

down from Tinklers; and from a London Gipsy he obtained a version of *The Master Thief*, which is current also among Roumanian Gipsies. At present our information is far too scanty to warrant a definite conclusion; but could it once be shown that the Asiatic possess the same stories as the European Gipsies, it might be necessary to admit that Europe owes a portion of its folk-lore to the Gipsies.<sup>1</sup>

*Religious Beliefs and Observances.*—"The Gipsies," says Grellmann, "brought no particular religion with them, but regulate themselves in religious matters according to the country where they live, . . . wherefore most writers place them below the heathens." This author notwithstanding, the Gipsies mix with their beginnings of Christianity or Mahometanism the relics of an older faith. *Devel*, their name for God or sky, is akin to the Sanskrit "God" (*cf. dyaus*, "sky"), and the German Romani *Miro baro devel dela berschindo*, "my great God gives rain," i.e., "it rains," preserves the original signification. *Guriben*, "thunder" (lit. "bellowing of cattle"), is another reminiscence of nature worship; and *trishul*, "cross" (Sanskrit *triśūla*, "the trident of Siva"), presents a curious instance of the transference of religious ideas. *Beng*, "devil," compared by Miklosich with the Sanskrit *bhēka*, "frog," is possibly a survival of serpent-worship, traces of which may be also found in various phrases, stories, emblems, and customs. Survivals also of phallic worship may probably be seen in the honour paid by the three great German Gipsy clans to the fir-tree, the birch, and the hawthorn (Liebich, p. 38); and in the veneration in which Welsh Gipsies hold the fasciated vegetable growth known as the *broado koro*. There are besides a number of other Gipsy superstitions interesting enough in themselves, but which lose their full significance by being at present isolated or insufficiently authenticated, such as, