synopsis, i. 18, confounded this animal with the Musimon; and Pallas (Zool. Ross. Asiat. i. 230) on his authority gave India as the habitat of the latter, but the subgenus was not known to inhabit the Himalaya at that period.

Tribe 2. Giraffina.

Horns covered with a hairy skin, with a tuft of hair at the tip.

Camelopardina, Gray, Ann. Phil. 1825; Cat. Mamm. B. M. xxvi.
Camelopardalis, Cuv. Tab. Elem. 1798.
Devexa, Illiger, Prod. 104, 1811.
Plenicornia b, Latr. Fam. Nat. 1821.
Camelopardalidae, Selys Longchamps, 1842.
Elaphiens, part., Pomet. l. c. 184.
Ruminantia B. Pygnocerate, part., Brown, Index Palaeont. ii. 709.
Camel β, Wagler, N. Syst. Amph. 4-31, 1830.
Cervidæ (part.), Ogilby, P. Z. S. 1836, 134.
Cervicornia §, Sundevall, Pecora, 52.
Unguligrada, part., Sundevall, Pecora, 52.
Camelopardalina, Sundevall, Pecora, 52.
Camelopardineæ, Lesson, N. Tab. R. A. 168, 1842.

1. Giraffa.


Giraffa, Brisson, R. A. i. 37, 1763; Storr, 1780; Scopoli; Rafinesque, Anal. Nat. 56, 1815.
Cervus, sp., Linn. S. N. ed. 12. 92; Erxleb. S. A. 294, 1777.
Camelopardalis, Ray, Syn. 90; Aldrov.; Cuvier, Tab. Elem. 1798; Schreb. Saugth.; Lesson, N. Tab. R. A. 168; Desm. 1804; Illiger, 1811; Ogilby, P. Z. S. 1836, 134; J. Brookes, Cat. Mus. 63; F. Cuvier, D. S. N. lix. 513; Fischer, Syn. 455.
Camelopardalus, Charlet.
Giraffe, Penn. Hist. Quad. i. 58.


Cervus Camelopardalis, Linn. S. N. i. 92; Erxleb. Syst. 294.
Camelopardalis Giraffa a, Sundevall, Pecora, 52.

Var. 1. Paler.
Camelopardalis Girafa ß. Æthiopica, Sundevall, Pecora, 52; Act. Stockh. 1842, 244.
Camelopardalis Sennaarenbois, Geoff.
Camelopardalis Æthiopicus, Ogilby, P. Z. S. 1836, 134.
Camelopardalis, Plin. H. N. viii.; Gesner, Quad. 160. fig.; Alpin. Æg. i. 236. t. 14. f. 4.
Camelopardalis, Jonst. Quad. t. 39; Cateret, Phil. Trans. lx. 27. t. 1.
Camelus Indicus, Jonst. Quad. t. 40.
Gyraffe, Belon. Obs. 118. fig. 119.
Tragus Giraffa, Klein, Quad. 22.
Camelopord, Penn. Syn. 10; Quad. i. 65. f. 11.
Kamel paard, Vosmaer. Besch. t. 1787.
Giraffe, Thevet. Cosmogr. i. 388. fig. 389; Buffon, H. N. xiii. 1; Supp. iii. 320. t. 64, 65; vii. 345. t. 81; Levaill. Trav. t; Shaw, Zool. ii. 303. t. 181, 182; Lichtenst. Reise, ii. 451, 463; Clot Bey, Acad. Sci. Pétersb. vi. 6 (anat.).
Giraffe or Cameleopard, Harris, W. A. S. A. t. 11, and head; Thibaut, Proc. Z. S. 1836.

Hab. Africa; Cape of Good Hope; Æthiopia; Sennaar. West Africa; Senegal and Bornou.

Male (16 feet high) and female. S. Africa. Presented by W. Burchell, Esq., LL.D.


Skull of male. South Africa. Presented by Dr. Burchell.

*Skeleton. N. Africa. From the Zoological Society’s Collection.

Mr. Wahlenberg has seen the dark and light coloured varieties mixed together in the same herd in tropical parts of Africa. The males are generally dark and the females pale, but this is not always the case. He has sent to Stockholm the skin of a female from Caffreland, which is as pale as the specimens from Sennaar.”—Sundevall in a Letter, 1850.

Subfamily II. Horns deciduous, covered when young with a deciduous hairy skin, or entirely wanting.

Tribe 3. Cervina.


Cervus, Linn.; Cuv. T. E. 1798.


Cervina, Gray, Ann. Phil. 1825; Cat. Mamm. B. M. xxvii.

Plenicornia a, Latr. Fam. Nat. 63, 1825.

Cervidae, H. Smith, Griff. A. K. v. 182; Selys Longchamps, 1842.

Cervina, Selys Longchamps, 1842; Wiegm.; Cabais in R. Schomburgk, Reisen in British Guiana, iii. 784.

Elaphiens, Pomet. l. c. 184.

Les Chevrotains et Les Cerfs, F. Cuv. 1829.

Ruminantia B. Pygnocerate, part., Bronn, Index Palæon. ii. 709.


M. Bravard divides the Fossil Deer of Puy du Dôme into two subgenera, thus:—1. Catoglochis, with the lower anterior snag on the crown.  2. Anoglochis, with it above the crown.—Fide Lesson, Hist. Nat. Mamm. 1836, p. 259.


Colonel Hamilton Smith has adopted the section proposed by De Blainville; he regarded them as sections or subgenera, and gave them the following Latin names:—1. Alces.  2. Rangifer.  3. Dama.  4. Elaphus.  5. Rusa.  6. Axis.  7. Capreolus.  8. Mazama.  9. Subulo.  10. Stylocerus.—Griffith, A. K. v. 1827; translated Fischer, Syn. Mam. ii. 612, 1830; and Lesson, Compl. Buffon Mamm. x. 259, 1836.


Mr. Gray, in the Proceedings of the Zoological Society (1836, 67), proposed to arrange the species of Deer into three sections, according to the position of certain tufts of hair on the hind-legs, thus:—1. A tuft of hair below the middle of the outside of the metatarsus.  2. Above the middle of the outside of the metatarsus; and 3. With a tuft of hair on the inside of the hock. Dr. Sundevall in his Pecora has adopted these divisions. These tufts have the advantage of being found in all ages and in both sexes, so that they can be consulted when the horns are deficient.

MAMMALIA.


M. Puchean, in his "Monographie des espèces du Genre Cerf" (Comptes Rendus Acad. Sci. 1849, ii. 775), divides the tribe Cerviens into four genera:—1. Alces. 2. Tarandus. 3. Cervulus; and 4. Cervus.

Since the publication of Cuvier's Essay on Deer (Ossemens Fossiles, iv.), where he exhibited the development of the horns of several species, and in which he described several species from the study of the horns alone, many zoologists have almost entirely depended on the horns for the character of the species; and Mr. Hamilton Smith has been induced to separate some species on the study of a single horn. But the facilities which menageries have afforded of studying these animals, and watching the variations which the horns of the species present, have shown that several most distinct but allied species, as the Stag of Canada and India, have horns so similar, that it is impossible to distinguish them by their horns. On the other hand, it has shown that animals of the same herd, or even family, and sometimes even the same specimen, under different circumstances, in succeeding years have produced horns so unlike one another in size and form, that they might have been considered, if their history was not known, as horns of very different species. These observations, and the examination of the different cargoes of foreign horn which are imported for the uses of the cutler, each cargo of which is generally collected in a single locality, and therefore would most probably belong to a single species peculiar to the district, have proved to me that the horns afford a much better character to separate the species into groups than to distinguish the allied species from one another.

Colonel Hamilton Smith, in his Monograph of the Genus, separated them into genera according to the form of the horns.

In the Proceedings of the Zoological Society for 1836 I drew attention to the glands on the hind-legs, as affording very good character to arrange the genera proposed by Colonel Smith into natural groups, which in most particulars agreed with the geographical distribution of the species.

Dr. Sundevall, in his Essay on Pecora, has availed himself of the characters suggested in my paper, and has also pointed out some other external characters, such as the form and extent of the muffle, which afford good characters for the distinction of these animals, characters which, I firmly believe, are much more
important for the distinction of the genera and species than those
derived from the form of the skull or the modifications of the
teeth, or the form and size of the horns, as they are not, like
those parts, so liable to alteration from age, local circumstances,
and other changes during the growth of the animal; and the
characters derived from these parts can be seen in the females as
well as the males, which is not the case with the horns, as they
can only be observed in the male sex.

These examinations have shown that the form and extent of
the muffle, the position and presence of glands on the hind-
legs, the general form of the horns, and the kind of hair which
forms the fur, taken together, afford the best characters for the
arrangement of the species into natural genera, and these genera
into groups. And I believe that the progress of zoology, and
the natural arrangement and affinities of animals, are best pro-
 moted by the general study of all the parts of the animal taken
together, rather than confining one’s attention to any set of charac-
ters, and believing them as much more important than the others.

The Deer may be thus divided:—

A. The Deer of the Snowy Regions have a very broad muzzle en-
tirely covered with hair. The horns are expanded and pal-
mate; and the fawns are not spotted.

a. The Alcine Deer have no basal anterior snag to the horns,
and a small bald muffle between the nostrils, as the genus
Alcis.

b. The Rangerine Deer have a large, basal anterior snag to the
horns, close on the crown or bur, and no muffle, as Tarandus.

B. The Deer of the Temperate or Warm Regions have a tapering
muzzle ending in a bald muffle. The fawns, and sometimes
the adults, are spotted.

c. The Elaphine Deer have a distinct, anterior basal snag to the
horns, the muffle broad and separated from the lip by a
hairy band, and the tuft of hair on the outside of the hind
leg above the middle of the metatarsus, as Cervus and Dama.

d. The Rusine Deer have a distinct, anterior basal snag to the
horns, the muffle very high and not separate from the edge
of the lips, and the tuft of hair on the outside of the hind
leg above the middle of the metatarsus, as Recervus, Pa-
nolia, Rusa, Azis, Hyelaphus, Cervulus.

e. The Capreoline Deer have no basal anterior snag to the horns,
the first branch being some distance above the bur, the cru-
men (and pit in the skull) generally small, as Capreolus,
Cariacus, Blastocerus, Furcifer, Coassus, and Pudu.
The Alcine and Rangerine Deer are confined to the northern part of both continents; the Elaphine and Rusine Deer to the Eastern World (the latter almost exclusive to the warmer part of Asia). All the Capreoline Deer are peculiar to America. The only exceptions to these rules are, the Wapity Deer of the Elaphine group is found in Northern America, and the Roebuck and Ahu of the Capreoline group are found in Europe and North Asia.


1. Alcine Deer (Alceæ). Horns without any basal snag near the crown. Muzzle with a small bald muffle between the nostrils.


1. Alces.

Alce, H. Smith.

Muzzle very broad, produced, and covered with hair, but there is a small, moist, naked spot in front of the nostrils. Neck short and thick. Hair thick and brittle. Throat rather maned in both sexes. Hind-legs have the tuft of hair rather above the middle of the metatarsus. Males have palmated horns, subcylindrical at the base, expanded and palmated above, without any basal snag. The nose-cavity in the skull is very large, reaching behind to a line over the front of the grinders. The intermaxillaries are very long, but do not reach to the nasal. The nasals are very short.—See Cuv. Oss. Foss. iv. t. 9. f. 49.

They live in woods in the northern parts of both continents.

MAMMALIA.

1. **Alces Malchis.** The Elk or Moose.

Dark brown. Legs yellower.


Cervus Alces Alces, H. Smith, Griffith A. K. v. 771.

Alces (Cervus) Alces, Sundevall, Pecora, 54.

Alces Malchis, Ogilby, P. Z. S. 1836, 135.

Alces palmatus, Gray, List Mam. B. M. 182; Cat. Osteol. B. 70.

Alces Europeus, J. Brookes, Mus. Cat. 61.

Moose Deer, Dudley, Phil. Trans. n. 368. 165; Dale, Phil. Trans. n. 444. 384.

Moose or Elk, Catesby, Carol. App. 27.

Elk, Laws. Carol. 123; Penn. Syn. 40. t. 7; Quad. i. 105. t. 17; Shaw, Mus. Lever. i. 33. t. 8; Gen. Zool. ii. 261. t. 174, 175; Knight, Mus. A. N. f. 585, 586, 605.

Elan, Buffon, H. N. xii. 79. t. 7; Supp. vii. 318. t. 80; Perrault, Anim. i. 179. t. 25; Cuvier, R. A. i. 254; Oss. Foss. iv. 64.

Original, La. Houtan, Voy. 72; Charlev. Nouv. France, iii. 126; Dierville, Acad. 122; Allam, Buff. H. N. xv. 50. t. 2; Buffon, Supp. iii. 133; Fischer, Syn. 441. 613.


Loss, Russians in Siberia.

Flat-horned Elk, Jeffers. Notes Virginia, 49.

Cervus palmatus Alce, Klein, Quad. 577. t. 28 d.

Alces, Casar, Bell. Gall. vi. c. 27; Gesner, Quad. i. fig. 2. fig.

Jonston, Quad. 92. t. 30, 31.


Female, adult. N. Europe. Presented by the Earl of Derby.

Head, stuffed, with horns. Russia. Presented by Edward Cayley, Esq.

**Osteology.**

Elan, Daub. Buff. H. N. xii. t. 8, 9; Cuvier, Oss. Foss. iv. 64. t. 4. f. 22-29, t. 6. f. 8, t. 5. f. 49, 1/3th.

Moose Deer, Dale, Phil. Trans. n. 444. 384. fig.

C. alces, Schreb. Sauith. t. 246. f. b.
Horns. Sweden. Presented by the College of Surgeons. From the Leverian Museum. Fig. Shaw, Mus. Lev. t. 8.

Skeletonts of male and female. From the Zoological Society's Collection.

Two skulls. From the Zoological Society's Collection.

Several pair of horns.

Two single horns of young.


ICON.

American Moose Deer, drawing of horns in India ink, by S. Parkinson.—Bank. Icon. ined. B. M. Mammalia, t.

Several naturalists, especially Colonel Hamilton Smith, thought they had observed a difference in the horns of the Russian and American Elks; I have compared numerous specimens from both countries, but can discover no appreciable distinction between them.

The Elks, like most of the other Deer, and especially of the animals which inhabit the cold and mountain regions, present a very considerable difference in size, according to the scarcity or abundance of the food which the locality they inhabit affords; and the development of the horns appears to be greatly influenced by this cause, so that the horns of the animal inhabiting the more barren districts are much less developed than those found in more fertile situations, and I think I have observed this to be the case with both the Russian and the American horns; but on this head naturalists are likely to be much misled, as the horns which are imported are generally chosen for their size and perfect development, and the small and less-developed specimens are only to be observed in the cargoes of horns which are imported for economic purposes.

These observations are equally applicable to the Rein Deer.

2. Rangerine Deer or Reins. Horns with a large, basal, anterior branch on the crown. Muzzle entirely hairy, without any naked muffle.

The Rangerine Deer, Gray, Ann. & Mag. N. H. 1850; Knowsley Menag.

Catoglochis, sp., Bravard.

Raugiferinidae, J. Brookes, Mus. Cat. 61, 1828.

1. Tarandus.

The muzzle is entirely covered with hair. Crumen small, co-
vered with a pencil of hairs. The fur brittle, in summer short, in winter longer, whiter; of the throat longest. The hoofs are broad, depressed, and bent in at the tip. The external metatarsal gland above the middle of the leg. Horns in both sexes, elongate, subcylindrical, with the basal branches and tip dilated and palmated; of the females smaller. Skull with rather large nose-cavity, at least half as long as the distance to the first grinder; the intermaxillary moderate, nearly reaching to the nasal; a small, very shallow suborbital pit; a very large, oblong, deep fissure. They live in the arctic regions in both hemispheres, migrating in flocks, and eating lichens.

Rangifer, Lesson, Mamm. i. 260; N. Tab. R. A. 169, 1842; Gray, List Mamm. B. M. 181; Cat. Osteol. B. M. 69; Sundevall, Pecora, 64, 113, 131.

Tarandus, Ogilby, P. Z. S. 1836, 134.

1. Tarandus rangifer. The Caribou Rein Deer.

Dark brown in summer; grey in winter. Young, brown yellow varied.


Cervus rangifer, Raii Syn. 88; Klein, Quad. 23. t. 1; Brisson, R. A. 92.

Capræa Groenlandica, Raii Syn. 90.
Cervus platyrhynchos, Vrolich, Rendier, t. 2, 1828.
Cervus coronatus, Geoff. MSS. in Schreb. Saurth. 1135; Desm. Mamm. 439; Fischer, Syn. 613; H. Smith, Griffith A. K. v. 772; iv. 95. t. f. 4.

Rangifer Tarandus, Gray, List Mamm. B. M. 181; Cat. Osteol. B. M. 69; Sundevall, Pecora, 54.
Cervus mirabilis, Jonston, Quad. t. 36.
Cervus palmatus, Jonston, Quad. t. 37.
Cervus cornibus rectis, &c., Caribou, Brisson, R. A. 91.
Rentier, Strals. Magaz. i. 394. t. 1; Wildung, Taschenb. f. 1805.
Renhirsch, Mellin, Schrift. Berlin Naturf. Fr. i. 1. t. 2; iv. 128. t. 5.
Rein Deer, Penn. Syn. 46. 36. t. 8. f. 1; Quad. i. 99. t. 10. f. 2; Knight, M. A. N. f. 587–590; Shaw, Zool. ii. 269. t. 176; Brooke, Edinb. New Phil. Journ. 1827, 30.
Caribou, Sagard. Theodat. Canad. 751; Buffon, H. N. xv. 50. t. 3. Renn, Buffon, H. N. xii. 79. t. 10, 11, 12; Supp. iii. t. 18*.
Renn Thier, Eversmann, Bull. de Moscou, 1840, 58.
Rhenne, Cuvier, R. A. i. 254; Oss. Foss. iv. 61. t. 4. f. 1–18, t. 5. f. 47.
Caribou or Carreboeuf, French Canadians.
Oleen, Russians in Siberia.
Greenland Buck, Edwards, Birds, i. t. 51, young.
Hirsch, Martin, Spitzb. 72. t. O. f. 2, young.

Var. Smaller. Horns more slender, less palmated. Hair short, smooth, close, brown, with throat and belly white; in summer hair very close, thick, waved, brittle and erect, and white in winter.

Cervus Tarandus Americanus, H. Smith, Griffith A. K. v. 773?; Fischer, Syn. 615?
Cervus Tarandus a. Arctica, Barren Ground Caribou, Richardson, Fauna Bor. Amer. 241. fig. 240, horns.
Common Deer, Hearne, Journ. 195. 208.

1. Woodland Caribou, Richardson.
   Caribou des Bois, H. Smith, G. A. K.

2. Great Caribou of the Rocky Mountains, H. Smith.

3. Labrador or Polar Caribou, H. Smith.

4. Siberian Rein Deer (ridden by the Tungusians).
5. Newfoundland Caribou.

Hab. Arctic Circle, America and Europe.


Adult male, dark brown. Hudson's Bay. Presented by the Hudson's Bay Company.

Male, nearly white. Hudson's Bay. Presented by the Hudson's Bay Company.

Female, dark brown. Hudson's Bay. Presented by the Hudson's Bay Company.

Female, nearly white. Hudson's Bay. Presented by the Hudson's Bay Company.

Two, very young. Hudson's Bay. Presented by the Hudson's Bay Company.


Young. Bred at the Zoological Gardens.

Osteology.

Renne, Dauw. Buff. H. N. xii. t. 10, 11, 12; Cuvier, Oss. Foss. iv. 61. t. 4. f. 1-18, t. 5. f. 47, skull ¼.

C. Tarandus, Schreb. Sauyth. t. 248 a, c, d.

C. rangifera, Klein, Quad. t. 1. fig.


a. Skull, large; horns small, slender branches small subulate, middle branch largest.

b. Skull and horns large, long, slender (Cuv. Oss. Foss. t. 4. f. 20); no basal branch to right horn.

c. Skull and horns; horns large, long, slender, apex broad, branched behind, no basal branch to right horn.

d. Horns, middle-sized, the lower branch of left elongate, forked; of right horn very broad, palmated. North America. Presented by Captain Sir John Franklin, R.N.

e. Horns, small; the lower and middle branch of right horn confluent, palmated. North America. Presented by Captain Sir John Franklin, R.N.

f. Horns, large (Cuv. Oss. Foss. t. 4. f. 17); basal branch of left horn large, palmated; of right smaller, lobed.

g. Horns, large (Cuv. Oss. Foss. t. 4. f. 9); basal branch of left horn very large, palmated; of right simple, subulate. Siberia?

h. Horns, long, elongated, slender, erect; lower branches elongate, lobed, top broad, lobed.
i. Horn, middle-sized (Cuv. Oss. Foss. t. 4. f. 8); lower branch of left horn simple; of right broad, palmated. North America. Presented by Captain Sir John Franklin, R.N.


k. Horns, large, long, slender (Cuv. Oss. Foss. t. 4. f. 13). Presented by Captain Sir John Franklin, R.N.

l. Horns, very small, basal branch subulate, upper and medial branch bifid.

m. Horns, large, with the basal branch of each horn dilated, palmated (Cuv. Oss. Foss. t. 4. f. 17). From Mr. Brookes's Museum.


Horns of the year.
Horns, very large, with the head stuffed. Newfoundland.

Varies exceedingly in size. In the British Museum there are specimens varying from 41 to 50 inches high at the withers.

Dr. Richardson observes, "There are two well-marked and permanent varieties of Caribou that inhabit the fur countries: one of them (Woodland Caribou) confined to the woody and more southern district; and the other (Barren Ground Caribou) retiring to the woods only in the winter, but passing the summer on the coast of the Arctic Seas, or on the Barren Grounds so often mentioned in this work."—Faun. Bor. Amer. 299.

The large Siberian variety is ridden on by the Tungusians; they also use them for draught, as the Laplanders do the smaller variety.

They have a large variety in Newfoundland nearly as large as an heifer. They have very large and heavy horns. There are some horns of this variety in the British Museum. Dr. Midden-dorf informed me that the horns of the large Siberian variety were as large and greatly resembled the horns from Newfoundland (Nova Scotia) in the Museum Collection.


In winter the hair of the Rein Deer is long, thick, grey-brown; neck, rump, belly, ring round the hoof, and end of nose, white. In summer the same animal has short, dark sooty-brown hair, with the parts which are white in winter being rather paler grey-brown.
II. The Deer of the Temperate or Warm Regions. *Muzzle tapering, ending in a bald, moist muffle. Fawn (and sometimes the adult) spotted. Skull with a moderate nose-hole. Intermaxillaries reaching to the nasol. Tail well developed. Crumen and suborbital pit in skull distinct. The spots of the young generally disappear in the adult, or are only to be seen when the animals are in high condition. The fur is shorter and brighter in summer, and greyer in winter.*


*Cervus, Sundevall, Pecora, 54.*

3. The Elaphine Deer. *Horns with a distinct anterior basal snag close on the crown. Muzzle broad, shallow, separated from the upper lip by a hairy band, with only a narrow interruption in front. External metatarsal gland above the middle of the bone. Skull with a large, deep suborbital pit.*


*Catoglochis (part.), Bravard, Foss. du Dome.*

Cervus § 1. (C. Veteris orbis), *Sundevall, Pecora, 54.*

*Elaphidæ, J. Brookes, Mus. Cat. 61, 1828.*

1. CERVUS.

Horns round, erect, with an anterior basal snag, a medial anterior snag, with the apex divided into one or more branches, according to the age of the animal. Crumen well-developed. Hoofs narrow, triangular, compressed, covered with brittle, opaque hair. The rump is generally ornamented with a pale mark. Skull with a large, deep suborbital pit. Horns with one or two branches on the middle of the front of the beam.


*Cervus (Elaphus), Ogilby, P. Z. S. 1836, 135.*

*Cervus § 1. a. (C. nobilis), Sundevall, Pecora, 55.*


*Elaphus, J. Brookes, Cat. Mus. 61.*


1. CERVUS CANADENSIS. The Wapiti.

Red brown. Rump with a very large, pale disk extending far above the base of the tail, and with a black streak on each side
of it. Male with hair of throat elongated, black, with reddish tips.

Stag, Dale, Phil. Trans. n. 444. 384.

Cerf de Canada, Perr. Anim. ii. 55. t. 45? (no rump disk); Cuvier, R. A. i. 256; Oss. Foss. iv. 26. t. 3. f. 13–22.


Elaphus Canadensis, J. Brookes, Cat. Mus. 62.

Cervus Elaphus var. Canadensis, Erxl. Syst. 305; Gmelin, S. N. i. 176.

Cervus Strongyloceros, Schreb. t. 247; Rich. Faun. Bor. Amer. 251; Sundevall, Pecora, 55.

C. Major, Ord in Desm. Mam. 432.


American Elk, Bewick, Quad.


Stag of Carolina, Lawson, Carol. 123.

Stag of America, Catesby, Carol. App. 28.

Alces Amer. corn. teretibus, Jeffers. Notes Virginia, 57, 1788.

Var.? Smaller.

Red Deer (or Canadian Stag), Warden, Etats Unis, v. 637.

Elk, Lewis & Clerk.

Stag, Penn. Act. Zool. i. 27.

Wewaskiss, Hearne, Journ. 360.

Hab. North America.

Young. N. America. Born at the Surrey Zoological Gardens.


Osteology.


Cerf, Perrault, Anim. ii. 65. f. 45.

C. strongyloceros, Schreb. Saugth. t. 247 g.

Horns, long, two lower branches near together. North America.

Horns, small, two lower branches rather near. North America.

Horns, large, beams without the upper frontal branches, the tip of right horn subpalmate (perhaps a different species).

The American Elk still exists on the upper branches of the Susquehanna River, and thence westward may occasionally be found in all favourable situations to the Pacific Ocean. Those observed on the mountains south of the Columbia River were of unusual size.—Peale.

Var. Smaller.

Hab. Plains of California and the upper parts of the Missouri River, in large herds.

The Elks in California are very abundant; they are not generally so large as those inhabiting the mountain districts, but we can find no specific character to separate one from the other.—Peale.


Brown. Rump with a pale spot extending rather above the upper surface of the base of the tail.


Elaphus communis, J. Brookes, Cat. Mus. 61, 1828.

Cervus nobilis, Klein, Quad. 23.

Cervus, Plinii Hist. Nat. viii. c. 32; Gesner, Quad. 354. fig.; Agricola, des Hirchen, &c. 1603; Aldrov. Bisulc. 769. fig. 774; Grabæ Elaphographiae, 1667; Hill, Animal. 577. t. 28; Brisson, R. A. 86.

“Ελάφος, Aristot. Hist. Anim. ii. c. 7. n. 37; Aëlian, Anim. vi. c. 11, 15; Oppian, Cyne. ii. 176.

Stag or Red Deer, Penn. Brit. Zool. i. 34; Syn. 49; Quad. i. 114; Shaw, Zool. ii. 276. t. 117.

Biche, Buffon, H. N. vi. t. 10.

Faon du Cerf, Buffon, H. N. vi. t. 12.

Cerf, Buffon, H. N. vi. 65. t. 9.
MAMMALIA.

Cerf commun, Cuvier, R. A. i. 255; Oss. Foss. iv. 24. t. 3. f. 1-12; F. Cuv. Mam. Lith. t.

Hirsch, Riding, Jagdb. Th. t. 4, 5; Meyer, Thiere, i. t. 22; Wildunger, Taschenb. 1794, i. t. l. f. 2, 3; Schrank, Faun. Boic. i. 41.

Rothhirch, Bechstein, Naturg. Deutschl. 453.

Cervus Elephas Hippelaphus, Erxl. Syst. 304; Fischer, Syn. 447 (Old male. Neck rather maned).

C. Elaphus β, Gmelin, S. N. i. 176.

Cervus Germanicus, Brisson, R. A. 37.

Tragelaphus, Gesner, Quad. 296 c. fig.

Hippelaphus, Jonston, Quad. t. 35.

Brandhirsch, Gesner, Thier. 119. fig.

Pferdhirsch, Gesner, Thier. 210. fig.

Cerf d’Ardenne, French Authors.

Hab. Europe.

Male (not good state). Knowsley. Presented by the Earl of Derby.

Adult female. France.

Fawn. France.

OSTEOLGY.

Cerf, Buffon, H. N. vi. t. 13, 14, 18-25; Cuvier, Oss. Foss. iv. t. 2. f. 11-20, t. 3. f. 1-12.

Horns, with two frontal antlers. England.

Horns; left divided into four long cylindrical branches; right with two frontal antlers, tip subpalmate; perhaps of C. Canadensis?

Horns, deformed. Germany.

Horns, deformed. Germany.

Horns, with a third horn on the right side. Germany.

Single horns, apex much branched. Germany.

Single horn, adult. Germany.

Single horn, adult. Germany.

Single horn, deformed, with only three branches. Germany.

Single horn, simple, compressed, notched at the tip. Germany.

Single deformed stunted horn. Germany.

Skull and horns. Presented by the Earl of Derby.

Skeleton. From the Zoological Society’s Collection.

Two pairs of horns. From Mr. Leadbeater’s Collection.

Horns. From a bog. Presented by Jabez Allies, Esq.

Horns. From Mr. Argent’s Collection.

MAMMALIA.

Var.? Horns very large, larger than those of the Wapiti.

*Hab.* Assyrian Mountains; Lord Arthur Hay.

Var.? Half-fed specimens.

_Cerf de Corse_, Buffon, _H. N._ vi. 95. t. 11; Cuvier, _Oss. Foss._ iv. 53.

*Cervus Elaphus Corsicanus_, _Erzl._, from Buffon.

_Elaphus Corsicanus_, J. Brookes, _Cat. Mus._ 61.


*Cervus Corsicus_, Bonaparte; Gervais.

*Hab._ Corsica.

Buffon observes, of the *Cerf de Corse*, which has been regarded as a variety to be distinguished by the smallness of its size, that he “believes the size to depend on the scarcity of nourishment; for when moved to better pastures, in four years they become higher, larger, and stouter than the Common Stag.”—Buffon, _Hist. Nat._ vi. 95.

Var. Algeria. Caudal disc to base of the tail pale brown. Horns large.

_Cerf commune d’Algerie_, Geoffroy in _Jardin des Plantes_, Paris, 1851.

*Hab._ Algeria. Living in Garden of Plants, Paris.

3. _Cervus Barbarus_. The Barbary Deer.

Dark brown, obscurely white spotted, with a very indistinct, greyish brown, broad dorsal line; with a pale yellow spot extended considerably above the base of the tail. Back of haunches white, with a dark stripe on each side.


*Hab._ Coast of Barbary; Tunis.

Osteology.


Chiefly distinguished from the common Stag, or the Algerian variety of it, by its smaller size, stouter form, and more permanently spotted fur.

4. _Cervus Wallichii_. The Bara Singa or Morl.

Brown, with a very large white spot on the rump, extending on back of the haunches, and far above the base of the tail. The horns with two basal and one or two apical branches.

Cervus Wallichii, *Cuvier, Oss. Foss.* iv. 50; *F. Cuv. Mam. Lithog.,* from *Hardw. Icon. in B. M.;* Sundevall, *Pecora,* 55; *H. Smith,* *G. A. K.* iv. 103. t. 166, v. 788 (from Indian drawing); *Ogilby in Royle’s* *Himal. i.* 73.


Cervus, n. s., *Falconer, Journ. Asiat. Soc.* iv. 710; *Ogilby in Royle’s* *Himal. 73.*


Hab. Cachir, *Hodgson; Persia, MacNeil.*

The skull of Dr. Falconer’s *Cashmeer Stag* is 15 inches long; the suborbital pit is oblong, triangular, and rather deep; the skull and horns are very like Mr. Hodgson’s specimen of *Cervus affinis,* but considerably smaller.

Sir John MacNeil informs us, they are called by the Persians *Marāl,* or *Gevezu,* or *Gookoohee,* and are frequently noticed in their literature. They are found in all the wooded mountain districts of Persia, but apparently do not occur in the central parts of the country, and rarely descend into the plains. During the summer they are found in the highest wooded parts of the mountains, and during the winter in the lower ravines near their bases, where they are frequently tracked in the snow.

The horns of the adult males closely resemble those of the Red Deer of this country, insomuch that I doubt whether an unscientific observer could distinguish them, except by the superior size of those of the *Marāl.*—*P. Z. S.* 11.

Lesson confounds *C. Wallichii* and *C. Duvaucellii* as the same species.—*Nowv. Tab. R. A.* 171, 1842.


Osteology.
Cervus Cashmerensis, (Falconer. MSS.); Gray, Osteol. Cat. B. M. 65.
Cervus Casperianus, Falconer, MSS.; Gray, Osteol. Cat. B. M. 147.

Skull and horns of male. Cashmere. Presented by H. Falconer, M.D.
Skull of female. Cashmere. Presented by H. Falconer, M.D.

Icon.
Jerrael or Tailless Deer of Nepal, Hardw. Icon. ined. B. M. n. 10,975. t. 128.
The Red Deer of India, Hardw. Icon. ined. B. M. n. 10,975. t. 143, copied by Colonel Hamilton Smith, and called by him C. Hardwickii.


Pale brown. ——? Horns very large, as large and heavy as those of the Wapiti.

Shoa or Tibetan Stag (Cervus affinis), Hodgson, Journ. Asiat. Soc. Beng. 1850, 518. t.
Cervus Elaphus, Hodgson, J. A. S. Beng. iv. 1835, 648. t. 53. f. 3; x. 914.
Bara Singha, Hindoos; Hodgson.
Barah Singa or var. of stag, Hodgson, J. A. S. B. i. 346.
Hab. Tibet in Dingeham; Hodgson.

Anat.

Icon.
The Indian species of *Cervus* are confined to the vast primitive forests in the plains. Tail very short; a large disc or pale space round the tail, and no proper mane.—Hodgson.

Mr. Hodgson, in his figure of *C. affinis*, does not represent the pale space round the tail, but it is evident by this observation that it is present. Probably *C. Wallichii*, *C. Casperianus*, *C. affinis* and *C. Tibetanus*, are only one species.

Mr. Hodgson observes, "The horns of *C. affinis*, which I received from the Morung or Eastern Taria, most probably were brought from Thibet."—Journ. Asiat. Soc. Beng. 1850, 466.

The latter observation induces me to place all the above synonyma to one species.


Dark brown. Cheeks and throat rather paler. Rump brown, without any pale spot. Tail pale, white beneath. Hair harsh. Horns rather slender, with a basal and medial snag, and a sub-apical internal one.


*Cervus* (Hippelaphi, no. 4), Sundevall, Pecora, 55.


**Osteology.** Schlegel, Fauna Japon. t. 17, skull and horns.


Horns round below, expanded above, smooth, and branched on the hinder edge. Tail rather elongated. Crumen well-developed. Hoofs narrow, triangular, compressed, covered with thin, rather adpressed hairs, reversed on the nape. The fur is spotted in summer. The skull with a short, broad face, an oblong, rather shallow, infraorbital pit, and short, broad nasals.


*Cervus*, § *Dama*, H. Smith, Griffith A. K. v. 182; Lesson, Mamm. i. 261; N. Tab. R. A. 169; Sundevall, Pecora, 58.

*Daims*, Blainville, Desm. Mam. ii. 448, 1822.

*Platycerinidae*, J. Brookes, Mus. Cat. 61, 1828.

*Tarandus*, sp., Rüppell, Verz. 183.


Fulvous. White spotted, a longitudinal line on the lower part of the side, and a line across the haunches, white.

Var. Nearly black to nearly pure white.
Platyceros, *Pliny*.
Cervus platyceros, *Raii Quad.* 85.
Cervus dama, *Linn. S. N.* i. 93; *Sundevall, Pecora*, 58; *Schreb. Saugth.* t. 249 A, B.
Fallow Deer and Buck, *Pennant; Knight, Mus. A. N.* i. 581, 597, 599.
Dama maculata, *J. Brookes, Cat. Mus.* 61, 1828.

**Var. Blackish.**
*Hab.* Persia. Domesticated in Europe.

This species is represented in sculpture from Nineveh. See *Vaux, Nineveh*, fig. at p. 233; *Bonomi, Nineveh*, p. .

Young.
Head and horns, dark variety.

Adult male in winter. Italy.
Young female in winter. France.

**Osteology.**

Horns.
Horns, a distorted variety.
Horns, adult.
Horns, adult, a distorted variety.
Horns, adult.
Horns, adult.

4. The Rusine Deer or Sambo. *Horns subcylindrical*, with a distinct, anterior basal branch close on the burr or crown, without any medial branch, and with a rather elongated peduncle. *Muffle large, high, not separated from the upper lip*

Catoglochis, part., Bravard.
Cervus β. Hippelaphi, Sundevall, Pecora, 55.
Prox, Sundevall, Pecora, 57.
Rusadæ et Axiæ, J. Brookes, Mus. Cat. 62, 1828.

Dr. Sundevall observes, “The young of the typical Rusæ are not spotted.” — Pecora, 130. But according to the observations and figures of Mr. Hodgson and other Indian zoologists, they are pale spotted, but not so distinctly as several other genera of Deer. Some few specimens retain the spots through life.

* The upper part of the horns variously branched.

1. Panolia, Gray.

Horns round, curved backwards and outwards, with a large anterior basal snag close on the burr, the upper part bent in, forked, becoming rather expanded, and branched on the inner or hinder edge. The fur formed of rather rigid, flattened hair. Muzzle large. Skull with a narrow face, a large, oblong, very deep suborbital pit, and the nasals short, broad, and dilated behind. The frontal snag of the horns often has a tubercle or branch at the base.


1. Panolia Eldii. The Sungnai.

Cervus (Rusa) frontalis, McClelland, Calcutta Journ. N. H. i. t. 12. f. 1, ii. 539; Sundevall, Pecora, 132.
Panolia Eldii (The Sungnai), Gray, Cat. Hodgson Coll. B. M. 34; Osteol. B. M. 66; Knowsley Menag. (P. Eedii, misprint).
Cervus lyratus, Schinz, Syn. Mam. ii. 395.
Hab. India.
**Anat.**

Horns on frontal bone. India.

Panolia acuticornis, Gray, Cat. Mamm. B. M. 180.

A large pair of horns, cylindrical, and with two small snags near the tip. India. Presented by B. H. Hodgson, Esq.


A smaller pair of horns, rather compressed, and with one large and two short snags near the tip. India. Presented by B. H. Hodgson, Esq.

Skull and horns, with one large and one small snag near the tip. India.

Skull and horns, with one large and two small snags near the tip. India.

Horn. India.


Horns. India. From Mr. Warwick's Collection.

**Icon.**

?Bara Singha.—Hardw. Icon. ined. B. M. n. 10,975. t. 130, the original, copied and altered by Colonel Hamilton Smith, t.131. The C. Smithii of Gray, P. Z. Soc. 1837, 48. It may be only a bad figure of C. Duvaucellii.

2. **Rucervus, Hodgson.**

Horns cylindrical, with an anterior basal branch, and repeatedly forked at the tip. Muffle large, high, continued to the edge of the upper lip below. Tail rather short, thick. Face shortish. Crumen well-developed. Ears broad, rounded, covered with hair. Hoofs narrow, compressed. The fur is formed of rather soft, adpressed hairs, without any pale mark on the rump, and only slightly spotted. Skull with an elongate face, a large nose-opening, and an oblong, rather shallow, suborbital pit.


Elaphus, sp., Lesson, Mamm. i. 263.

Cervus, § Hippelaphus, sp., Sundevall, Pecora, 55.

1. **Rucervus Duvaucellii.** The Bahrainga.

Yellowish brown, without any rump spot. Dorsal streak indistinct, dark, with a row of white spots on each side; sides not


Recervus Duvaucellii, Gray, Cat. Hodgson Coll. B. M. 33; Cat. Osteol. B. M. 65.


Cervus enclodocerus, Hodgson.

Cervus Bahraiya, Hodgson, P. Z. S. 1836, 46.


Cervus Euryceros, Gray, Knowsley Menag. t.


The Bahraiya, Hodgson, J. A. S. Beng. i. 345.


Hab. India; Nepal.


Male. India; Nepal. From Gardens of Zoological Society.

Osteology. Cuvier, Oss. Foss. iv. 505. t. 39. f. 6, 7, 8, horns.


Skull and horns of male. Nepal.


Icon.

Barara Singha.—Hardw. Icon. ined. B. M. n. 10,975. t. 132, 134 (see also t. 131).

Spotted Deer of the Sunderbands.—Hardw. Icon. ined. B. M. n. 10,975. t. 133, 135.

—Presented by B. H. Hodgson, Esq.

The Bahraiya inhabits reedy marshes and islands of great rivers; never enters the mountains or forests. Tail short, with no caudal disk, and no heavy mane.—Hodgson.

** The upper part of the horns simply forked.

3. Rusa.

Horns placed on a moderately long peduncle, with an anterior frontal snag close on the crown, and simply forked at the tip. Fur formed of hard, rigid, very thick hair, not, or only obscurely, spotted.

Cervus § Rusa, H. Smith, Griffith A. K. iv.; Lesson, Mamm. i. 264; N. Tab. R. A. 171.
Cervus, sp., Ogilby, P. Z. S. 1836, 135.
Cervus § Hippelaphus**, Sundevall, Pecora, 55.

* Hair of the neck elongated, forming a kind of mane, at least in the males; size large.


Tail not floccose, brown, rather darker at the end. Fur blackish brown, with the feet, the regions of the vent, and a spot over the eyes fulvous. Male maned. Young obscurely white spotted (Hodgson). Skull: suborbital pit very large, broad, deep, oblong, subtrigonal.

Gona Rusa, Daniel, Ceylon, t.
Cervus Hippelaphus, Ogilby in Royle’s Himal. i. 73.
Cervus Hippelaphus, C. Aristotelis et C. heteroceros, Hodgson, Icon. ined.
Rusa equinus, Gray, List Mamm. B. M. 179.
Cervus unicolor, H. Smith, Griffith A. K. v. 780.
Cerf de Coromandel, Cuvier, Oss. Foss. iv. 41. t. 5. f. 32, horns.
Cervus Bengalensis, Schinz, Syn. Mam. ii. 390.
Cerf noir de Bengal, F. Cuvier, Menag. Lith. t.
Cervus equinus (Samboo Deer), Bennett, Tower Menag. 185. fig.
Cerf Mulet ?, Cuvier, Oss. Foss. iv. 43. t. 5. f. 38, horn.
Cervus heterocerus, Hodgson, J. A. S. Beng. 1841, 722. t.
Biche de Malacca, Cuvier, Oss. Foss. iv. 41; F. Cuv. Mam. Lith. t.
Cervus Malaccensis, Fischer, Syn.
Cervus Saumer, Ogilby in Royle’s Himal. i. 75.

Mr. Hodgson notices the following varieties:—

Var. 1. Brown; the frontal branch short.
Cervus Hippelaphus, or Phursa Jarai, Hodgs. Icon., not Cuv.
C. Saumur, Ogilby; Royle, Illustr.
Phursa Jarai, Hodgson, J. A. S. B. i. 1132. 66. t. 5. f. 1–3, 346.

Var. 2. The hinder part of the beam produced, longer than the upper prong.
Cervus Hippelaphus var., Cuv. Oss. Foss. v. t. 5. f. 34.

Var. 3. Rump rufous; the frontal branch of horn elongate.
Cervus Aristotelis (or Râto Jarai), Hodgs. P. Z. S. 1834, 98; 1836, 39.
The Rato Jarai, Hodgs. J. A. S. B. i. 66. f. 4, 346.

Var. 4. The upper part of the beam simple.
Cervus heterocerus, or Kâlo Jarai, Hodgs. J. A. S. B. x. 1841, 727. t. 2. x. 914; Calc. J. N. H. iv. 292; Cat. Osteol. Spec. B. M. 68.
Kalo Jarai, Hodgs. J. A. S. B. i. 1832, 66. t. 5. f. 5, 346.

India. Presented by B. H. Hodgson, Esq.

There is only one species of Rusa found in the western forests, which is common also to all the heavy jungles of Southern India.
The horns of different individuals present great diversity of forms. I have met with instances of medial antlers, of trifurcated extremities, and in one case with the extremity showing a four-fold division (see t. 4. f. 1).—Elliot, Madras Journ. 1840, 30.

Osteology.
Sambur Horns (gigantic), weight 25 lbs., circumference above burr 10½ inches, in middle of beam 8 inches.—Zoophilus, India
Sporting Review, Calcutta, 1849, x. 256. t., from Cuttack coast, or Madras.

ANAT.


Horns on frontal bone. India.

Two single horns, upper branches more equal. India.

Horns on frontal bone, like the last, but thicker, heavier and more granular.

Horns on frontal bone, like the last, but the left horn has a large posterior branch at the fork.

Horns on frontal bone, like the last, but rather smaller, hinder branch of fork longest, the left one with a posterior branch in the middle. India. Presented by Mrs. Wright.

Horns of frontal bone, like the last, but larger and without posterior branch.

Horns of frontal bone, one-third smaller.

Single horn, simple, from a castrated animal?


Single horn of the first year.

Horns on frontal bone, hinder upper branch turned back.

Horns, very long, thick, with very short, thick frontal and submedial branch on one.


Horns on frontal bone, apex simple. India.


A pair of very large thick horns, with rather long frontal snag, the left with a large posterior process. India. Presented by B. H. Hodgson, Esq.

A pair of very large, thick horns, with rather long frontal snag. India. Presented by B. H. Hodgson, Esq.

Three pairs of large horns, with moderate frontal snag, the hinder upper snag rather the longest. India. Presented by B. H. Hodgson, Esq.

A pair of similar, but rather slenderer and more elongate horns. India. Presented by B. H. Hodgson, Esq.
A pair of large horns, with rather elongated front snag, the front upper snag rather longest, the horns rather close together. India. Presented by B. H. Hodgson, Esq.

A pair of large horns, with very long frontal snags, the upper snag rather the longest. India. Presented by B. H. Hodgson, Esq.

A pair of horns, the right like the former, the left quite simple, subulate. India. Presented by B. H. Hodgson, Esq.

A pair of horns, one with a moderate, and the other with a long frontal snag, the upper snag nearly equal. India. Presented by B. H. Hodgson, Esq.

A pair of rather slender, more elongate horns, with moderate frontal and short upper snags. India. Presented by B. H. Hodgson, Esq.

A pair of horns, the beam not branched.

Head of a female. India; Himalaya.

Head and horns, with skin. India. Presented by Edward Cross, Esq.

Skeleton. India. From Mr. Bartlet's Collection.


**Icon.**


Gouse or Indian Black Deer.—*Hardw. Icon. ined. B. M.* n. 10,975. t. 139 ♀.

Walawah Tinkee.—*Hardw. Icon. ined. B. M.* n. 10,775. t. 140 ♀, t. 141 ♂ ♀ (this figure altered by Colonel Hamilton Smith), l. c. n. 10,975. t. 142.

Shabur or Saubur.—*Hardw. Icon. ined. B. M.* n. 10,975. t. 136 ♂, t. 137 ♀, copied t. 138 ♀; n. 10,974. t. 92 ♀, t. 93 ♀.

The **Samburs** or **Jerrows** inhabit the great forests and the mountains above them; are not gregarious; have a long, bluff tail, like a docked horse, no disk round it; and a heavy mane over the whole neck. They rut in spring, then drop their horns. The female gestates eight months and produces young in winter.
The horns take six months for their perfect replacement, and are not complete in form until the fourth year, nor in size till the eighth year.—Hodgson.

Colonel Sykes believes the Sambur of the Mahrattas to be the *C. equinus* of H. Smith; he observes, "it wants the size and is not so dark as the Sambur of Bengal."—P. Z. S. 1831.

2. **Rusa Dimorphe. The Spotted Rusa or Gerver.**


Stuffed, not good state. India. The specimen described and figured by Mr. Hodgson.

It is very doubtful if the above specimen is more than an accidental variety, with distorted horns, of the *Sambur*.

The Gowers are not gregarious, confined to the Saul Forest. —Hodgson.

3. **Rusa hippelaphus. The Mijangan Banjoe.**

Greyish brown. Tail not floccose, brownish at the tip. Anal region not pale. Cheeks and upper part of the neck of the males maned. *Young* : hair smooth.


*Cervus hippelaphus*, Cuvier, *Oss. Foss.* iv. t. 5. f. 31, 34, 42; *F. Cuvier, Mam. Lithog.* t.; *Raffles, Mem.* 645.

*Cervus Tunjuc*, Vigors *in Raffles Memoir*, 645; *Gray, P. Z. S.* 1836, 67.


Cerf Noir de Bengal, *F. Cuv. Mam. Lithog.* t. 2, in summer.


*Cervus Leschenaultii*, *Cuvier, Oss. Foss.* iv. 508. t. 39. f. 9, from horns only.
Var. Smaller.
Cervus Molluccensis, Quoy & Gaim.; Eydoux, Guérin Mag. Zool. 1836, 26; Sundevall, Pecora, 56.
Cervus Rusa Molluccensis, S. Müller, Nederl. Verh. t. 43 ♂, t. 35. f. 1–4; Mus. Leyden, 1845.
Cervus Rusa Timorensis, Mus. Leyden, 1845.

Hab. Java.


This species was living some time at Knowsley and bred there. In all its states was very distinct from the Samboor of continental India.
The horns are similar to those of R. equina, but the body and horns are smaller, and the hair of the young is smoother.

Osteology.
Cervus Hippelaphus, Cuvier, Oss. Foss. iv. 40. t. 5. f. 31, 34, 35 (C. auritus?), t. 5. f. 42.
Cervus Leschenaultii, Cuvier, Oss. Foss. iv. 508. t. 39. f. 9, horns only.
Cervus Rusa, Müller, Verh. I. A. t. 43. f. 1, 4.
Cervus (Rusa) Molluccensis, Müller, Verh. I. A. t. 43. f. 5.
Cervus Rusa Timorensis, Müller, Verh. I. A. t. 43. f. 6.

The specimen at Knowsley, received from Amsterdam, in summer had the fur formed of thick, rigid, waved quills. The fur is reddish brown, minutely punctated; on the head, neck, dorsal line and shoulders blacker; the orbits yellowish; the lips, chin, gullet, edge of nose, whiskers, and inside of the ears, white, without any black spot on the side of the lower lip.

4. RUSA EQUINUS. The SAMBOOR.

Brown, not spotted. Tail rounded, floccose, black at the tip. Young very obscurely spotted. Hair rigid and rough. Skull: suborbital pit moderate, oblong, narrow.
Rusa, Raffles, Linn. Trans. xiii. 263.
Cervus equinus, Cuvier, Oss. Foss. iv. 44. t. 5. f. 30, 37, 38. f. 42; H. Smith, Griffith A. K. iv. 112. t.; Sundevall, Pecora, 55; S. Müller, Nederl. Verh.
Eland or Elk, of the Dutch Sportsmen.
Hab. Sumatra; Borneo.

Osteology.
C. equinus, Cuv. O. F. v. t. 5. f. 30, 42.

The specimens received from Amsterdam in the Knowsley Menagerie had the hair short, rigid, close-pressed, not waved; dull blackish brown; the lips, chin, and spot above each eye, white;
lower lip with a black spot in the middle of each side; whisker black; ears nearly naked; inside and large spot at the upper inner part of the base whitish.

Size smaller. Mane none. The peduncle of the horns rather elongated, and covered with hair.

5. Rusa Peronii. The Smaller Rusa.

Brown, pale beneath. Hair rigid, thick, ringed. Muzzle dark. Tail brown, floccose. Anal disk white. The hind part of the feet hairy. The horns are thick and heavy. Skull: suborbital pit large and deep.—Cuvier, fig.

Cervus Peronii, Cuvier, Oss. Foss. iv. 46. t. 5. f. 41, horns, f. 45, skull; Sundevall, Pecora, 56.

Cervus Kuhlifu, S. Müller, Nederl. Verh. 45. t. 44; Sundevall, Pecora, 56.


Hab. Timor and Luboc; Bavian and Ternate.

Male. Timor. From the Leyden Museum.

Osteology. Cuvier, Oss. Foss. iv. 46. t. 5. f. 41–45; S. Müller, Nederl. Verh. t. 43. f. 12, 14.

Femur and tibia. Timor.


Cerf de Philippeine, Desm. Mam. 442.

Cervus (Muntjac) Philippinus, H. Smith, Griffith A. K. iv. 147. t. 164. f. 5 (head), v. 803; Fischer, Syn. 622.

C. (Hippelaphus) Philippinus, Sundevall, Pecora, 56.

Cerf de Manille, Cuvier, Oss. Foss. iv. 46.


Var.? Tail black, dependent. Front of face dark.

Cervus Marianus, Cuvier, Oss. Foss. iv. 45. t. 5. f. 30, 37, 38, 46; H. Smith, Griffith A. K. iv. 115. t., from Mus. Paris; Fischer, Syn. 453; Sundevall, Pecora, 57.

Hab. Philippines.

Osteology. Cuvier, Oss. Foss. iv. 45. t. 5. f. 39, 40, f. 46, skull.

This species has the horns or elongated peduncles like the Muntjacs, but it is easily distinguished from them by the absence of the ridge, and of the grooves on the face.


Reddish brown. Back and sides varied, with pale spotted hair. Vent disk small, white, black edged above. Tail longly hairy, white, above black. Face brown, with a roundish white spot in front of the usual oral black spot. Horns smooth, slender, nearly straight, elongate, the basal snag bent down on the forehead.


Scarcely as large as a Roebuck.

4. Axis.

Fur formed of thick polished hairs, fulvous, and beautifully white spotted at all seasons. Face elongate, narrow. Ears large, rather elongate and acute. Tail rather elongate. Legs nearly equally long slender. The horns are placed on moderately long peduncles. The skull is elongate, narrow, with an oblong, rather small, deep suborbital pit.

Cervus § Axis, H. Smith, Griffith A. K. v. 1827; Lesson, Mamm. i. 267; N. Tab. R. A. 172, 1842.

1. Axis maculata. The Axis or Chittra.

Fulvous, with a black dorsal streak ornamented, and two series of white spots. Sides with many white spots in oblique curved lines, and with a short white streak obliquely across the haunches. Young fawn spotted exactly like the adult.

Axis, Pliny; Buffon, H. N. xi. t. 38, 39; Cuvier, Menag. Mus. t.; Oss. Foss. iv. 38. t. 5. f. 24, 29.
Cervus Axis, Erxl. Syst. 312; Schreb. t. 250; H. Smith, Griff. A. K. v. 786; Cuvier, Oss. Foss. iv. 39. t. 5. f. 29, horns; Ogilby in Royle's Himal. 73; Bennett, Gard. Z. S. 253; Sundevall, Pecora, 57.
Axis major, Hodgson, J. A. S. B. x. 914; Calcutta Journ. N. H. iv. 292.

Axis minor, Hodgson, J. A. S. B. x. 914.

Axis medius, Hodgson, Icon. ined.


C. axis Ceylonensis, H. Smith, Griffith A. K.

Spotted Axis or Chittra, Hodgson, J. A. S. Beng. i. 346.

The Chittra or Axis, Hodgson, Mam. Icon. ined. n. 204. 1.

Langna, or Pada, or Spotted Porcine Deer, Hodgson, J. A. S. B. i. 346.

The Thou or Spotted Porcine Axis, Hodgson, Mam. Icon. ined. n. 204. 2 (horn smaller).

Axis medius, or Spotted Hog Deer, or Thou Langna of the Tarai, Hodgson, l. c. 205, horns smaller.


Hab. India; Ceylon.

Male. India. Presented by P. Ducane, Esq.

Var. 1. Blackish.


Female. India. Presented by Edward Cross, Esq.

Male and female. India.

Young. India.

Young? (yellow). India.

Fœtus from spirits? India.

Var. Smaller. Fulvous; spots and a streak across the haunch and along the lower part of side, white.


Axis medius, Hodgs. Icon. ined. 205.

Lesser Spotted Deer, Hodgs.

?Langna, or Puda, or Spotted Porcine Deer, Hodgs. J. A. S. B. i. 346.

Hab. Nepal; Tarai.

Osteology.


Cerf Cochon, Buffon, H. N. Supp. iii. t. 18 (not Pennant); Cuvier, Oss. Foss. iv. t. 5. f. 29.

Horns on frontal bone, slender, elongate, warty. India.

Horns on frontal bone, slender, elongate. India.

Horns on frontal bone, slender, elongate, simple. India.

Horns of the usual form, with two snags near the base of the right, and one on the left side. Nepal. Presented by B. H. Hodgson, Esq.


Skull and horns. India.

Horns on frontal. India.

Horns on frontal. India.

Horns on frontal. India.

Horns on frontal, smooth. India.

Horns on frontal, very warty. India.

Horns on frontal bone, with two snags near the base of the left, and one on the right side. Nepal. Presented by B. H. Hodgson, Esq.


Horns, very long, thick, with very short, thick frontal and submedial branch on one.

Axis Pennantii.—Gray, Cat. Osteol. B. M. 180.

Icon.

Drawing of male.—Hodgson, Icon. ined. B. M. t. 204. f. 1. Presented by B. H. Hodgson, Esq.


Drawing of male.—Hodgson, Icon. ined. B. M. t. 204. f. 2. Drawing of male and female.—Hodgson, Icon. ined. B. M. t. 205.


The horns of this species vary greatly in size.

Pennant describes two Deer, under the names of—


from the horns alone. These are probably only large-horned examples of the common species.

The Chitals inhabit the plains of India; gregarious, the herds being often very large. Tail elongate, reaching to the hocks, ending in a point. The fur smooth and spotted, without any mane. They rut in December and breed in May, and gestate six months.
3. **Axis pseudaxis.** The Spotted Axis.

Fulvous, white spotted, a series of spots on the lower part of each side, and an oblique series of spots on the haunches.

*Cervus pseudaxis,* Gervais, *Voy. Bonite,* 64. t. 12; *Institute,* 1841, 419; *Sundevall,* *Pecora,* 57.


This species chiefly differs from *Axis maculata* in having a series of spots in the place of the oblique streak on the haunches.

Mule between *Cervus Axis* and *C. pseudaxis,* Pucheran, *Compt. Rendus Acad. Sci.* 1849, 774.

M. Pucheran considers these two species to belong to different sections of the genus!—*Compt. Rendus,* 1849, 778.

5. **Hyelaphus, Sundevall.**

Fur of moderately thick, palish hair, fulvous, and spotted in the summer. Tail rather elongate. Legs rather short, the front being rather the shortest. Face short, broad, and arched in front. Ears short and rounded. Horns placed on moderately elongated peduncles.


*Cervus § Hyelaphus,* *Sundevall,* *Pecora.*

*Axis,* sp., Blainv. *Desm. Mam.* ii. 448, 1822; *Lesson,* *Mamm.* i. 268; *H. Smith,* *G. A. K.*

1. **Hyelaphus porcinus.** The Lugna Para or Shgoriah.

Brown or yellowish brown, with an indistinct, darker dorsal streak, and with obscure whitish spots, but without any white streak on the sides or haunches; in the winter brown and spotless. Forehead, face and front of legs darker. Line down the front of and the inside of the thighs white.

Porcine Deer, *Penn.* 42. t. 8. f. 2.

*Cervus Hippelaphus var.,* Cuvier, *Oss. Foss.* iv. 43. t. 5. f. 31, horns.


*Cervus (Hyelaphus) porcinus,* *Sundevall,* *Pecora,* 58.


Cervus Hippelaphus, var. 3, Cuvier, Oss. Foss. iv. 43 (for C. niger).


Hab. India; Plains of Hindostan; Ceylon; Assam and Tarai of the Kemaon Mountains; McClelland.

Male. India.

Osteology.

Skull, with horns. India.
Horns on frontal bone. India.
Horns, separate. India. Presented by General Hardwicke.
Horns, separate. India. Presented by General Hardwicke.
Horns, separate. India. Presented by General Hardwicke.
Two horns, single, not forked at the tip.
Skull and horns, var. frontal snag elongated and thick.
Four pair of horns. India. From Mr. Argent’s Collection.

Icon.
Hog Deer, Cervus porcinus (head of female).—Forster, Icon. ined. B. M. t. 14, from India.
Porcine Deer.—Hardw. Icon. ined. B. M. n. 10,975. t. 121 ♂, t. 122, head ♂, t. 123 ♀; n. 10,974 (t. 84). t. 99.

The tail bushy and often carried erect. The males and females in summer are reddish brown, with numerous white spots; the middle of the back rather darker. In winter the whole fur becomes blackish brown, and the spots disappear.
The Para live in families or small herds on the plains. They
rut in December or January and breed in May, whence they gestate six months.—Hodgson.

Do not ascend the mountains.—Ogilby.

Easily known from the *Axis* by being lower on its legs, and there is no distinct black dorsal streak, nor white streak on haunches. The horns are generally short, with only short snags or branches, but they are sometimes as large as those of the *Axis Deer*.

The Cervus Dodur, *Royle, Himal. t. 5. f. 1*, and *Ogilby in Royle, i. 73*, of the Himalayas, “of an ashy grey colour, the size of the female *Antilope Cervicapra*, and more graceful than the Hog Deer,” is only known from the above description and figure of a female. As Hog Deer are said not to ascend the mountains, it is probably a distinct species.

Cervus Pumilio, *H. Smith, Griffith A. K. v. n. 788*; *McClelland, P. Z. Soc. 1839, 150*, is perhaps only a variety of the Hog Deer.

6. CERVULUS.

Horns on elongated pedicels, supported by longitudinal ridges on the face, which have a naked moist groove on their side. Canine teeth exserted. Crumen large and deep. Tail elongate and tufted. Hoofs triangular and partly united in front by a web; the false hoofs are small and transverse. Fur of thin, shining hair, and not spotted. They have no tuft of hair on the outside of the hind legs. Skull with a very large, deep, nearly hemispherical suborbital pit. The young, before the horns appear, have a bald groove on the head.


*Muntiacus*, *Rafinesque, Anal. Nat. 56, 1815*.


*Prox (Moschatus), Ogilby, P. Z. S. 1836, 135*; *Sundevall, Pecora, 61*.


*Cerf à longues canines*, *Lesson*.

*Stylocerinidae, J. Brookes, Mus. Cat. 62*.

*Dioplón, J. Brookes, Mus. Cat. 62*.

1. CERVULUS VAGINALIS. The KIJANG or MUNTJAC.

Dark reddish brown. Narrow streak on the front edge of the thigh white.
Kijang, Marsden, Sumatra, 94.
Cervus Muntjac, Zimm. Schreb. t. 254; Horsf. Java, vi. t. 1; Raffles, Mem. 645.
Dioplon Muntjak, J. Brookes, Mus. Cat. 62, 1828.
Prox muntjac, Sundevall, Pecora, 61.
Cervus vaginalis, Bodd. Elenc. i. 136.
Cervus (Cervulus) subcornutus, Blainv. Schreb. t. 254 b. f. 2.
Muntjacus vaginalis, Gray, Cat. Mamm. B. M. 173.
Ribbed-face Deer, Penn.
Chevreuil des Indes, Allam, Buff. Supp. v. 41. t. 17, vi. 195. t. 26; Cuvier, Oss. Foss. iv. t. 5. f. 48, t. 3. f. 49, 54.
Hab. Sumatra; Java.

Osteology.
Muntjac of Sumatra, H. Smith in G. A. K. iv. t. 164. f. 7, jun., t. 175, adult ♂.

Icon.
Cervus Muntjac, Desch. MSS. Icon. ined. B. M. t. 35.

This chiefly differs from the following in being darker-coloured.

2. Cervulus moschatus. The Kegan or Kaker.

Bright reddish yellow. Streak on front of the thigh and under part of the tail white. Chin and gullet whitish. Hair not ringed.

Var. With a triangular white spot on each side of the chest.

Musk Deer of Nepal, Ousley, Orient. Collect. ii. t., 1798.
Cervus Moschus, Desm. Mam. 441.
Cervus Ratwa, Hodgson, J. A. S. B. i. 346. t., head; P. Z. S. 1834.
Cervus Rutwa, Royle, Himal. t. 5. f. 2; Ogilby in Royle's Himal. 73.
Stylocerus Ratwah, Hodgson, J. A. S. B. x. 914; Calcutta Journ. N. Hist. iv. 292.
Cervus Muntjac (Kacher), Ogilby in Royle's Himal. i. 73.
Prox Ratwa, Sundevall, Pecora, 62.
Prox albipes, Wagner, Suppl.; Sundevall, Pecora, 62.
Prox stylocerus, Wagner, Suppl.; Sundevall, Pecora, 62, 64.
Jungle Sheep, India.
Hab. India.

Deep chestnut, becoming browner as the animal grows.—Elliot.

Var. “Entirely black.”
Cervus melas, Ogilby, P. Z. Soc.; in Royle’s Himal. 73.
Prox melas (Ogilby), Sundevall, Pecora, 62.
Hab. Continental India; Ogilby.

Male. India.
Female. India.
Head of male, with horns. India; Northern Circars.

A male. Nepal.


Osteology, t. 32. f. 2.
Chevreuil des Indes, Buffon, Supp. iii. t. 36; Cuvier, Oss. Foss. iv. t. 3. f. 49-53, t. 5. f. 48.


*Skull.
Head of male and horns. Northern Circars.
Head and horns of male. Deccan. Presented by Colonel Sykes, F.R.S.
Base of skull and horns. Nepal.
Skull.
Two skulls of a male, with horns, differently developed. Presented by B. H. Hodgson, Esq.

Icon.
Drawing of head in pencil, Cervus plicatus, Bank. Icon. ined. B. M. i. t. 6.
Drawing of Kaleeātoo or Stag Deer of the Tamouleans.—Hardw. Icon. ined. B. M. n. 10,975. t. 145, copied n. 10,974. t. 88; n. 10,975. t. 146, 147, copied n. 10,974. t. 87.
Drawing of Chickera or Mountain Deer.—Hardw. Icon. ined. B. M. n. 10,975. t. 144, copied n. 10,974. t. 89; n. 10,975. t. 162, 163.

The Ratwa live in the mountains, or the forests at their bases; they live six or eight together, preferring dell and close cover. They bark all the year, but particularly in winter, when the males are wanton. The horns fall in May, and are perfect again in August. They rut in January or February and breed in June or July, gestating six months. The females have bristly tufts, ending in a knob, instead of a horn. The fascial creases are large, mobile, glandular, placed above the inner side of the horn pedicels.

See also—


Greyish brown. Hair short, pale, ringed.

Cervus Reevesii, Ogilby, P. Z. Soc. 1838, 105.
Prox Reevesii, Wagner; Sundevall, Pecora, 62.

Hab. China.

Mr. Ogilby observes, “This species has a longer head and tail than the common Indian Muntjac, also has less red and more
blue in the general shades of colouring, and is readily distinguished by the want of the white over the hoofs, which is so apparent in its congers. The fawn is spotted."

The Earl of Derby has these three kinds at Knowsley, but they breed together, and it has hence become impossible to discriminate the mules from the original species.

5. The Capreoline Deer. Horns without any anterior, basal snag, the first branch being considerably above the burr, very shortly peduncled. Crumen very small. Muffle broad and naked. Suborbital gland and pit in the skull generally small and shallow, except in the genus Pudu. The tuft of hair on the inside of the hock distinct. The tuft on the outer side of the tarsus sometimes present.


Capreolidæ, J. Brookes, Mus. Cat. 62, 1828.

A. Horns branched.

a. Tarsal tuft above middle of bone. Old Continent.

Capræa, Ogilby.
Les Chevreuils, Blainv. in Desm. Mam.
Capreolidæ, J. Brookes, Cat. Mus. 62, 1828.

1. Capreolus.

Horns nearly erect, small, cylindrical, slightly branched, with a very short peduncle. Tail none, but a large, white anal disk. Crumen very indistinct. Hoofs narrow, triangular. The tuft on the hind-legs rather above the middle of the metatarsus. Fur of thick, brittle hair in winter, and thinner and more flexible hair in the summer. The adults are not spotted, and have a black spot at the angle of the mouth. The skull has a very small, shallow, suborbital pit. Infraorbital impression very slight, rather deeper in the middle. Nasal not dilated behind. Two central lower cutting-teeth dilated above, outermost very narrow.

Found in Europe and North Asia.

Caprea (capreolus), Ogilby, P. Z. S. 1836, 135.
Cervus, § Capreolus, H. Smith, Griffith A. K. iv. 1827.

1. **Capreolus Capræa**. The Roebuck, t. 33. f. 1, t. 34. f. 4.

Inside of the ears fulvous. Chin white, with a black spot below the angle of the mouth.

**Capræa**, Plinii Hist. Nat. viii. c. 55; Gesner, Quad. 324. fig.; Jonston, Quad. 77. t. 31, 35.
C. Plinii, Ray, Syn. Quad. 89.
Capreolus, Brisson, R. A. 89.

**Cervus minimus**, Klein, Quad. 24.


**Capreolus Capræa**, Gray, List Mamm. B. M. 176; Cat. Osteol. B. M. 64.

*Capreolus europeus*, J. Brookes, Mus. Cat. 62, 1828; Sundevall, Pecora, 61. 184.
Roebuck, Penn. Brit. Zool. 18. t.; Knight, M. A. N. f. 615; Bell, Brit. Quad. fig.

**Chevreuil et Chevrette**, Buffon, H. N. vi. 198. t. 32, 33.
**Chevreuil d'Europe**, Cuvier, Reg. Anim. i. 257; Oss. Foss. iv. 47. t. 1. f. 37-40.

**Rehbock**, Riding, Jagd. Th. t. 9; Meyer, Thier. ii. 677. 74; Wildung, Taschenb. 1797, i. t. 1, 2.

**Hab. Europe.**

Female. Scotland.

Male (bad condition). Scotland.

Male, new horns, with fur coat. Presented by the Earl of Derby.

Adult male in winter. France.

Adult female in summer. France.


**Chevreuil**, Daub. Buff. H. N. vi. t. 35. f. 36; Cuvier, Oss. Foss. iv. 47. t. 3. f. 37, 40; Gay & Gervais, Ann. Sci. Nat. 1846, 93.

Horns, adult. Scotland.

Horns, second year. Scotland.

Single horns. Scotland.

Horns on skull (diseased), very warty. Scotland. Presented by Lord Willoughby d'Eresby.

Two skulls, female. Mr. Argent's Collection.

Var. Horns divided into several short branches at the top.


Interior of the ears fulvous. Chin pale, blackish behind, nearly to the angle of the mouth.

Cervus pygargus, Pallas, Reise, i. 97, 198, 433; ii. 159; Spic. xii. 7; Erxl. Syst. 317; Gmelin, S. N. i. 175 (not Hardwicke); Schreb. Saugth. 1118. t. 253; Desm. Mamm. 440; Fischer, Syn. 450, 619; Brandt, Bull. Acad. Petersb. iii. 280; Wiegm. Arch. 1845, ii. 40.


Cervus Ahu, Griffith, A. K. iv. 122. t., v. 789.

Ahu, S. G. Gmelin, Reise, iii. 496. t. 56.


Tailless Deer, Penn. Quad. i. 121.

Tailless Roe, Shaw, Zool. ii. 287.


Ahu, Persians.

Siaga, Tartars.

Dikaja Kosa, Russians.

Hab. Central Asia.

A male and female. Siberia. From M. Brandt's Collection.

b. Tarsal tuft absent or below middle of bone. New Continent.

Mazamadæ, J. Brookes, Cat. Mus.

2. Blastocerus.

Horns straight, erect, three-branched, without any basal snag. Tail very short. Ears rather large. Fur consisting of very thin, soft hair. They have a distinct pencil of hairs on the inside of the hock, but none on the outside of the metatarsus. Skull with oblong suborbital pit, rather deep. Confined to South America. The young are described by Azara as not spotted!


Blastocerus, sp., Wagler; Sundevall, Pecora, 59; Gray, Knowsley Menag.
Furcifer, part., Wagler; Sundevall, Pecora, 59; Gray, Knowsley Menag.

Mazama, sp., H. Smith, Griffith A. K. v.


Fulvous. Orbit, sides, muzzle, belly, and under side of tail, white. Face-marks and feet blackish.

Cervus paludosus, Desm. Mamm. 443; H. Smith; Fischer, Syn. 444, 616; Licht. Darst. t. 17; Renger, 344.
Cervus Blastocerus paludosus, Sundevall, Pecora, 59.
Gouazoopoucou, D'Azara, Essai, i. 45, 70, 73; Apuntamientos, i. 35.
Guazu-ete, Brazilians.
Guazu pucu, Renger, 344.
?Mazama (or Cervus) furcata, Gray, List Mamm. B. M. 176; Cat. Osteol. B. M. 64.
Hab. South America.

Anat.

Horns. S. America?
The Thick-horned Guazuti, Mazama? furcata, Cervus furcatus, Gray, List Osteol. B. M.

Colonel Hamilton Smith’s figures, from life, represent the tail erect, showing a great quantity of white hair; and the face is dark in front, with a dark ring round the gape, which are not indicated in Lichtenstein’s figure.

2. Blastocerus campestris. The Mazame or Guazuti.

Fulvous brown. The hairs of the lower part of the nape and front of the back reversed. The hoofs narrow. Young: middle of back not spotted. Sides with small white spots, the upper series forming a regular line.

Veado branco, V. do campo, Anchieta, Notic. i. 127.


Cervus (Mazama) campestris (Guazuti Deer), *H. Smith, Griffith A. K.* iv. 136. t. 170, v. 797.

Mazama campestris, *Gray, List Mamm. B. M. 176; Cat. Osteol. B. M. 64.*


Cervus (furcifer) campestris, *Sundevall, Pecora,* 60.


Biche de Pampas, *Cuvier, Oss. Foss.* iv. 52.

Biche de Savanne, *De la Borde, Buff. Supp.* iii. 126.

Gouazou-ti, *Azara, Essai,* i. 77.


Guazu'ti, *in Paragua.*

Guazu para, *in Brazils.*

Hab. South America; North Patagonia.

Male, female and young. Northern Patagonia. Presented by Sir William Burnett and Capt. Fitzroy, R.N. (Specimens described by Darwin and Waterhouse.)

Osteol. t. 35. f. 1–3. *Cuvier, Oss. Foss.* iv. t. 3. f. 46 (scarcey f. 47 or 48); *Pr. Max. Abbild. t.*

Horns on frontal bone. Northern Patagonia. From Haslar Hospital Museum. (Capt. Fitzroy’s Expedition.)

Skull with horns. “Columbia.” The Parzudaki Collection.

*Cervus campestris* is exceedingly abundant, often in small herds, throughout the countries bordering the Plata and in Northern Patagonia. If a person crawling close along the ground slowly advances towards a herd, the deer, frequently out of curiosity, approach to reconnoitre him. I have by this means killed from one spot three out of the same herd. Although so tame and inquisitive, yet when approached on horseback they are exceedingly wary. At Bahia Blanca, a recent establishment in Northern Patagonia, I was surprised to find how little the deer care for the noise of a gun. An overpoweringly strong and offensive odour proceeds from the buck; it is quite indescribable; several times while skinning a specimen I was almost overcome by nausea. I tied up the skin in a silk pocket-handkerchief and so carried it home. This handkerchief, after being well washed, I continually used, and it was of course as repeatedly washed, yet...
every time, for a space of one year and seven months, when first unfolded I distinctly perceived the odour. Frequently when passing at the distance of half a mile to the leeward of a herd, I have perceived the whole air tainted with the effluvium. I believe the smell from the buck is most powerful at the period when its horns are perfect and free from the hairy skin; when in this state the meat is of course quite uneat able, but the Gauchos assert, that if buried for some time in fresh earth the taint is removed.—Darwin, Journal, 49.

A skull at Haslar has the horns of one side normal, on the other (the left one) with the front lower branch elongated and forked.

The figures of *C. campestris* in F. Cuvier, *Man. Lithog.*, is evidently a *Cariacus*, and not of this genus.

3. **Furcifer.**

Horns erect, forked, without any basal snag. Ears narrow, acute. Tail short. Fur consisting of thick, rather brittle, waved hairs. Skull with a moderate suborbital pit. There is a distinct parcel of hairs on the inside of the hock, but none on the outer side of the metatarsus. Confined to South America.

They differ from *Capreolus* in wanting the tuft of hair on the outer side of the hind tarsus.

*Cervus*, § Furcifer, part., *Sundevall*, Pecora, 60.


Cervus Mazama, sp., *H. Smith*, G. A. K.


Camelus, sp., *Leuckart.*

Cervequus, *Lesson*, *Nov. Tab. R. A.*


Equus, sp., *Molina*, *Chili*, 520; *Fischer*, *Syn.* 430; *Shaw*, *Zool.*


1. **Furcifer Antisiensis.** The Tarush or Taruga.

Yellow grey. Hairs rigid, quilled, brown, with a yellow subterminal ring. Edge of muffle and throat white. Face with a brown longitudinal streak and a lunate band between the eyes. The hoofs rather broad, worn in front.

Cervus (furcifer) Antisiensis, *Sundevall*, *Pecora*, 60.

*Hab.* S. America; Bolivian Alps.


2. **Furcifer Huamel. The Guemul.**

Brown, minutely yellow dotted. Hair long, brittle, waved.


Camelus Equinus, *Leuckart; Treviranus, Biologie*, ii. 179, 252, 1803.


Cloven-footed Horse, *Shaw, Zool.* ii. 441.

Guemul, *Chilians.*

*Hab.* East coast of S. America; Cordillera; Patagonia.

Female, imperfect skin. Chili. Presented by the Earl of Derby.

**Anat. Gay & Gervais, l. c.**

"Skull the size of that of *C. campestris*, but the forehead is flattened; interocular region is squarer. The pit of the tear-bag is more considerable, and the naso-maxillary foramen is smaller."
4. Cariacus.

Horns cylindrical, arched, with a central internal snag, the tip bent forward, and with the lower branches on the hinder edge. Fur soft, of thin hair. Tail moderate, furnished with long hair on the under side, anal disk white. Ears rather elongated, large, rounded. They generally have a tuft of white hair on the outer side of the hind legs, rather below the middle of the metacarpus, but it is sometimes not to be seen. The skull has a very small, shallow, suborbital pit, and the nasal bones are broad and sub-triangular behind. The tail is elongate, slender, pale, with the lower part dark, and reaching nearly to the hocks in summer; much shorter and broader, and all dark olive, in the winter. Confined to Northern America.

Mazama, sp., H. Smith, Griffith A. K. v. 182; Lesson, Mamm. i. 270.
Mazama, Sundevall, Pecora, 50.
Mazamadæ, J. Brookes, Mus. Cat. 62, 1828.
Elephalcedæ, J. Brookes, Mus. Cat. 62, 1828.

* Hoofs narrow, elongate. Tail hairy beneath.


Bright fulvous in summer, greyer in winter. Tail fulvous, above the tip black, beneath white, carried erect when running. Metatarsal tuft large, white, round. Nose brown. Side of mouth white, with an oblique black band from the nostrils. Hoofs narrow, elongate.

Dama virginiana, Raìi Syn. 86.
Fallow Deer, Lawson, Carol. 23; Catesby, Carol. App. 28.
Cervus Dama americanus, Erxl. Syst. 312.
Cervus Strongyloceros, part., Schreb. Savgth. 1074, not figure.
C. Magivorus, Schrank, Ann. Wetter. i. 327, 1819.
C. (Mazama) Virginiana, Sundevall, Pecora, 58.
Cariacus virginianus, Gray, List Mamm. B. M. 175; Cat. Osteol. B. M. 63, 64.
Mammalia.


Virginian Deer, *Penn. Syn. 51*. t. 9. f. 2; *Quad. i. 104*. t. 11. f. 1.


Cariacou, *Buffon, H. N.* xiii. 347. t. 44.


Hab. N. America.

Female, imperfect, white gland on tarsus very distinct. N. America. Presented by the Earl of Derby.

Osteology, t. 33. f. 2, 3.


Cariacou, *Dauz. B. H. N.* xii. t. 45.

Cerf de la Louisiane, *Cuvier, Oss. Foss. iv. 33*. t. 5. f. 1–16; *Dale, Phil. Trans. n. 444*. fig., 1735.


Horns of adult, large, with three branches on upper edge of beam.

Horns, larger and thicker, with five branches on upper edge of beam, inner basal branch very long and forked. North America.

Horns, very large, with many branches on upper edge of beam, inner basal branch thick and forked. Mexico. From the Royal Society’s Museum. (Cervus mexicanus.)

Single horn, like the preceding one, but anterior basal branch very long, produced, and an additional elongate branch from the lower edge of the middle of the beam. (Cervus mexicanus, Mexican Deer, *Penn. Syn. 110*. t. 9. f. 1; *H. Smith, Griffith A. K. iv. t. 163*. f. 3.)

Single horn, with the upper branches on the beam rather irregular, and three produced and elongate, forked branches from the lower edge of the upper part of the beam. (Cervus clavatus, *H. Smith in Griffith A. K. iv. t. 163*. f. 4?)


Skull, male. Hudson’s Bay. Presented by the Hudson’s Bay Company.

Skull, female. Hudson’s Bay. Presented by the Hudson’s Bay Company.

Horns. Hudson’s Bay. Presented by the Hudson’s Bay Company.

Seven pairs of horns. N. America.
Two skeletons. From the Zoological Society's Collection.
Skull. Hudson's Bay. Presented by the Hudson's Bay Company.
Skull. Hudson's Bay. Presented by the Hudson's Bay Company.

The White-tailed Deer inhabit the Oregon, and they were found to be most numerous near the coast of the Pacific Ocean. Their range on that coast is up to the fifteenth degree of latitude, and probably much further north. At the Umpqua River, in lat. 43°, they give place to the Black-tailed Deer, C. Lewisii, which occupy the country south of that parallel to the almost entire exclusion of these.—T. Peale, U. S. Explor. Exped. 38.

We believe that the same species of Deer inhabits all the timbered or partially timbered country between the coast of the Atlantic and Pacific Oceans. They vary in size, as all the animals of this genus do, in different feeding-grounds, but they are specifically the same. When alarmed, this species always erects its tail, which being white beneath, is a conspicuous object, and when running the tail is kept erect and wagged from side to side. —T. Peale, ibid. 38.


Fulvous grey; in winter ——? Tail fulvous grey (without hair), half as long as the head. Muzzle fulvous grey, scarcely spotted. Metatarsal tuft evident, brown. Horns broad.

Cervus mexicanus, Gmelin, S. N.; Licht. Durst. t. 18, & jun.; Sundevall, Pecora, 59; Cuvier, Oss. Foss. iv. 37. t. 5. f. 23, horns?
Elephalces mexicanus. J. Brookes, Mus. Cat. 62.


Fur brownish fulvous: does not change in winter or age. Tail yellow above, elongate. Metatarsal tuft small. Nose brown, side of muzzle white, with an oblique black band from the nose to the mouth.

Roebuck, Dobbs, Hudson's Bay, 41, 1744.
Fallow or Virginian Deer, Cook's Third Voyage, ii. 292, 1778.
Long-tailed Jumping Deer, Umfreville, Hudson's Bay, 190, 1790.
Deer with small horns and long tail, Gass. Journ. 55, 1808.
Long-tailed Red Deer, Lewis & Clark, Travels, ii. 41.
Small Deer of Pacific, Lewis & Clark, Travels, ii. 342.
Common Fallow Deer with long tails, *Lewis & Clark, Travels*, iii. 85.


*Cervus campestris* (Mazame), *F. Cuvier, Mam. Lithog.* t., not Desmarest.

Jumping Deer, *Hudson's Bay Traders.*
Chevreuil, *Canadian Voyagers.*
Mowitch, *Indians west of Rocky Mountains.*
Apesssee-mongsoos, *Cree Indians.*

Hab. N. America; Hudson's Bay; Columbia River.

**Osteology.** a, b. Skull, male and female. Columbia River. Presented by Hudson's Bay Company.

This species does not, on the east side of the Rocky Mountains, range further north than latitude 54°, nor is it found in that parallel to the eastward of the 106th degree of longitude. Mr. Douglas states, "It is the most common Deer in the district adjoining the River Columbia, more especially on the fertile prairies of the Cowalidske and Multnornah rivers, within 100 miles of the Pacific Ocean."

In running the tail is erect, wagging from side to side. Its gait is two ambling steps and a bound exceeding double the distance of the steps.—*Richardson.*

Dr. Richardson described a female killed in February as fawn-coloured, mixed with black; tail fawn-coloured, white at the tip and beneath. Mr. Douglas, however, described the upper part of the animal as reddish brown in summer, and changing to light grey in winter; so his animal may be a different species.

Skull elongate, narrow. Face rather produced, tapering, flattened on the sides. Intermaxillars rather broad, not reaching to the nasal bones, and fitting into a notch in the front upper edge of the maxilla. Infraorbital pit moderate; fissure very large, triangular, open. Nasals, each notched in the middle of the fronts. 

- **Male:** length entire 11 inches; from front of orbit to nose 6; width at lower edge of orbit 4$\frac{3}{8}$; of nose just before first grinder 1$\frac{1}{2}$; of skull 3.

- **Female:** length entire 9$\frac{3}{8}$ inches; from front of orbit to nose 5$\frac{4}{5}$; width at lower edge of orbit 3$\frac{1}{2}$; upper side of orbit 3$\frac{1}{4}$; of nose just before first grinder 1$\frac{5}{8}$; of skull 2$\frac{7}{12}$; suborbital pit rather smaller than in the male.

A male and female in winter dress, from Fort Colville on the Columbia River, were sent by the Hudson's Bay Company to the Museum May 26, 1843: they arrived without hair or skin.
4. **Cariacus? nemoralis.** The Cariacou Deer.

Fulvous grey in winter. Tail above blackish (without the hair), half as long as the head. Nose brown. Muzzle white, with a black oblique streak from nose to mouth. Metatarsal tuft minute, obsolete. Ears covered externally with very short greyish hair.

C. Nemoralis (H. Smith?), Sundevall, Pecora, 59.

Cerf blanc ou Cerf des Paletuviers, Cuvier, Oss. Foss. iv. 36. t. 5. f. 22 a.

Chevreuils d’Amérique, Daubent. Buffon H. N. vi. t. 37; Cuvier, Oss. Foss. iv. 36. t. 5. f. 19–22.

Cervus mexicanus, part., Pennant, Quad., from Buffon.

Biche des Savannes, La Borde, Buffon H. N. Supp. iii. 126; "young in winter," Cuvier, l. c.

Biche des Paletuviers, La Borde, Buff. H. N. Supp. iii. 126; "adult male," Cuvier, l. c.

**Hab.** Shores of Mexican Gulf; Guiana; Mexico. Cayenne; M. Poiteau. Surinam; M. Baillon.

5. **Cariacus punctulatus.** The Californian Roe.

Dark reddish brown (in summer), minutely punctulated by the yellow tips of the hair; in winter greyish brown. Chin-mark distinct. Ears elongated, nakedish. Base of the ears, orbits, round the muzzle, underside of tail, and the upper part of the inside of the legs, white. Forehead, line down the face, and narrow streak on upper part of the nape, black. Legs brown. A very narrow, indistinct streak on the middle line of the rump yellowish. Metatarsal tuft none. Tail like back, with a blackish tip.


There is a female of this species in the Zoological Gardens; it is much smaller and darker than *C. Virginianus*, and it differs in the hair being dark, with a distinct, yellow, subterminal band.

*Cervus gymnnotis* is described as very like *C. nemoralis*, only differing in the tail being rather longer and pale above; the outer surface of the ears brown and nakedish. Metatarsal tufts none.

Cervus Gymnotis, Wiegmann, Isis, 1833; Wagner, Supp.; Sundevall, Pecora, 39.

**Hab.** Columbia. Mus. Berlin. Doubtful if distinct from the former or *C. nemoralis*. 

The tail black above towards the extremity, yellowish white beneath, covered with hair at all seasons, and not carried erect when running. Fulvous (in summer). Hair very soft, not rigid. Forehead and upper part of face before the eyes blackish. (In winter, fur very thick, quilled, waved, brittle.) Inside of the legs and belly white. Chin-band distinct, black. Front hoofs narrow, elongate. Horns like C. Virginianus, but generally more slender, and commonly without the basal antler.

Black-tailed Deer, Anglo-American in Oregon.

Cervus Macrotis β. Colombiana, Richardson, Fauna Bor. Amer. i. 257.


Hab. California, between Columbia River and Umpqua River; seldom seen east of the Cascade range of mountains.

Osteology. a, b. Skull, male and female. Columbia River. Presented by the Hudson's Bay Company.

The Short or Black-tailed Deer in the winter is covered with very thick, waved, tubular, brittle quills or hair, of a grey colour, with a rather darker subterminal band. The legs are yellow brown. The tuft on the inside of the hock very large. The tuft on the outside of the tarsus large, covering an oblong, bald, calloss spot, about an inch or an inch and a half long, which is hard and horny in the dry specimen.—T. Peale.

Skull rather broad. Forehead concave. Face rounded on the sides. Intermaxillars broad, not reaching to the nasal. Nasal dilated and bent down on the side behind, with a deep central notch. Suborbital pit large, deep, triangular. Suborbital slit large, triangular, open.

Skull of Male: Larger. Suborbital pit very large, triangular, deep. Intermaxillar not reaching near the nasal. Length entire $12\frac{3}{4}$ inches; from front of orbit 6$\frac{1}{2}$; width at lower side of orbit 5$\frac{5}{8}$; upper side of orbit 5$\frac{3}{8}$; of nose just before first grinder 2$\frac{9}{16}$; of skull 3$\frac{3}{4}$.

Skull of Female: Smaller. Suborbital pit smaller, narrower, oblong, linear, rather deep. Intermaxillar reaching nearly to the nasal. Length entire 11 inches; from orbit 6$\frac{3}{8}$ inches; width at lower side of orbit 4$\frac{9}{16}$; at upper side 3$\frac{9}{16}$; of nose just in front of first grinder 2$\frac{1}{16}$; of skull 2$\frac{11}{16}$. 
Length 6' 1½"; tail 10"; height at shoulders 3' 2"; glandular sac on tarsus 1½ inch long.

Male and female winter dress was sent from Fort Colville, Columbia River, May 26, 1843, by A. Macdonald, Esq., and presented by the Hudson's Bay Company, but arrived without hair.

The Black-tail Deer never carries its tail erect when running, and viewed from behind shows two narrow white lines of hair, instead of the large, white, and elevated tail of the Virginian Deer.

Var. 1. With a basal antler on the inner side of the horn, which was directed upwards and backwards.
Hab. Oregon; T. Peale, l. c. 41.

Var. 2. No internal basal antler.
Hab. California; T. Peale, l. c. 41.

There is a skull of a young male American Deer which was in the Zoological Gardens, the skin of which has not been preserved. It is intermediate in character between the other species; it has the rather slender face of the Virginian Deer; but it has a much larger, subtriangular, suborbital pit, of the same form, but only about two-thirds the size of the pit in the skull of the broad-faced Long-tailed Deer. It indicates the existence of another species, that may be characterized by the skull. Nasals: each bifid in front. Intermaxillar nearly reaching to the nasals. The length entire 9 ¾ in.; of face from orbits 5 ¾ in.; width of lower edge of orbit 4 ½ in.; of upper edge of orbit 3 ½ in.; of face in front of the first grinder 1 ½ in.; of skull 2 ½ in.

** Front hoof broad, cordate. Tail not hairy beneath.


Brownish fulvous. Chin without any, or only an indistinct band. Tail pale ferruginous, with a black tuft at the end, and without any hair beneath. Ears very large. Hoofs of the fore feet broad, cordate, nearly as broad as long, flattened and concave beneath. Horns larger and more spreading than in C. Virginianus.

Var.? Jumping Deer, Umfreville, Hudson's Bay, 164.
Black-tailed or Mule Deer, Gass. Journ. 55; Lewis & Clark, i. 91, 92, 106, 152, 239, 264, 328, ii. 152, iii. 27, 125; James, Long's Exped. ii. 276; Godman, Nat. Hist. ii. 305.
Mule Deer, Warden, United States, i. 245.
Cerf Mulet, Desm. Mamm. 443, notes.
Le Daume fauve à queue noire, Warden, Etats Unis, ed. Gall. 640.
Mule Deer, Anglo-Americans of the Rocky Mountains.
MAMMALIA.


Cervus macro-tis, Say, Long’s Exp. Rocky Mount. ii. 88, 254; H. Smith, Griffith A. K. v. 794; Fischer, Syn. 444. 615; Sundevall, Pecora, 59; Richardson, Faun. Bor. Amer. 254. t. 20; Peale, U. St. Expl. Exp. 41. t. 10. ined. fig. at p. 43, fore-feet; Sabine, Franklin Journ. 667; Harlan, Fauna, 243 (Great-eared Deer); H. Smith in Griffith A. K. iv. 133, v. 794 (Black-tailed Deer).


Hab. Arkansas; Rocky Mountains; on rocky hills covered with trees.

Rather larger than Cervus Virginianus, and having more the general aspect of the Wapiti; destitute of the black submaxillary marks which are always present on C. Lewisii and C. Virginianus. Horns larger and more spreading; Hoofs rounded, the under surface concave. Tail pale ferruginous, destitute of hair beneath, and having a tuft of black hair at the extremity. In summer pale ferruginous, darkest on back. Chin, throat, and inside of thighs and belly, white. Hair flattened and undulated. Total length 67 in.; tail 7½ in.; height at shoulders 36 in.—T. Peale.

This species is most abundant on the eastern slope of the Rocky Mountains, and delights in rocky hills covered with cedars and pine-trees. By the flattened and concave formation of the hoofs, they are enabled to climb the rocky steeps with much greater facility than other species of Deer, and for the same reason we infer that they are more at ease in the snowy regions of the mountains.—T. Peale, l. c. 43.

Mules between Cervus Virginianus and C. gymnotis have been described.—Pucheran, Comptes Rendus, Acad. Sci. 1849, 774.

According to M. Pucheran, the chief difference between C. Virginianus and C. gymnotis is, that the former has the chest and belly white, and C. gymnotis the belly white and the chest brown.

Doubtful Species.

1. The Cariacou Deer, Cervus nemoralis, H. Smith in Griffith A. K. iv. 137. t. & v. 798; Fischer, Syn. 617, described and figured from a pair said to come from Virginia, and is also said to inhabit Honduras (see p. 138). It appears by the figure of the horns rather to belong to this genus than to Coassus. It is a species yet to be identified. Professor Sundevall regards it as a species of Cariacus.

C. virginianus var., G. Cuvier, Oss. Foss. 
Hab. Cayenne; M. Poiteau.

Only described from a single horn from Cayenne.

3. Cervus Savannarum, Cabanis & Schomburgk, Reisen in Britisch Guiana, iii. 785.

4. Orenoka Deer.—There is imported into London under the above name, from Central America, the flat skins of a large species of Deer, of a bright dark red brown colour, with the chin and under part of the body white, and a blackish tail. The hair of the back is short and rather adpressed. The animal appears to be about the size of a small Stag, C. Elaphus. These skins are imported by the North-West American Fur Company to be tanned into leather.

5. The Yutacan Deer.—The North-West American Fur Company import, under the above name and from Yutacan, the skin of a smaller Deer, about the size of the Virginian Deer. The fur of the back is very short, of a red brown colour with blackish tips. They differ from the skins of the Virginian Deer, imported by the same Company from different parts of America, in the shortness and greater stiffness of the hair.


Hair very short, close-pressed, grey, minutely white grisled. 


Horns lyrate, half the size of those of C. axis, and with only a single basal posterior snag. 
These two species are only known from the above descriptions.

B. Horns simple.

Subulidae, J. Brookes, Mus. Cat. 62, 1828.

5. Coassus.

Horns simple, rudimentary, shelving back. Ears short, broad, rounded, nakedish. Tail short. The facial line rather convex. The fur short, of the forehead (in both sexes) elongate, forming a
rhombic tuft between the horn and face. Legs without any tuft on the outer sides of the metatarsus, but with a pencil on the inside of the hocks. Skull with a very small, shallow, suborbital pit, and supraorbital foramen in a groove. Confined to South America.

They all emit a strong odour like porcupines. They cast their horns like the other Deer.

Subulo, H. Smith, Griffith A. K. v. 1827.
Subula, Lesson, Mamm. i. 273; Nov. Tab. R. A. 174.
Subulus, J. Brookes, Cat. Mus. 62, 1828.
Cervus, sp., Renger, 343.

* Skull face rather elongate. Suborbital pit large.


Pale brown. The hair dirt-coloured brown, with a yellow subterminal band which wears off; a paler spot over the eye. Young: Brown, white spotted, spots of sides unequal. Nape dark.

Skull elongate. Suborbital pit broad, subtrigonal, shallow. Grinders moderate. Infraorbital ridge very distinct, sharp-edged. Intermaxillars not reaching to the nasal, but fit into a notch in the maxilla.

Cervus nemorivagus, F. Cuvier, Dict. Sci. Nat. vii. 485; Cuv. Oss. Foss. iv. 54. t. 5. f. 50; Fischer, Syn. 446. 618; H. Smith, G. A. K. iv. 142. t.; Sundevall, Pecora, 60; Licht. Dargst. t. 21.
Coassus nemorivagus, Gray, Proc. Zool. Soc. 1850; Mammalia, t. 1, t. 2. f. 1; List Mam. B. M. 174; Cat. Ost. B. M. 64.
Cervus nemorum, Desm. Mamm. 446.
Cervus mangivorus, Schrank, Wett. Trans. iv. 326.
Cuguacu-Apara, Marcg. Bras. vi. 235.
Young! Moschus delicatulus, Shaw, Mus. Lever. t. 36.
Guazu-viva, Renger, 369.
Hab. Brazils.

a, b. Females. Brazils.
c. Young, with a distinct line of white spots on middle of the back; sides spotted. Brazils.

Tragulus Surinamensis, Klein. Moschus Americanus, Erxl. M. delicatulus, Shaw, Mus. Lever. t. 36; Seba, i. t. 44. f. 2.
** Skull face short, broad. Suborbital pit small.

2. **Coassus rufus.** The Cuguaçu-ete or Pita.


Var. Young: Reddish, white spotted, spots of sides unequal. Nape with a distinct, white-edged, dark central streak.

Var. with white rings above the hoofs.

*Cervus rufus, F. Cuvier, Dict. Sci. Nat. vii. 485; Cuvier, Oss. Foss. iv. 53. t. 3. f. 41, 42, t. 5. f. 44; H. Smith, G. A. K. iv. 140. t.; Fischer, Syn. 446, 618; Licht. Darst. t. 20; Sundevall, Pecora, 60; R. Schomburgk, Reisen in Britisch Guiana, 784; Pr. Max. Abbild. t.; Renger, 356.


Cervus simplicicornis (Apara β.), H. Smith, Griffith A. K. iv. 141. t.


Subulus americanus, J. Brookes, Cat. Mus. 62, 1828.

Cariacou de la Guyane, Buff. ix. 90.

Biche rouge, Buffon, Supp. iii. 126.

Gouazou-pita, Azara.

Guazu-pyta, Renger, 356.

Hab. South America.

Young, in spirits? S. America.

Male and female. S. America.

Anat. t. 35. f. 4.

Cervus rufus, Cuvier, Oss. Foss. iv. t. 3. f. 41, 42, horns; t. 5.

f. 44, skull.

Skeleton, male. From Mr. Brandt's Collection.


Skull of young. S. America.


Bright shining red, with neck and head grey, forehead darker. Hocks and front of fore legs grey. Stripe in front of the eye, and under surface of the tail, white. Muffle slightly arched above.

Ears moderate.


Hab. Brazils.

This species chiefly differs from the former in the form of the muffle, and in the presence of the white streak over the eyes. There is a male at Knowsley, t. , t. ; and a pair in the Gardens of the Zoological Society, t. . f. 5.


Bright pale red brown. Head and neck grey. Orbits pale brownish. Spot on side of upper lip, chin, belly, hinder side of fore, and front side of hinder thighs, and under side of tail, white. Crown dark grey brown. Ears very large, broad, acute, more than half the length of the head, with two lines of hairs within.


There is a female of this species in the Gardens of the Society; it greatly resembles the Indian Muntjac in the distribution of its colour.

In the British Museum there are two skulls which belong to the species of this division. They have the face shorter and thicker than the skull of *C. nemorivagus*, and the nasals are wider behind; the suborbital pit small or less compressed, and the grinders larger. The first belongs to a young specimen in the Museum Collection apparently of *C. rufus*; it has a small, slightly impressed pit just in front of the edge of the orbit. The second belongs to a more adult female, without any skin, sent from Para by Mr. Reginald Graham; it is considerably larger than the preceding, and there is scarcely any visible impression in front of the orbit, only a slight concavity of the general surface.

*Cervus nanus*, Lund; Lesson, *N. Tab. R. A.* 173, 1842 (not described?).

*Hab.* Brazils. May be one of the preceding.

6. **Pudu**.


*Cervus*, sp., Bennett.
*C. § Capreolus*, sp., Lesson.
*Capra*, sp., Molina.
*Antilope*, sp., Blainville.
*Antilocapra*, sp., Lesson.

1. **Pudu humilis.** The *Venada*.

Brown black and pale grisled. Neck blackish brown, punctuated with white. Lips, orbit, ears, legs, and under part of body, bright pale bay. Throat and inner side of thighs paler. Hair of back with a broad, blackish, subterminal band and pale brown


Cervus (Capreolus?) humilis, Lesson, N. Tab. R. A. 172, 1842.

Cervus Rufus, Wagner, Supp. iv.

Capra Pudu, Molina.

Chevreul (de Chili), Pöppig, Froriep's Notiz. 1829; Férussac, Bull. Univ. xix. 95, 1829.


Antilocapra Pudu, Lesson, Nov. Tab. R. A. 182.

Antilocapra Dieranocerus Temamazama, H. Smith, Linn. Trans. xiii. 36; Griffith, A. K. ii. 866; Fischer, Syn. 482, 647.

Mazame, Hernand. Mex. ix. 14, 324; Seba, Thes. i. 69. t. 42. f. 3.

Cervus Macatlichcheltic, Seba, Thes. i. 69. t. 42. f. 4.

Hab. Chili, Concepcion and Chiloe; King.

A male. Chili. From the Zoological Society. (The specimen described by Mr. Bennett.)


Skull. Chili. (The specimen described by Mr. Bennett.)


Cutting-teeth none above. Horns none. The hinder edge of the metatarsus more or less naked. False hoofs distinct.


Moschidae seu Ecornis, J. Brookes, Mus. Cat. 60, 1828.

Moschidae (part.), Ogilby, P. Z. S. 1836, 135.


Moschina, Gray, Ann. Phil. 1825; Cat. Mamm. B. M. xxvii. 172, 1843; Selys Longchamps, 1842.

Ruminantia c. acerata, part., Brown, Index Palæont. ii. 710.


Moschisidae, Lesson, Nov. Tab. R. A. 175.

The only character by which the Musks, as established by Linnaeus and others, differ from the genus Cervus, consists in the absence of horns, for the elongated canines are common to it and most of the Indian species of Cervus, especially the Cervus Muntjac.
Synopsis of the Genera.


1. Moschus. Canines of males very long.


I. Fur elastic, thick, brittle. Throat and hinder edge of the tarsus covered with hair. Males with an odoriferous gland.

1. Moschus.


Moschus, Gray, P. Z. Soc. 1846; Knowsley Menag.; List Mamm. B. M.

Moschus, sp., Linn. S. N. ed. 6. 13. 1748, ed. 10. 66. 1758, ed. 12. 91. 1766; Erxleb. S. A. 319, 1777; Storr, 1780.

M. Moschiferus, Illiger, 1811; Lesson, Nov. Tab. R. A. 175.

Tragulus, sp., Brisson, Reg. Anim. i. 67, 1762.

The Musk are confined to the snowy regions, amid the glassy precipices of which they leap with a power and security far more than Caprine, though, owing to the unequal length of their legs, they can descend slopes only with difficulty, and falling are caught; they cannot climb at all as Goats do, and are solitary. They rut in winter, and produce young in May or June,
gestating 160 days. In six weeks the young can shift for themselves, and the mother drives them off. They can procreate ere they are a year old, and live ten or fifteen years. One is usually produced at a birth, in cavities of the rocks. Gall-bladder constant.

The tail-gland of the Musk is very large, and covers the whole tail nearly, and has a linear, longitudinal pore on each side, and an abundant secretion.

The preputial gland of the Musk is analogous to that of the Civets and the Screw-tail (Paradoxurus); it is placed on the prepuce, the penis opening in the midst of it: this organ is clearly subservient to sexual purposes, and so probably are several others, though the eye-pits have been variously referred to the facilitation of breathing and of smelling. The supposed end of the interdigital glands and pores, or feet-pits, viz. the lubrication of the feet and preservation of the hoofs in hot sandy deserts, is clearly erroneous, since the Thar has these organs of enormous size in all the four extremities, though it be the tenant of moist, cool mountain forests. It is probable that the secretion from the foot-pores enables these animals to find one another in those wildernesses of vast forest-trees and dense undergrowth which constitute their range.—Hodgson.

The Musk is said to derive its peculiar odoriferous secretion from feeding on the Kastooree plant, a kind of ground-nut which is strongly impregnated with the same pungent scent, and which the animal digs up with its long tusk.—Ogilby in Royle, Himal. i. lxxi.

1. Moschus Sibiricus. The Kubarga.

Ash brown, beneath paler. Throat black or ashy, with a definite white streak on each side.


Moschus Sibiricus, Pallas, Spic. Zool. xiii. 29. t. 4, 5, 6; Gray, Cat. Mamm. B. M. 172; List Osteol. Spec. 63; Knowsley Menag.

Moschus moschiferus, Schreb. Saugth. 944. t. 242, 242 a; Shaw, Lever. Mus. i. t. 3?; Wrangle’s Siberia, 374.

Moschus moschiferus var. Altaici, Sundevall.


Hab. Siberia; Altai Mountains; Lake Baikal; Gmelin. Borders of Arctic Ocean; Wrangle. Mongolia, Eschsch.

Male and female. Siberia. From the Museum of the Royal Academy of Petersburg.
Osteology.


The Musk Deer are found nearly to the arctic circle; they are abundant near Verkhoiansk in North Siberia (Lat. 67° 7', E. Long. 134°), and called Kabarga. A pound of musk is commonly sold from 10 to 15 roubles.—*Wrangle's Siberia and Polar Sea*, by Sabine, 374, 1844.


Dark brown, chest and belly rather paler. Throat and chest with indistinct, pale cross bands.


Animal moschiferum, *Raii* Quad. 124; *Cleot. Mus.* 661. t. 666.

*Capreolus Moschus*, Gesner, *Quad.* 695; *Jonston, Quad.* 55. t. 39.

*Capra moschus*, *Aldrov. Bisule.* 743.

*Muskus, &c.*, *Ysbr. Reis.* 45. fig.


*Moschus, Schrêk. Monag.* t. 44.


*Tragulus moschiferus*, *Klein*.

*Tibet Musk*, *Penn. Syn.* 56. t. 10. f. 1; *Quad.* i. 112. t. 12. f. 1.


*Moschus Kacharensis*, *Hodgson, Cat. MSS.* v. t. 3.

*Moschus Moschus var.*, *Ögilby in Royle, Himal. i.* LXXI.


Hab. Thibet; Nepal.


Male (in bad state). India.


A male, with a dark streak on the nape, and a large dark spot between the shoulders. Nepal. Presented by B. H. Hodgson, Esq.

Osteology. Hodgson, J. A. S. Beng. x. 795. t.
Two skeletons, wanting bones of the feet. Nepal.

Icon.
Drawing of skull of male.—Hodgson, Icon. ined. B. M. t. 186. f. 5, 6.
Drawing of young male.—Hodgson, Icon. ined. B. M. t. 188. f. 1.
Drawing of male and female.—Hodgson, Icon. ined. B. M. t. 189.
Drawing of female.—Hodgson, Icon. ined. B. M. t. 192. f. 1.
Musk.—Hardw. Icon. ined. B. M. n. 10,974. t. 82, t. 83, skull.

Dark brown. Throat, chest, belly, and inside of the ears, pure white.
A male and female.
An imperfect flat skin of a female, rather darker (like a bleached specimen of M. saturatus).

Icon.
Drawing of young male.—Hodgson, Icon. ined. B. M. t. 188. f. 2.
Drawing of male, female and young.—Hodgson, Icon. ined. B. M. t. 190.
Drawing of female.—Hodgson, Icon. ined. B. M. t. 193. f. 3.

Grey brown. The ears, orbits, throat, chest, abdomen, and inner sides of the legs, brilliant yellow.

Moschus moschiferus var., Sundevall, Pecora, 118.


Osteology, t. 25. f. 1.


Icon.

Drawing of male and female.—Hodgson, Icon. ined. B. M. t. 191.

Drawing of female.—Hodgson, Icon. ined. B. M. t. 192. f. 2.

II. Fur close-pressed. Throat and hinder edge of the tarsus more or less naked. Males without any peculiar odoriferous gland. Throat white streaked. Young coloured like the adult. Pigmy Musks.

Pigmy Musks, Gray, Knowsley Menag.


Throat entirely covered with hair. Fur white, striped and spotted. The legs are short and rather stout. The hinder edge of the metatarsus covered with hair, but on its outer side, a little below the hock, a rather large, smooth, naked prominence, red when alive.


Musk, sp., Penn.


Tragulus, sp., Brisson, R. A. 95, 1756.

Tragulus, Sundevall, Pecora, 118, 119.

The Pisora inhabit the forests of India, near to, but without the various ranges of hills.—Hodgson.

The flesh is excellent; it lives in the dense woods of the Dukhun, not in the plains.—Sykes, P. Z. S. 1831.


Chevrotain, &c., Buffon, H. N. xiii. 315.
Memina ou Chevrotain de Ceylon, Buffon, Supp. iii. 102. 315. t. 15.
Meminna, Knox, Ceylon, 21; Shaw, Zool. ii. 256, t.
Indian Musk, Penn. Syn. 59. t. 10. f. 2; Quad. i. 127. t. 127;
Knight, M. Anim. Nat. f. 572, 574.
Pissay, Hamilton, Voy. E. Ind. i. 261.
Tragulus Meminna, Sundevall, Pecora, 63.
Meminna Indica, M. Malaccensis, Gray, Cat. Mamm. B. M. 172;
List Osteol. B. M. 63.
Tragulus minimoides (or Bijay), Hodgson, Journ. Asiát. Soc.
Bengal, x. 914.
Hab. India; Madras; Ceylon.
Young. India.
Adult. India.
Young. India.
Meminna Malaccensis.—Gray, List Mamm. B. M. 172.
Osteology, t. 24. f. 3.
Skull of adult. India.
*Skull and bones of body. India.

ICON. Hardw. Icon. ined. B. M. n. 10,975. t. 117 a, b, c.

3. HYEMOSCHUS.

Underlip and chin rather nakedish, with scattered hairs. The hinder edge of the metatarsus hairy, with a large callosity on the outer side near the heel. Two lateral toes elongate, with large tapering hoofs. The intermaxillary is very short, oblong, truncated behind, and placed on the front end of the truncated maxilla. The sides are spotted (like the Meminna).

These animals have much the habit of pigs. They take their food in the water; are called Deer Pigs by the French colonists in West Africa.

Dr. Hugh Falconer (Proc. Zool. Soc. 1843) gave some account of the osteology of the foot of this animal; and in his MSS. he informs me he has proposed to call the genus Amphimoschus. M. de Blainville has regarded it as the recent type of Anoplotherium. In the form of the feet it is very nearly allied to a fossil genus found in Auvergne, which M. A. Bravard has described under the name of Cainotherium (1835).

The metacarps of Moschus aquaticus are distinct along their whole length; its fore-leg, from the carpus downwards, is un-
distinguishable from that of the Pecary; and its succentorial toes are as much developed as in the last-mentioned animal.

As Dorcatherium of Kaup breaks down the empirical distinction between the Ruminants and Pachyderms as regards the number of the teeth, so does the Moschus aquaticus as regards the structure of the feet.—Falconer & Cauley, Proc. Geol. Soc. 1843, 240.


Amphimoscus, Falconer, MSS. 1843.

Cainotherium, sp., Bravard, 1835.

Moschus, sp., Lesson, Nov. Tab. R. A. 175, 1842.

Lesson refers M. aquaticus with doubt as a synonym of Moschus Javanicus.—Nov. Tab. R. A. 175.


Brown. Two diverging streaks on the throat, chest, spots on back, a streak along each side, front edge of thighs, a spot over each hoof, and end of tail, white.

Moschus aquaticus, Ogilby, P. Z. S. 1840, 35; Falconer, P. Geol. Soc. 1843; Wagner, Wiegm. Arch. viii. 51.


Moschus Stanleyanus (misprint for aquaticus), Sundevall, Pecora, 64.

Boomorah, Negroes of Sierra Leone.

Water Deer, Colonists at Sierra Leone.

Biche Cochon, French Colonists in W. Africa.

Moschus Javanicus var.?, Lesson, Nov. Tab. R. A. 175.

Hab. W. Africa. Bulham Creek, Sierra Leone; common. Whitfield.

Two adult. West Africa; Gambia. Presented by the Earl of Derby.

Osteology, t. 25. f. 2.


*Skull and scapular. Sierra Leone. Presented by the Earl of Derby.

4. Tragulus, Pallas.

Throat with a nakedish, concave, subglandular, callous disc between the rami of the lower jaw, from which a band extends
to the fore part of the chin. The hinder edge of the metatarsus nearly bald and slightly callous. Fur soft, adpressed. The intermaxilla elongate, subtriangular, extending up to the side of the nose.

Tragulus, Pallas; Gray, Cat. Mamm. B. M. xxvii.
Tragulus, sp., Brisson, Reg. Anim. 95, 1756; Sundevall, Pecora. 118.
Tragulus § B, Sundevall, Pecora, 63.
Napu, Lesson, Nov. Tab. R. A. 175, 1842.
Tragus, sp., Klein.


1. Tragulus Stanleyanus. The Stanley Musk.


Moschus ecaudatus, Temm. MSS. Mus. Leyden (1845); Sundevall, Pecora, 63.

Hab. Ceylon.


Anat. t. 25. f. 3.

*Skull. Presented by the Earl of Derby.


Moschus Javanicus, Gmelin, S. N. i. 174; Bennett, Zool. Gardens, 41; Raffles, Linn. Trans. xiii. 261; Donnd. Zool. Beytr. i. 583, 1792; Rapp. Wiegm. Arch. 1843, 43. t. 2; Mus. Leyd. 1852.

Moschus Indicus, Gmelin, S. N. i. 172; Schreb. Sauth. 962. t. 245, not Brisson.
Tragulus Napu, Sundevall, Pecora, 63.

Hab. Sumatra; Borneo; Java.

This species, so well described by Pallas, is easily known by its larger size and the ashy grisled neck. The Kanchil has a yellow neck with a black nuchal streak.

3. **Tragulus pygmeus.** The Kanchil.

Fulvous varied with black. Sides of neck and body pale yellow, black tipped. Streak along nape blackish.

**Moschus pygmeus, Linn. Syst. Nat. i. 92.**


**Moschus Kanchil, Raffles, Linn. Trans. xiii. 262; Fischer, Syn. Mamm. 441; Waterhouse, Cat. Mus. Zool. Soc. 31, 1838.


Chevrotrin de Java ou Kanchil (M. Javanicus), *F. Cuvier, Mam. Lithog. t. 10. t. 99.

**Moschus Griffithii, Fischer, Syn. 1.; Griffith, A. K. t.


**Tragulus affinis, Gray, List Mamm. B. M. 176.

**Tragulus pygmeus, Sundevall, Pecora, 62; Gray, Knowsley Menag. t.

**Hab. Asiatic Islands; Java; Malacca; Penang; Borneo.

Java. Presented by General Hardwicke.

Female. Java. Presented by the East India Company.

Young.


**Var. 1.** Belly with a broad fulvous streak.


**Var. 2.** Under surface pale fulvous, with four white streaks.

**Chevrotain, Buffon, H. N. xii. 342. t. 42, 43.


?? M. Pelandoc, H. Smith, Griffith A. K. v. 769; Lesson, Mamm. i. 258.

Female; belly streak wider. Presented by General Hardwicke.

Young. Presented by General Hardwicke.

Osteology.

Three skulls. India.

**Icon. Hardw. Icon. ined. B. M. n. 10,975. t. 118, 119, 120. n. 10,974. t. 85.**
The synonyma of the species of *Tragulus* are exceedingly confused. From the very imperfect manner in which they are described and figured, it is impossible to identify with any of the foregoing species, or separate from them as distinct,

1. The Pelandoc figured in Marsden's *Sumatra*.
2. The Pigmy Musk of Sumatra, figured in Mr. Griffith's edition of *Cuvier's Animal Kingdom* (v. 62. t.), on which Fischer has established his *Moschus Griffithsii* (Syn. Mam. 414).

The *Moschus pygmaeus* is an Antelope; the hinder part of the tarsus being covered with hair; the false hoofs very small and rudimentary, and entirely hidden under the fur of the feet.

*Moschus Americanus* and *Moschus delicatulus*, or Leverian Musk of Shaw, are undoubtedly the fawn of Deer. It is curious that Dr. Shaw quotes as a synonym of the last-named species the figure of Seba, on which alone the *Moschus Americanus* is founded, while, at the same time, he enumerates *Moschus Americanus* as a distinct species.

**Tribe 5. Camelina.**

Cutting teeth eight above and below. Horns none. Hoofs small, compressed; false hoofs none.


*Camelus*, Linn.; *Cuv. T. E.* 1798.
(Unguiculata bifida) *Camelinum*, Raui Syn. 60, 1693.
*Camelina*, Gray, Ann. Phil. 1825; *Cat. Mamm. B. M.* xxvii.
*Tylopoda*, Illiger, Prod. 102, 1811; *Rüppell, Verz. Senck. Samml.* 184, 1845.
*Les Chameaux*, *F. Cuv.* 1829.
*Cameliers*, Pomet, l. c. 183.
Camelidse seu Ecornis, J. Brookes, Mus. Cat. 60, 1828.

They fold the feet under their body when they rest, with their chest on the earth, hence the knees and chest are generally callous.

SYNOPSIS OF GENERA.


1. CAMELUS.

Back with one or two humps. Grinders $\frac{6-6}{6-6}$; anterior ones conical, far apart. Toes broad; sole nearly orbicular, only slightly separated in front. Tail short, tufted.

Living on leaves. Peculiar to the temperate and warmer parts of Asia and Africa, and naturalized in Southern Europe.

Camelus, sp., Linn.

1. Camelus Arabicus. The Sghimel or Dromedary.

Back with a single hump.


Camelus Luk, Eversmann, Bucharia.

Camelus arabicus, Desmoul. Dict. Class. H. N. iii. 452; Mem. Mus. x. 221; Sundevall, Pecora, 104.


Camelus Dromas, Gesner, Quad. 171. fig. 172; Alpin. Ägypt. i. 223. t. 12; Pallas.

Camelus Arabius, Plin. H. Nat. viii.

Camelus Bactrianus, Aldrov. Bisulc. 908. fig.

Camelus minimus, Klein, Quad. 42.


Camelus, Jonst. Quad. 93. t. 42, 44.
Chameau, Perr. Anim. i. 69. t. 7; Buffon, H. N. xi. t. 9.
Camel, Penn. Quad. t.
Arabian Camel, Penn. Syn. 60; Shaw, Zool. ii. 166.

Var. 1. Stronger and slower.
Camel (Gimel or Jermal of the Arabs).
Camelus Luk, Eversmann.

Var. 2. Slighter and fleeter.
Dromedary, or Hadgin of the Arabs.
Hab. Desert of Arabia.

Young.
Adult, white. From the Berlin Museum.

Skull. From Dr. Mantell’s Collection.
Skeleton. N. Africa. From Mr. Fraser’s Collection.

*Skull.

Domesticated in Senegal, India. Varies in colour from brown to black and white.

2. Camelus Bactrianus. The Mecheri or Camel.

Back with two humps.

Camelus Turcius, Alpin. Aeg. i. 223. t. 13.
Camelus, Gesner, Quad. 162. fig. 163; Brisson, Reg. Anim. 53.
Dromedarii, Jonst. Quad. t. 42, 44.
Bactrian Camel, Penn. Syn. 63; Shaw, Zool. ii. 239. t. 67.
Chameau, Buffon, Hist. Nat. xi. 211. 426. t. 22; Sante, Mem. Mus. xvii. 320.
Trampelthier, Knorr, Delic. ii. t. K. 6.
Hab. Mongolian Deserts.

Osteology.


Skeleton. Persia.

Domesticated in Eastern Europe, Persia, Tartary and India.
Varies from brown to white, and also greatly in size, strength and quickness, according to the breed and the climate.

2. Lama.

Back even, not humped. Tail short, hairy. Toes slender; soles narrow, separate in front. Grinders $\frac{5-5}{5-5}$. South America.

Lama, Cuvier; Desm. N. Dict. H. N. xxiv. 31, 1804; Fischer, Syn. 436.

Auchenia, Illiger, Prod. 103, 1811 (not Marshall).

Lacma, Tiedemann, Zool. i. 421.

"Llacma, Cuvier," Illiger, Prod.

Vicunia, Rafinesque, Anal. Nat. 55, 1815.

Dromedarius, Wagler, N. Syst. Amph.


Les Lamas, F. Cuvier, Dent. Mam. 229.

Elaphocamelus, Mathiola, Episc. 381; Marcgrave, Brasils, 243.

Cervocamelus, Jonst. Quad.

Molini, and most systematic writers after him, have considered that there are five distinct kinds: viz.—1. Vigogne, 2. Guanaco, 3. Llama, 4. Alpaca, 5. Heuque.


M. F. Cuvier allows of three kinds: he considers the Vigogne as very doubtful, but the latter is often brought alive to this country.

Dr. Tschudi, in the Fauna of Peru, indicates four kinds: viz.—1. A. huanaco, 2. A. Lama, 3. A. pacos, and 4. A. Vicunia. He states that the Lama and Alpaca are only known in the domesticated state.

Dr. Sundevall (Pecora) considers there is only two species, the A. Lama and A. Vicunna, regarding the Lama and Alpaca as domestic varieties of the Huanaco (A. Lama).

Prof. F. L. Walther (Neue Annal. Wetter. Gesellsch. 1819, 105), on the other hand, proposes to divide the genus Lama into three sections. 1. Lama, with a callosity on the breast. 2. Guanak, with one on the (Rücken); and 3. Araukan, containing the Vigogne and Pako, without any callosities (Höcker)!

The period of gestation in the three kinds which have bred at Knowsley, namely the Llama, Alpaca, and Guanaco, is eleven months; the Llama and Alpaca breed regularly; but by the Guanaco only a single fawn has been produced, to which one of the male Llamas is sire. None of them produce more than one at a birth.
In confinement, the *Vicuna* and the *Alpaca* often have the lower cutting-teeth elongated and projecting, giving the face a bulldog-like appearance. I have not observed this in the *Guanaco* or *Llama*.

The *Alpaca* may be a tame, heavy variety of the *Vicuna*, as it has the same short, hairy head; but the neck is thicker, and the whole animal heavier, and the hair of the head longer and more bushy, and it wants the pectoral fringe.

All the tribe have the disagreeable habit of spitting, when irritated, a quantity of half-digested cud; the *Llama* and *Alpaca* do this only when much annoyed; the *Guanaco*, on the contrary, upon the slightest occasion.

Unlike Sheep, these animals, in confinement at least, do not shed their coat.

Though the *Llama*, *Alpaca* and *Vicuna* are generally harmless and inoffensive, the males will very readily quarrel with each other.

Mr. Walton, a zealous advocate for the naturalization of the *Alpaca*, in his little book on the subject, published by Blackwood in 1844, apprehends better success will be the result when the *Alpacas* are turned on to waste and mountain lands than when they are kept on richer pasture and well cared for. But the fact that few, if any, specimens are now living in Great Britain beside those at Knowsley, does not favour this conclusion.

The *Llama*, the *Alpaca* and the *Vicugna*, are exclusively confined to the colder and more elevated regions of the Peruvian Andes; the *Guanaco* has a wider geographic range, extending to the plains of Patagonia, and even the southernmost extremity of the continent. The *Llama* inhabits the high valleys of the Peruvian Andes, its favourite region being the valley of the lake of Titicaca. It was the only beast of burthen possessed by the Aborigines; hence we find it wherever the Incas carried their conquests and civilization, from the equator to beyond the southern tropic. It is still extensively employed by the Indians as a beast of burthen, and its wool, though coarse, is used by the Aborigines. Like all domestic animals, it varies in colour; its flesh is nauseous, black, and ill-tasted.

The *Alpaca* or *Paco*, a gentle and handsome animal, although more closely allied to the *Llama* than any of its congeners, is a distinct species; it inhabits at still more elevated places than the *Llama*, its favourite haunts being on the streams descending from the snowy peaks; it is only found in a domestic state; it is reared for its wool, which is extremely fine, silky and long, and which now bears a high price, from its introduction into some of our finest woollen tissues. The *Vicugna* is only found in the wild state, in the plains on the Andes, as high as 1500 feet; its
wool is much prized for its fineness. The animal has a shrill whistle; it is easily domesticated. The Guanaco, by some naturalists considered erroneously as the parent stock of the Llama and Alpaca, is also only found in the wild state; it is seen as far north as lat. 12° S., is very abundant, and in large flocks on the Bolivian and Chilian Andes, and has been seen as far as the southern extremity of the continent. All these animals feed on a species of coarse, wiry grass called ichu.

In the Peru-Bolivian Andes the Llama and Alpaca are daily disappearing to make room for the more useful and profitable breed of the common European Sheep, while as a beast of burden the Ass is everywhere taking its place.—Pentland, in Mrs. Somerville's Physical Geography, ii. 340, 342.

M. G. Geoffroy has announced, on the authority of Dr. Weddel, that a cross-breed between the Alpaca and Vicuna had been obtained, and that the mules of this cross-breed are capable of reproducing this newly-created species, the wool of which is represented as of a valuable quality; but Mr. Pentland has examined the case referred to and the evidence adduced, and does not consider it sufficient to establish the fact.

* Of a nearly uniform brown colour. Wild.

1. LAMA VICUGNA. The Vicugna.

Head short. Face covered with soft hair, like the neck, and of the same colour. Cheeks rather paler. Hair of temples not longer than that of the rest of the head. Eyelashes black. Ears hairy, brown, blackish washed. Neck and head without any long hairs. Sides of the body with longer, projecting, rather rigid brown hairs. Hind legs without any appearance of elongated warts. The hinder part of the belly and inside of the thighs less naked.

Skull (adult) 9 inches long; nose short; nasal bones short, broad; lacrymal opening none.

Lama Vicugna, Fischer, Syn. 437; Gray, Knowsley Menag.
Lacma Vicunna, Tiedem. Zool. i. 421.
Auchenia Vicunna, Desm. Mam. 426.
Lama Vicunna, Gray, List Osteol. B. M. 62.
Auchenia Vicunna, Desm.
Auchenia Vicunna, Sundevall, Pecora, 107.
Auchenia Vicunia, Tschudi in Wiegm. Arch. 1824, 245; Fauna Peru, t. 17.


Vicognes or Viconas, *Frezier, Voy.* i. 266.

Vicunias, *Falkner, Patagonia,* 112.

Hab. Peruvian Alps.

Two, adult. Bolivia. From Mr. Bridges’ Collection.

**Osteology, t. 24. f. 2. Skull.**

Skull, male. Bolivia. From Mr. Bridges’ Collection.

Skull, female. Bolivia. From Mr. Bridges’ Collection.

Confined to the most elevated table-land and mountains of Bolivia and Northern Chili.

*The Vicuna* is purely a wild species; it has hitherto resisted all the efforts of the Aborigines, the most patient and docile of the human race, to render it prolific in its own climate and in domesticity.—*Pentland, l. c. 341.*

These animals jump and kick with their hind legs.

2. **Lama Guanacus.** The **Guanaco.**

Head elongate, tapering, slate-coloured, nakedish, covered with very short, uniform hair (which is often longer and rather tufted on the temple under and behind the eyes). Ears nakedish, blackish slate, white edged. Circumference of face from base of ears, and on the back of the temple, the lower jaw and chin, whitish. Eyelashes black. The neck and body covered with elongated, rather rigid hairs, projecting beyond the fur. The hinder part of the body in front of the thighs, the inner side of the fore-legs and thighs nearly naked. Chest only very slightly fringed. The hind legs with distinct, elongated warts.

Skull (adult) 11½ or 12 inches long; nose elongate; nasal bones elongate; lacrymal opening large.

**Camelus Guanaco, Trail, Wern. Trans. iv. 492. t.**

**Camelus Huanacus, Molini, Chili,** 281; *Gmelin, Syst. Nat.* i. 170; *Schreb. Saugth.* t. 305.

**Lama Peruana a, Fischer, Syn.** 436.

**Lama Pacos (fera), Gray, List Mamm. B. M.** 171.

**Lama huanacus, Gray, Knowsley Menag.**

**Auchenia Lama fera, Sundevall, Pecora,** 107.

**Auchenia glama var., Bennett, Gard. Zool. Soc.** 273. fig.

**Auchenia Lama, Brandt; Wagner.**

**Auchenia huanaco Tschudi, Fauna Peru.**

Guianices, Hawkesw. Voy.


Hab. Peruvian Alps; the Pampas and mountains in Chili, Mendoza, and Straits of Maghellan.

Adult. Presented by Sir William Burnett and Capt. Fitzroy, R.N.


Half-grown. S. America.

Osteology, t. 24. f. 1.

Skeleton. Chili.

Skull. Chili. From Mr. Bridges’ Collection.

Two skulls. Chili.

Skull. From the Zoological Society’s Collection.

The Guanaco or Wild Llama is the characteristic quadruped of the plains of Patagonia; it is very common over the whole of the temperate part of the continent, as far south as the islands near Cape Horn. It generally lives in small herds, of from half a dozen to thirty in each; but on the bank of the St. Cruz we saw one herd which must have contained at least 500. They are generally wild and extremely wary. If, however, by chance the sportsman abruptly meet a single animal, or several together, they will generally stand motionless and intensely gaze at him, then perhaps move a few yards, turn round and look again. They are curious; for if a person lies on the ground and plays strange antics, such as throwing up his feet in the air, they will almost always approach by degrees to reconnoitre him: this artifice has the advantage of allowing several shots to be fired, which are all taken as part of the performance. On the mountains of Tierra de Fuego, I have more than once seen a Guanaco on being approached not only neigh and squal, but prance and leap about in the most ridiculous manner, apparently in defiance as a challenge.

The Wild Guanaco are very easily domesticated, and I have seen some thus kept in Northern Patagonia near a house, though not under any restraint. They are in this state very bold, and readily attack a man by striking him from behind with both knees. It is asserted that the motive for these attacks is jealousy on account of the females.

The Wild Guanacos, however, have no idea of defence; even a single dog will secure one of these large animals till the huntsman can come up.
In many of their habits they are like sheep in a flock. Thus, when they see men approaching in several directions on horseback, they soon become bewildered and know not which way to run; this greatly facilitates the Indian method of hunting, for they are thus easily driven to a central point and encompassed.

The Guanacos readily take to the water; several times at Port Valdes they were seen swimming from island to island. Byron, in his Voyage, says he saw them drink salt water. Some of our officers likewise saw a herd apparently drinking the briny fluid from a salina near Cape Blanco. I imagine, in several parts of the country, if they do not drink salt water they drink none at all. In the middle of the day they frequently roll in the dust in saucer-shaped hollows. The males fought together. Herds sometimes appear to set out on exploring parties at Bahia Blanca, where within thirty miles of the coast these animals are extremely unfrequent. I one day saw the tracks of thirty or forty which had come in a direct line to a muddy salt-water creek; they then must have perceived that they were approaching the sea, for they had wheeled with the regularity of cavalry, and had returned back in as straight a line as they had advanced. The Guanaco has a singular habit, which to me is quite inexplicable, namely that on successive days they drop their dung on the same defined heap. I saw one of these heaps which was eight feet in diameter, and was composed of a large quantity. This habit, according to M. D'Orbigny, is common to all the species of the genus; it is very useful to the Peruvian Indians, who use the dung in fact, and are thus saved the trouble of collecting it.

The Guanaco appear to have favourite spots for lying down to die, on the banks of the St. Cruz, in certain circumscribed spaces, which are generally bushy and all near the river; the ground was actually white with bones; on one such spot I counted between ten and twenty heads. I particularly examined the bones; they did not appear, as some scattered ones which I had seen, gnawed or broken, as if dragged together by beasts of prey. The animal in most cases must have crawled, before dying, beneath and among the bushes. M. Bynoe informed me, that during a former voyage he observed the same circumstance on the banks of the Rio Gallegos. I do not at all understand the reason of this, but I may observe that the wounded Guanacos at the St. Cruz invariably walked towards the river.—Darwin, Journ. 168.

** Colour various, often variegated. Domestic.**

Almost every person who has lived where these animals abound consider there are two or more kinds found in the domesticated state, and they are all distinct from the two wild kinds already noticed. They will not allow that they are like the long-legged
Sheep of France and the short-legged Sheep of Lincolnshire, mere breeds of the same kind. Some authors, as Tschudi (Fauna Peruana), declare that they will not breed together, nor with the wild kinds, but Lord Derby has shown at Knowsley that this is not the fact.

I am led to believe that the Lama and Alpaca are only domestic races of the two preceding species, and that the Alpaca is probably a mule between them, for it has many characters common to the two wild kinds.

3. Lama Glama. The Lama or Yamma.

Fur brown or variegated. Forehead and cheeks with short hair, like the rest of the head. Legs elongate, slender.


Camelus Peruvianus, Brisson, Reg. Anim. 56.

Camelus Llaema, F. Cuvier, Mam. Lithog. t.

Lacma Peruana, Tiedem. Zool. i. 421.


Auchenia Lama β. domestica, Sundevall, Pecora, 107.

Lama Peruana β. domestica, Fischer, Syn. 436.


Lama Glama, Gray, Knowsley Menag. t.


Cervocamelus, Jonston, Quad. t. 29; Marcgrave, Brasil, 243. fig.; De Chile Regn. 38. fig.

Elephocamelus, Mathiola, Episc. 1561, 381. fig., 1564, 630. fig.

Llama, Ulloa, Voy. i. 365. t. 24. f. 5; Laet. Nov. Orb. 1633, 405; Penn. Syn. 64; Shaw, Zool. ii. 241. t. 168.

Lama, Buffon, H. Nat. xiii. 16. Suppl. vi. 204. t. 27.

Hab. South America.

Adult, white.


Black, or black and white or brown varied. Forehead and cheeks with elongated hair. Body large. Sides with long pendulous hairs. Legs short. Belly and inside of the legs nakedish.
Skull (adult) 10 inches long; nose short; nasal bones very short, broad; lacrymal opening large.

Camelus Pacos, Linn. Syst. Nat. xii. 91; Gmelin, S. N. i. 171;


Auchenia Lama γ. domestica, Sundevall, Pecora.


Auchenia Pacos, Tschudi, Fauna Peru, t.


Paco, Laet. Nov. Orb. 405; Buffon, H. N. xiii. 16.

Alpaca, Frezier, Voy. i. 266.

Hab. South America.

Two, adult, black, male and female. Presented by the Earl of Derby.

Black, young, just born. Presented by the Earl of Derby.

Young, white and brown varied.


Var.? Hybrid?

Alpaca, F. Cuvier, Mam. Lithog. t. (hybrid); Gray, Knowsley Menag. t.

Var.?

Camelus Arucanus, Molini, Chili, 279; Gmelin, Syst. Nat. i. 170.

Lama Arucana, Fischer, Syn. 438.

Auchenia Arucana, H. Smith, Griff. A. K.


Sheep, Ovalle, Chili, 44.

Sheep of Peru, Cieza, Peru, 232.

Mouton, Feuill. Journ. iii. 23.

Mouton de Perou, Frezier, Voy. i. 264. t. 22. f. a.


Osteology.

Fam. 2. Equiæ.

Two middle toes soldered into one; covered with a single hoof; lateral toes subequal. Cutting teeth 6:6. Canines $\frac{1}{14}$. Gullet and stomach simple. Using the hind feet in defence.

Solidungula, Illiger, Prod. 100, 1811; Bronn, Index Pal. ii. 707.
M. Belluæ pars, Linn. S. N. ed. 12. 27, 1766.
Les Pachydermes Solipedes, Cuvier, R. A. i. 243, 1817, ed. 2. i. 251.

Stercoplia, Stercopodia, Solipedia, Rafinesque, Anal. Nat. 55, 1815.
Equidæ, Gray, L. M. Repos. xv. 307, 1821; Ann. Phil. 1825;
Equi, Wagler, N. Syst. Amph. 4, 1830.
Solipedia, Equidæ, Selys Longchamps, 1842.
Solipedia, J. Brookes, Mus. Cat. 17, 1828.
M. Perissodactyles Palæotheriens, Pomet, Rev. Zool. 1848, 182.

The Equidæ form two genera, but the species of them, viz. the Horse and the various species of the second group, breed together freely in confinement, but the produce is almost always (if not always) barren.

Synopsis of the Genera.

1. Equus. Tail covered with long hair to the base; the fore and hind legs with a wart (sallenders) on the inner side.

2. Asinus. Tail with short hair at the base and long at the end; the hind leg without any wart on the inner side.

1. Equus.

Tail covered with long hair to the base. Fur dappled, that is, marked with round pale spots having a dark net-like ground.
Fore and hind legs with hard horny bodies called warts, chestnuts, or sallenders, placed above the knee (wrist) on the fore-legs and below the hock (heel) in the hind ones.

Equus, Gray, Zool. Journ. i. 261, 1825; List Mam. B. M. 182; List Osteol. B. M. 70; List Hodgson Collection, 35.


The warts are rarely absent on the hind legs, for it is stated that “the bay mare Eaglet was without sallenders on the hock joint.”—Jamaica Times, 1845, Aug. 26.

1. Equus Caballus. The Horse.

Brown, grey, or black, with roundish pale spots.


Wild Pferde, S. G. Gmelin, Reise Rusland, i. 44. t. 9 (cop. Shaw Zool. t. 414; Schreb. t. 109); Pallas, Reis. i. 211.

Takija or Wild Horses, Hanway, Hist. Caspian Sea, i. 349; Bell, Travels, i. 212; Smith, Equidae, 146.

The figure of the Wild Horse as giver by Gmelin very much resembles the ponies left at liberty on the commons of Cornwall and mountains of Scotland, and it appears very doubtful if they are not rather to be considered as domestic horses which have escaped and deteriorated. Pallas observes that the very young are easily tamed, but the adult never. (Z. R. A. 260.) It is to be observed that this is not the case with the horses which have become semi-wild in the rich prairies of America, where they have retained the size and form of the well-bred horse.

Domestic Varieties.

Equus antiquorum, Gesner, Quad. 132.

Equus Caballus, Linn. Syst. Nat. i. 100; Gmel. S. N. i. 209; Desm. Mamm. 416; F. Cuvier, Dict. Sci. Nat. vili. 455; Fischer, Syn. Mam. 429; Gray, Zool. Journ. i. 260; List Mam. B. M. 182; List Osteol. B. M. 70; List Hodgson Coll. 35; Renger, i. c. 331.

Equus, Equa, Pliny, H. N.; Gesner; Pallas, Z. R. A. i. 255.

Horse, Penn. B. Z. i.

Generous Horse, Penn. Quad.

Cheval, Buff. H. N. iv. 174; Cuvier, R. A. i. 243.

Pferd, Redinger.

Ross, Schrank.

The Horse, Youatt, The Horse, its History, Breeds, &c., Ham. Smith, Equidae, Jardine’s Naturalist’s Library.
The Tarpan Wild Horse, primæval bay stock, *H. Smith, Equidae*, 160. t. 3.
The Mexican Horse and Seminole Horse, *H. Smith, Equidae*, 249.
The English Race Horse, *Smith, Equidae*, 251. t. 9.
The Hunter, *Bewick, Quad*. 8. fig.
The Black Horse, *Bewick, Quad*. 10. fig.
The Old English Road Horse, *Bewick, Quad*. 9. fig.
The Common Cart Horse, *Bewick, Quad*. 13. fig.
The Improved Cart Horse, *Bewick, Quad*. 14. fig.
The Dongolo (black) Race, *H. Smith, Equidae*, 229. t. 10*.
The Turkish Race, *H. Smith, Equidae*, 231.
The Toorkee Races, *H. Smith, Equidae*, 238.
The Transylvania Horse, *H. Smith, Equidae*, 245.
The Moldavian Horse, *H. Smith, Equidae*, 245.
The Greek Horse, *H. Smith, Equidae*, 245.
The Spanish Horse, *H. Smith, Equidae*, 246.
*Villous Horse* (primæval of the white stock), *H. Smith, Equidae*, 262. t. 4.
The White or Grey Horse, *H. Smith, Equidae*, 262. (Marengo, *Bonaparte’s Arab.*) t. 8.
The Crisp-haired Horse (primâval of the black stock), *H. Smith*, *Equidæ*, 266. t. 5.


The Dun or Tan Horse, *H. Smith*, *Equidæ*, 274.

The Decussated Horse, or the Eelback Dun Horse of Ukraine, *H. Smith*, *Equidæ*, 274. t. 6.

The Myautzee, or the Pied Horse of China, *H. Smith*, *Equidæ*, 277.


The Hungarian Horse (with slit nostrils), *H. Smith*, *Equidæ*, 278. t. 11.


The Shetland Ponies, *H. Smith*, *Equidæ*, 283. t. 15.


The Tattoo or the East Indian Pony, *H. Smith*, *Equidæ*, 285.

Tutto or Maharatta Pony, *Sykes*, P. Z. S. 1831.

Sedulously propagated in the Dukhun: much used to transport luggage, and very vicious.—*Sykes*.


The Tangum Piebald or Skewbald Horse, Equus varius, *H. Smith*, *Equidæ*, 288. t. 7.

The Tangum (or Tanghans), Primæval Piebald stock of Thibet, *H. Smith*, *Equidæ*, t. 7.

Skewbald of Achin in Sumatra, *H. Smith*, *Equidæ*, 293.


Tangham of Gyanche, *Hodgson*, Icon. ined. B. M. t. 212. f. 3.


The Koomrah, Equus Lalisi, *H. Smith*, *Equidæ*, t. 16.

Hippargus, *Oppian*.

Boryes, *Herodotus*.


The specimen in the British Museum, which Col. H. Smith mentions as being like the *Koomrah* (*Equidæ*, 296), was a Dartmoor pony which Dr. Leach had stuffed to place in the collection of British animals.
The Kuda or Saran Horse, *H. Smith, Equidae*, 287.
The Javan Horse, *H. Smith, Equidae*, 287.
The Tamboro or Birma Horse, *H. Smith, Equidae*, 287.

Horse with a curled moustache on the upper lip, of Asiatic Russia, *Pallas, Spic. Zool.* xi. 5. t. 5. f. 6; *Zool. Ross. Asiat.* i. 250.

Horse covered with curled woolly hair, of Asiatic Russia, *Falk. Itiner.* iii. 529; *Pallas, Zool. Ross. Asiat.* i. 250.


The Argamaki of Bocharis, a White Horse with very close, minute, orbicular, brown spots, of Asiatic Russia, *Pallas, Zool. Ross. Asiat.* i. 250.

**Osteology**, t. 37. f. 1.

Cheval, *Daubenton, Buffon, H. N.* iv. t. 10; *Cuvier, Oss. Foss.* ii. t. 1, 2, 3; *Volkmann, Anat. Anim.* i. t. 11. f. 8; *Stevens, Book of the Farm*, 1284. f. 577.

Skull of young with milk teeth.

Skeleton mounted

Skeleton mounted: pony.

Skull.

Skull, larger.


Pelvis. From Dr. Mantell's Collection.

**Icon.**


Horses were introduced by the French in the Falkland Islands in 1764, since which time they have greatly increased. They have never left the eastern end of the island, although there is no natural boundary to prevent them from roaming, and that part of the island is not more tempting than the rest. The
stallions are said to be constantly roaming from place to place, and compelling the mares to accompany them, whether or not the young foals are able to follow, and they are left to die. The predominant colours are roan and iron-grey.

All the horses bred here, both tame and wild, are rather small-sized, though generally in good condition, and they are not so strong as the horses from the Plata.—Darwin, Journal, 192.

The Horse was first landed at Buenos Ayres in 1537, and the colony being then for a time deserted, it ran wild: in 1580, only forty-three years afterwards, one hears of them at the Strait of Magellan. The natives of Terra del Fuego are well-stocked with horses, each man having six or seven, and all the women and even children their own horse.—Darwin, Journal, 233; Renger, Natur. Saugth. Paragua, 334.


In Banda Oriental they think it ridiculous to break in or ride a mare; they are of no value except for breeding, and, rarely, to tread out the wheat from the ear, for which purpose they are driven round a circular enclosure where the wheat sheaves are strewn. Numbers are slaughtered for the sake of their hides, although only worth about half-a-crown a-piece.—Darwin, Journ. 134.

Darwin gives an interesting description of the breaking in of the wild young horses of Banda Oriental.—Journal, 151.

Horses do not breed on the southern face of the Himalayas, but are imported from Thibet.—Munday, Journ. ii. 75; Ogilby in Royle Himal. i. lxxi.

Skins of horses are used for cloth, to make churns, &c.—Simpson, Overland Journey, ii. 307.

The roundish marks are called copper-marked in brown, dappled in grey horses. These marks become more visible in the brown horses when they are in high condition.

Horses are technically called according to their colours. Bay, —Brown, with black mane and tail; some have black legs, they are then called bay with black points. Chestnut,—Red brown, either dark or light. Brown,—Nearly black: if they have a tan mouth they are called brown muzzles. Black. Dun colour. Roan, Strawberry,—very red grey. Piebald,—With three colours. Skewbald,—Two colours. Cream colour.—The white mark on the forehead is a star; if down the face, a blaze.
2. Asinus. The Zebras.

Have the upper part of the tail covered with short hair, and the lower part covered with longer hair forming a tuft; the fur marked with darker stripes; the fore-legs only furnished with hard horny warts in a similar situation to those in the front legs of the Horse, but there are none in the lower part of the hinder legs.

Chevaux (Asinus), F. Cuvier, Dent. Mam. 224. t. 92.
Equus, sp., Linn.
Asinine Group, H. Smith, Equidae, 298.

* Colour nearly uniform with a dark longitudinal dorsal stripe; some have a black stripe across the shoulders. The Asses of Asia.

Asses of Asia, Gray, Knowsley Menag. 74.

† Ears elongated, acute. The Tame or Domestic Asses.

These animals vary greatly in size and appearance according to the climate. They are large and smooth-haired in the warmer climates; small and shaggy in the colder countries.

It is very doubtful if the Domestic Ass is found in a truly wild state; the asses which have been described as wild, appear rather to be domestic animals which have escaped, or mules between the Domestic Ass and the allied wild species; for when caught they, after a short time, submit themselves to man, which is not the case with what I have here considered as the wild kinds.

Pallas justly observes, "In extensis Asiae desertis primam patriam esse quærendam Equi feri et Onagri a Nomadibus in domesticos usus domatorum, æque ac Hemioni hactenus indomiti."—Zool. Ross. A. i. 255. This is equally applicable to the African species.

1. Asinus vulgaris. The Domestic Ass.

Grey, with a longitudinal dorsal streak and a dark streak across the shoulders; ears elongate; facial line arched. Skull with suborbital foramen as in E. Hemionus.

Equus asinus, Linn.; Renger, Nat. Parag. 341; Pallas, Zool. R. A. i. 263.
Asinus vulgaris, Gray, Zool. Journ. i. 244; J. Brookes, Mus. Cat. 19; Gray, Knowsley Menag. 71.
MAMMALIA.

Equus asina, Fleming, Phil. Zool. ii.
Asinus, Plin. Hist. Nat. viii. 44.
Ass, Penn.; Bewick.
Asne, Buffon.
Ane, Cuvier.
Asinus domesticus, Domestic Ass, H. Smith, Equidæ, 314.

Var. Without any cross.
Var. Legs and body more or less banded.

Domestic varieties.

Gudha of the Mahrattas, very little larger than a good mastiff or Newfoundland dog, Sykes, P. Z. S. 1831.
Domestic Ass of Ispahan, H. Smith, Equidæ, 314.
Domestic Ass of Beloochistan, H. Smith, Equidæ, 314.
Domestic Ass of Thibet, with a cross band, Stachey.
The Pico of ancient Egypt, H. Smith, Equidæ, 314.
Tasandunt of the Shelluhs, H. Smith, Equidæ, 314.
The Djaar of Arabia, H. Smith, Equidæ, 311.
The Lalisiones or Wild Ass Colts, H. Smith, Equidæ, 311.
Lalisio, Martial, xiii. 97.
Wild Ass, Lenant, Voy. on the Bahar el Ahad; Hoskins, Travels in Ethiopia.
Egyptian Ass, H. Smith, Equidæ, 312.

Osteology.

Asne, Daubenton, Buffon H. N. iv. t. 12, 13.
Skeleton, mounted.

The common Domestic Ass is sometimes of the usual grey colour, without any appearance of the cross. They are sometimes black, and at others white, rarely skewbald; but this is the common albinism and melanism of domestic animals, and when of these colours the cross is not apparent, or at least sometimes only to be seen when the animal is observed obliquely.

†† Ears moderately short, rounded. The Wild Asses.

2. Asinus onager. The Koulan or Wild Ass.

Pale reddish (in winter greyish); dorsal streak black, rather wider over the small of the back; skull with the infraorbital foramen high up, about one-third the space between the face-line and the back edge of the teeth; far back being directly over the front end of the cheek ridge and the back edge of the third grinder.

Asinus sylvestris, Plin. Hist. Nat. viii. 44.
Wild Ass, *Bell, Travels,* i. 212; *Heber’s Travels.*
Koulan or Wild Ass, *Penn. Quad.*
Wild Ass or Gour, *Ker Porter, Travels Georgia, Persia,* i. 460.
Wild Ass or Khur of the Persians, *Iis, 1823, 764.
Onager, *Xenophon; Barboza, Collect. Ramusio.* i. 300, b. *(Mala-bar and Goleconda).*
Hemione or Dziggtai, *Lesson, Comp. Buffon,* x. 379, from Geoffroy; *F. Cuvier, Mamm.* 1823; not Pallas.
The Hymar or Hamar of Mesopotamia, *H. Smith, Equidae,* 313.
Asinus Hamar (the Hamar), *H. Smith, Equidae,* t. 19.
Chamor of the Hebrews.
*Hab. The Plains of Mesopotamia, Persia, Kutch; shores of the Indus, Punjab.*

*a. Young* (eight months old, died in September). *Mesopotamia.*
Presented by *J. H. Layard, Esq., M.P.*


**Osteology.**

Skull and bones of body. India, Kutch. Presented by the Earl of Derby.

They are abundant in Mesopotamia, and are evidently the Wild Ass of Xenophon. The adults are very difficult to approach within rifle range. The young are sometimes caught alive.—*Layard.*

The *Khur* inhabits the deserts of Persia in troops, frequenting the hills in summer and the plains in winter.

Pallas, in a paper entitled “Observations sur l’Asne dans son état sauvage, ou sur le véritable Onagre des anciens” (*Act. Acad. Sci. Imp. Petrop. 1777, 258. t. 11*), figured a Wild Ass which was sent by sea from Derbent to Astracan. The figure greatly resembles the mule between the *Hemione* and the *Ass* now in the Zoological Gardens, but the ears appear a trifle longer. It is coloured in the same manner as the Hemione, that is to say, the more prominent parts of the body are dark, and the middle
of the back, the front of the haunches and thigh and the under part of the body are paler. The figure represents but a very indistinct cross band on the shoulder.

On this Pallas observes, "L'étalon différait encore de la femelle en ce qu'il avait tout le corps plus robuste, l'encolure plus grosse, la poitrail et la croupe plus large, et surtout par un barre ou raye transversale (tab. xi.), qui croisait sur les épaules avec celle qui s'étend de long de l'épine dans l'un et l'autre sexe. C'est cette croix que la plupart des ânes domestiques mâles ont conservés, et qui embellit surtout ceux qui ont la couleur du poil claire. Cette barre transversale bien plus étroite que l'autre manque entièrement aux Onagres femelles: quelques Tartares m'ont au contraire assurés qu'elle se voyait assez souvent double dans les mâles." (l. c. 269.)

This paper is translated into German, and a copy of the plates with a second figure of the back of the animal is given in Pallas, N. Nord. Beytr. ii. 22, t. 2; but in this figure the cross band on the shoulders is not marked. From this description it would appear that the animal which is called the Wild Ass is not always marked with the cross band on the shoulder which is so permanent in the domestic kind, and has hitherto been considered as its specific character.

The chief difference between Pallas's figure of the Wild Ass and the Hemione is the greater length and more acute form of the ears; of the latter the mule varies in this character.

"No attempt has been made to break the Wild Ass (of Rajpootana) in for riding, nor did it appear that the natives ever thought of such."—Bishop Heber.—H. Smith, Equidae, 311.

"The Wild Ass of Cutch has the cross stripe on the shoulder, and differs in colours and heavier proportion from the Wild Ass of Kerr Porter."—Bishop Heber.—H. Smith, Equidae, 311.

Col. Ham. Smith confounds the domesticated Gudha with the Wild Ass of the Deccan described by Colonel Sykes, and states on the Colonel's authority that "it is not larger than a mastiff." —Equidae, 307.

Eversmann states that many specimens of the Kulan or Equus Onager, Pallas, have been brought to Orenburg from the high steppes between the Caspian and the Aral seas. A good specimen and a skull are in the Museum of the University of Kassan.

All these specimens are without the cross band, and have only the longitudinal dorsal streak. Eversmann considers that the cross band is either not the character of the species, or perhaps a sexual mark, as he observes that he is not able to discover the specific character which separates the E. Hemionus from the E. Onager. He further observes that the Mongolians have no particular name for the E. Onager of Pallas; the Tartars no name
for *E. Hemionus*: the Mongolians called the *E. Hemionus Dshiggetei*, or more properly *Tschikitei*, meaning *long ears*, and the Tartars call the *E. Onager*, *Kulan*.

Eversmann remarks that Pallas (*N. Nord. Beytr. ii. 34*) states that the male M. Hablizl brought from Persia had no cross, but that the female which was shot on the Murecy had one. He proceeds to calculate the length of the ears of these animals, compared with the other measurements of them, and he finds that the ears of the male appear to be considerably (near 2 inches) shorter in proportion than the ears of the female.—*Bull. Soc. Imp. Nat. Mosc.* 1840, 57.

The *Mule with Asinus domesticus* has the short smooth fur exactly like the sire, but with a short narrow cross band on the shoulder; the ears rather longer and black tipped.

3. **Asinus Hemionus. The Kiang.**

Fur short, smooth, bright red bay; legs straw colour (in winter long, rather woolly, greyish, legs whitish), with a broad longitudinal dorsal streak, broadest over the small of the back, without any cross band on shoulders. Skull: the infraorbital foramen low down, in the centre of the space between the face-line and the base of the teeth, and placed in a line over the back edge of the second grinder, some distance in front of the end of the cheek-ridge.

*Mulus dauricus fœcundus*, Messerschm. MSS.


*Equus Hemionos*, Bodd.

*Asinus Hemionus*, *Gray*, *Zool. Journ.* i. 244; not *Knowsley Menag.*


*Asinus onager* (Onager Koulan or Wild Ass of Tartary), *H. Smith, Equidae*, 307. t. 18?


*Wild Ass*, *Moorcroft, Travels.*


*Asinus polyodon*, *Hodgson, Calcutta Journ. N. H.* 1847, 469. t. 6, animal and skull.
Jikta, Shaw, Zool. ii. 427.
Dshikketee, Penn.
Dgiggetai, Cuvier, R. A. i. 244.
Dzigethai, Buffon, Supp. vi. 37.
Wild Mule, Half Ass, or Fecund Mule, Penn. Quad. i.
Wild Ass, English in Thibet.
Hemionos, Plin. Hist. Nat. viii. c. 44.
L'Homieone, Ency. Methode. t. 42. f. 4.
The Ghoor or Khur, "Moorcroft," H. Smith, Equidae, 310.
Wild Esel, Eversmann, Bull. Mosc. 1840; Wagner, Wiegmann
Arch. viii. 1842, 49.
The Kiang, H. Smith, Equidae, 289.
Wild Horse, Gerrard, Asiatic. Research. xvii. 247.
Hab. Thibet.

Male between winter and summer fur. Thibet. Presented by Lord Gifford.

Var. 1. with a distinct cross band on the shoulder like the Domestic Ass. Thibet. Capt. Strachey.
Var. 2. with the vertebral dorsal streak very obscure or entirely wanting. Thibet. Capt. Strachey.

Osteology, t. 37. f. 2.
Two skulls, lower jaw wanting. Presented by B. H. Hodgson, Esq. The specimens referred to by Mr. Gray in the P. Z. S. 1839.


The forehead of all the three specimens of the skull of E. Hemionus from Thibet is rather convex between the eyes, and the centre of the face is narrow and keeled on the sides; while in the skull of E. Onager from Kutch the forehead is flat between the eyes, and the centre line of the face is rather broader and rounded gradually off on the sides, and the incisive bone is longer and more gradually arched, making the incisor more perpendicular in the latter than in any of the former.

But the most distinctive character between the four skulls is in the position of the infraorbital foramen. In E. Onager it is high up, about one-third the space between the face-line and the back edge of the teeth; it is far back, being directly over the front edge of the cheek-ridge and the back end of the third grinder; while in all the three specimens of the skulls of E. Kiang this foramen is lower down, being nearly in the centre of the space between the face-line and the base of the teeth, and it
is placed in a line over the back edge of the second grinder, some
distance in front of the end of the cheek-ridge. The under sur-
face of the body of the posterior sphenoid is narrow and convex
in *E. Hemionus* and broad and flat in *E. Kiang*. The vomer
is much more compressed in the latter than in *E. Hemionus*. I am
not certain that the distinctions here described may be sufficient
to show that these two animals are separate species, but they in-
dicate the necessity of the subject being more fully examined.

In the position of the suborbital foramen the *E. Hemionus*
more nearly resembles the *E. Asinus*, and the *E. Onager* that of

Two of the skulls of the *Equus Kiang* show the small rudi-
mentary grinder in front of the other, but this tooth is to be more
or less distinctly observed in the skulls of the other *Equidae*
in the Museum Collection. I may observe, that in the skull of
*Equus Burchellii* in the British Museum Collection, this tooth is
placed on the inner side of the first true grinder.

The suborbital foramen in the skulls in the India House
from Thibet rather varies in position, but in all it is placed over
the middle or third tooth. In the old male it appears to be
rather higher than in the nearly adult female and in the young
skull, where the hinder grinder is just springing out.

This animal must not be confounded with the domestic asses
which are used for burden in Thibet.—*Capt. Strachey*.

The male Kiangs are larger and deeper coloured. They live
in troops of from eight to ten under the care of a solitary male,
where the thermometer is below zero. They live partly on the
plains and partly on the mountains, and the lower surface of the
hoof varies considerably in form and concavity, perhaps from that
circumstance.

The *Ghoor Khur* of Ludakh, according to Moorcroft, is white
about the nose and under the neck, the belly and legs; the back
is light bay and the mane dun. They herd in droves, fly at a
trot, stop, and look back.—*H. Smith, Equidae*, 310.

Moorcroft saw the Kiangs on the highest summits of Thibet,
in their shining *summer coats* and with their antelope form,
scouring along in numbers.—*H. Smith, Equidae*, 286.

Dr. Walker observes—The *Kiang* neighs like a horse. The
*Wild Ass of Cutch* brays like an ass. The *Kiang* has no zebra
stripes, neither in the adult nor in the foal. The *Wild Ass of
Cutch*: transverse zebra stripes are seen on the shoulder in the
adult, and still more in the foal. Sometimes also the shoulder
cross has been seen. The habitat of the *Kiang* is on the high
table-land of Thibet; of the Wild Ass of Cutch in the sultry
plains near the mouth of the Indus.

The *Kiang* of Chinese Tartary greatly exceeds that of the
Donkey of Cutch in size; the stallions often stand 14 hands high. Major Charlton and Major Biddulph state that they neigh like a horse. When taken young they will become so tame as to be led about like a horse, and will follow horses almost anywhere. They live in a climate where the temperature is below the freezing point in the middle of the summer; yet they throw off their pale woolly coat during that season and become bright bay.—Major Charlton.

The Donkey of Cutch is often domesticated in India.—Ibid.


Yellowish red clay colour. Tip of ears, mane, long hairs of tail, well-defined line down the back to middle of tail, and cross band on shoulder, three or four cross streaks on knees and hocks, black.

Asinus Equuleus (the Yo-to-tze), H. Smith, Equidae, 304.
Asinus Hippargus (the Yo-to-tze), H. Smith, Equidae, t. 17.

The specimen described by Col. H. Smith was alive in a livery stable near Park Lane, London; it was said to have been brought from the Chinese frontier N.E. of Calcutta. It was most probably a Kiang, or perhaps a mule between it and the Domestic Ass.

** Body with a black dorsal streak and many more or less distinct transverse or curved streaks. Ears rather short and broad-tipped. The Zebras of South Africa.

Hippotigris, H. Smith.
Hippotigrine group or Zebras, H. Smith, Equidae, 320.

† Hoofs slightly concave beneath; legs white, not or only slightly cross streaked.

Living on the open plains.

5. Asinus Quagga. The Quagga.

Brown. Head, neck and withers or front of body blackish streaked; lower part of body, legs and tail white. Hoofs flattish beneath.

Asinus Quagga, Gray, Zool. Journ. i. 246; List Mam. B. M. 183; J. Brookes, Mus. Cat. 20, 1828.
Equus Quoagga, Lesson, Man. Mamm. 347.
Female Zebra, Edw. Glean. i. t. 223.
Le Couagga, Buffon, H. N. Supp. iii. t. 4; Cuvier, Menag. Mus. t.; F. Cuvier, Man. Lithog. t.
Opeagha or Quagga, Masson, Phil. Trans. lxvi. 297.
Hippotigris quacha (the Quagga of the Cape Colonists), H. Smith, Equidae, 330. t. 24.
Quagga, Shaw, Zool. ii. 240.
Quacha, Penn. Quad. i. 14.
Hab. Cape of Good Hope, on open plains.

Young, stripes very indistinct. South Africa. Presented by W. Burchell, Esq., LL.D.

E. Isabellinus, Temm. MSS.; H. Smith, Equidae.
Hippotigris isabellinus (the Isabella Quagga), H. Smith, Equidae, 332. t. 25.
Ane isabelle, Le Vaillant.

Lesson places the Quagga with the true Horses, because the hair extends nearer to the base of the tail, overlooking the warts and other natural characters.—Nov. Tab. R. A. 166, 1842.

The Quagga is found in herds near the Cape Colony.
Le Vaillant, as Col. Smith observes, only saw, and did not possess, the Ane Isabelle. The specimen in the British Museum described and figured by Col. H. Smith was certainly only a young Quagga in a very imperfect condition, having lost nearly the whole of its fur before it was stuffed. It was presented by Dr. Burchell as the skin of a Quagga.

6. Asinus Burchelli. The Peetsi or Peechi.

Pale brown, under side of body whitish; head, body and upper part of leg black streaked; tail, inside and lower part of leg white. Hoof rather broad, only slightly concave beneath. Skull: suborbital foramen as in E. Hemionus.

Equus Zebra, Burchell, Travels, i. 139, vig. at p. 252.
Equus Zebra, male, F. Cuvier, Menag. Mus. t.
Equus montanus (the Dauw), F. Cuvier, Mam. Lithog. t.

Female and foal (not Burchell); Lesson, Mammifères, i. 248.
Hippotigris Burchelli (the Dauw), H. Smith, Equidae, 329. t. 23.

Striped or Bonte Quagga of the Cape Colonists, Harris, l. c. 7.
Peet-sey of the Matabuli and Bechianas.
Dauw, F. Cuvier, Mam. Lithog. t.

Hab. South Africa, plains.
a. South Africa. Presented by W. Burchell, Esq., LL.D.
b. Young. South Africa. From the South African Museum.

Osteology.

*Skull, female. South Africa.

Found in herds in every district north of the Orange river. It admits of being tamed to a certain extent with considerable facility, and occasionally a half-domesticated specimen is exposed for sale in Cape Town with a rider on its back: even in the most tractable state to which it has yet been reduced, it is regarded as wicked, treacherous, obstinate, and fickle.—H. Smith.

M. F. Cuvier has applied the Hottentot name for the true Zebra to this species, and used for it the name *E. montanus*, that Burchell gave to that animal, though it only inhabits the plains.

†† Hoofs narrow, deeply concave beneath; legs cross-banded. Living on the mountains.


White; head, body and legs to the hoofs black-banded; nose reddish; belly and inside of thighs not banded; tail end blackish. Hoofs narrow, deeply concave beneath. Skull: suborbital foramen as in *E. Hemionus*.

*Zebra Indica*, Aldrov. Solid. 416. fig.; *Raii Syn* 64.

*Equus Indicus*, Jonston, Quad. t. 5.


*Equus Zebra*, Linn. S. N. i. 101; Schreb. Saurgh. t. 316.


*Zèbre*, Buffon, H. N. xii. t. 12.


*Sebra*, Stubb.

*Hippotigris campestris*, H. Smith, *MSS. l. c. 329*.

*Equus montanus*, Burchell, *Travels*, i. 139. 265, ii. 270; *Harris, W. A. Africa*, t. 24. f. 1.

*Male Zebra*, Edwards, Glean. i. t. 222.

*Wild Paard or Wild Horse of the Dutch Colonists*, Burchell, *Trav.*; *Harris, l. c. 7*.

*Wilder Esel*, Kolbe.

*Daow (or True Zebra) of the Cape Colonists*, Harris, *l. c. 7*.

*Zeura or Zuora*, Lobo, Abyss. i. 291?

*Wild Ass*, Kolbe, Cape, ii. 112.

*Var.? Hippotigris zebra (the Zebra)*, H. Smith, *Equidæ*, 324. t. 21.
Hippotigris antiquorum (the Congo Dauw or Zebra of Pigafetta), *H. Smith, Equidae, 327.*

Hippotigris antiquorum (Angola Dauw), *H. Smith, Equidae, t. 21.*

*Hab.* South Africa, mountains.

- Adult. South Africa. Presented by W. Burchell, Esq., LL.D.

**Osteology.**

- *Skeleton.* South Africa.
- Skull. South Africa.
- Skull of male. Mule between Zebra and Ass.
- *Skull.* Presented by the Earl of Derby.
- Skull. Hybrid between Asinus Zebra and Asinus vulgaris. Presented by the Zoological Society of London.

**Mules or Hybrids of the different species of Horses.**

1. The Common Mule,—the hybrid between the Ass and the Mare.

- Mules, *Raii Quad.* 64.
- Equus Asinus Mulus, Gmelin.
- Equus Mulus, Schreb. t. 214.
- Mule, Pennant.
- Maulthier, Bechstein.
- Grey Mule of Egypt and Barbary, *H. Smith, Equidae, 345.*
- Black Mule of South of France and Spain, *H. Smith, Equidae, 345.*
- The Dun-coloured Mules of Volterra (Italy), *H. Smith, Equidae, 346.*

2. The Hinny,—the hybrid between the Horse and the she-Ass.

- Equus Asinus hinnus, Gmelin.
- Equus hinnus, Schreb. t. 215.
- Maulesel, Bechstein.

3. Mule of a male Hemione and a female Zebra, Knowsley Menag. t. 57. f. 1. The shoulders and legs are banded.

Mule of a male Maltese Ass and a Zebra, Knowsley Menag. t. 57. f. 2.

The body and legs are striped; the stripes on the head and body are narrow, except the shoulder-cross, which is very distinct and forked; the rump is covered with small spots.

Ribbon-legged Ass (Asinus vulgaris, var. fasciata), Gray, Zool. Journ. i. 245.


4. Mule between a male Ass and Zebra.

Grey indistinct cross, and a few narrow dark stripes on the shoulders and fore legs; tail elongate, end tufted, upper part slightly banded; ears moderate.

Métis femelle d'Ane et de Zebra, F. Cuvier, Mamm. Lith. t. 9.

This is very different from the Mule with the Maltese Ass. It has scarcely any stripes.

5. Mule between a male Burchell’s Zebra and a common Ass, Knowsley Menag. t. 58. f. 1.

Grey, with very indistinct bands on the front of the back; a more distinct, short, narrow cross-band, divided into three below, and with some black cross-bands on the outside of the legs.


6. Mule between a male domestic Ass and an Hemione, Knowsley Menag. t. 58. f. 2.

It is very like the mother, but has a distinct black cross-band and some indistinct cross-bands on the outside of the hocks and knees.

This animal is now living in the Gardens of the Zoological Society. It changes its colour and becomes greyer in winter, like its female parent. I have seen another example of this Mule, exactly like the one here described.

7. Mule between an Hemione and a Burchell’s Zebra, Knowsley Menag. t. 59. f. 1.

Reddish grey; head, neck and front part of the body with very narrow, rather darker streaks.

8. The Hybrid Ass and Zebra, H. Smith, Equidæ, 343. t. 28; Mus. Paris, from F. Cuvier.

Quagga Mule, H. Smith, Equidæ, 343. t. 29.

9. Mules between Male Quagga and Mare, Morton, Phil. Trans. 1821.
The Hybrid first foal of Brood Mare and Quagga, H. Smith, Equidae, 342. t. 26.
The Filly bearing marks of the Quagga, H. Smith, Equidae, 342. t. 25.
The Colt, the third issue of Brood Mare and the second by the Black Arab, H. Smith, Equidae, 324. t. 27.
The Brood Mare and the third foal with marks of the Quagga, H. Smith, Equidae, 324. t. 14.

10. The offspring of a Mule (the produce of a male Ass and a Zebra) with a bay mare Pony, Knowsley Menag. t. 59. f. 2.

Iron-grey; with a short narrow cross-band on withers, very faint indications of stripes on the sides, and more distinct dark stripes on outsides of the hocks and knees; tail bushy from the base, like a horse; head heavy; mane brown and grey.

This animal is used to draw a small cart. It stands 8 hands high.
ADDENDA ET CORRIGENDA.

Page 26, line 34, after Drawings, add—Drawing of large horned Buffalo by Daniel at Luckow, Banks, Icon. ined. B.M. Mam. t.

Page 40, after line 4, add—The living Yak, Poëphagus, shows a much larger muffle than the dry skin leads one to expect; it is square, and occupies the space between the nostrils, but is smaller than that of the Bisons.

Page 43, line 16, after Ovibos moschatus, add—

Page 49, line 14, for Aigocerus read Hippotragus.

Page 50, line 12, for Boselaphus read Alcelaphus.

Page 85, line 2, after Cephalophus niger, add as Syn. Antelope Pluto, Temm. MSS. Mus. Leyd. 1852.

Page 102, line 2, for Ægocerus read Hippotragus, as the former name is applied to the wild goats; and change generic name of the two species to Hippotragus leucophæus, Hippotragus niger.

Page 114, line 29, after Mazama Americana, add—


Page 192, line 17, for N.W. coast of America read Siberia, as Sir John Richardson states they were tame deer, and they are not domesticated in America.
EXPLANATION OF PLATES.

Tab. I. fig. 1. Bos Taurus, p. 17, skull ♂.
       fig. 2. Bubalus brachycerus, p. 24, skull ♀.

Tab. II. figs. 1 & 2. Bubalus Caffer, p. 28, adult.
       fig. 3. Horns of young:—Pennant's specimen.

✓ Tab. III. figs. 1 & 2. Anoa depressicornis, p. 29.
       fig. 3. Bibos frontalis, p. 31.

✓ Tab. IV. figs. 1 & 2. Bison Americanus, p. 38.
       figs. 3 & 4. Poëphagus grunniens, p. 40.

✓ Tab. V. figs. 1 & 2. Ovibos moschatus, p. 43.
       figs. 3 & 4. Budorcas taxicola, p. 45, from Hodgson.

✓ Tab. V*. figs. 1 & 2. Ovibos moschatus, p. 43, ♀ jun.
       figs. 3 & 4. Ovibos moschatus, ♂.

✓ Tab. VI. figs. 1 & 2. Saïga Tartarica, p. 51.
       figs. 3 & 4. Pantholops Hodgsonii, p. 53.
       fig. 5. Gazella Dorcas, p. 55.

✓ Tab. VII. fig. 1. Tragops Bennettii, p. 62.
        fig. 2. Procapra gutturosa (picticauda), p. 54.
        fig. 3. Æpyceros Melampus, p. 65.

✓ Tab. VIII. figs. 1–3. Antilope Cervicapra (bezoartica), p. 66.
       figs. 4 & 5. Calotragus campestris (Tragulus), p. 71.
EXPLANATION OF PLATES.

Tab. IX. fig. 1. Tetracerus quadricornis, p. 68.
   fig. 2. Oreotragus saltatrix, p. 74.
   fig. 3. Neotragus Saltiana, p. 76.

Tab. X. fig. 1. Cephalophus Natalensis, p. 85.
   fig. 2. Nanotragus perpusillus, p. 89.
   fig. 3. Eleotragus arundinaceus, p. 91.

Tab. XI. figs. 1 & 2. Adenota Kob, p. 96.

Tab. XII. figs. 1 & 2. Ægocerus leucophaeus, p. 102.
     fig. 5. Addax nasomaculatus, p. 108.

Tab. XIII. fig. 1. Capricornis Bubalina, p. 111.
     fig. 2. Nemorhedus Goral, p. 112.

Tab. XIV. fig. 1. Mazama Americana, p. 114.
     figs. 2–4. Rupicapra Tragus, p. 115.

Tab. XV. figs. 1–3. Antilocapra Americana (Dicranocerus furcifer), p. 117.
     figs. 4 & 5. Connochetes Gnu, p. 119.

Tab. XVI. figs. 1–3. Alcelaphus Caama, p. 124.
     figs. 4 & 5. Damalis Senegalensis, p. 126.

Tab. XVII. figs. 1 & 2. Strepsiceros Kudu, p. 133.
     figs. 3 & 4. Oreas Canna, p. 135.

Tab. XVIII. figs. 1 & 2. Tragelaphus scripta, p. 138.
     figs. 3 & 4. Hemitragus Jemlaicus, p. 144.

Tab. XIX. figs. 1 & 2. Kemas Warryato, p. 146.

     figs. 4–6. Ægoceros Pyrenaica, female, p. 147.

Tab. XXI. figs. 1–3. Caprovis (Musimon) Vignei, p. 172.
     fig. 4. Caprovis Argali (Ovis), p. 174.

Tab. XXII. (XXIII.) figs. 1 & 2. Pseudois Nahoor, p. 177.
     fig. 3. Ammotragus Tragelaphus, p. 179.
EXPLANATION OF PLATES.


Tab. XXIV. fig. 1. Lama Glama (Pacos), p. 260. fig. 2. Lama Vicugna, p. 256. fig. 3. Meminna indica, p. 246.

Tab. XXV. fig. 1. Moschus chrysogaster, p. 246. fig. 2. Hyemoschus aquaticus, p. 248. fig. 3. Tragulus Stanleyanus, p. 249.


Tab. XXVII. fig. 1. Alces Malchis, p. 187. fig. 2. Tarandus rangifer, p. 191. fig. 3. Cervus Wallichii (Casperianus), p. 199.

Tab. XXVIII. fig. 1. Cervus Wallichii (Casperianus), p. 199. figs. 2 & 3. Dama vulgaris, p. 201.


EXPLANATION OF PLATES.

Tab. XXXVI. fig. 1. Pudu humilis (Chilensis), p. 240.
   figs. 2 & 3. Pelea Capreola, p. 90.
   fig. 4. Pelea——? Lower jaw of unknown species from the Cape of Good Hope.

Tab. XXXVII. fig. 1. Equus Caballus, p. 263.
   fig. 2. Asinus Hemionus, p. 269.
1.2. Ovibos Moschatus. ♂. Junr. 3. 4. ♂.
1. 2. HIPPOTRAGUS LEUCOPHAEUS  3. 4. ORYX LEUCORYX.  5. ADDAX NASOMACULATA

W. W. Grant, ad nat. lib.

Tab. XII.

Fred & George, Lithographers, 54, Hatton Garden
1.2. STREPSICEROS KUDU

3.4. OREAS CANNA

Ford & George, Lithographers, 64, Hatton Garden
3.5. IBEX NUBIANA

1.2. KEMAS WARRYATO
1. LAMA PACOS. 2. LAMA VICUGNA. 3. MEMINNA INDICA.
1. MOSCHUS CHRYSOCASTER. 2. HYEMOSCHUS AQUATICUS. 3. TRACULUS STANLEYANUS.
1. ALCE MALCHIS. 2. TARANDUS RANGIFER. 3. CERVUS CASPERIANUS.
1 CERVUS CASPERIANUS. 2. DAMA VULGARIS.
1. AXIS. 2. HYELAPHUS. 4. CARICUS. 8. CAPREOLUS.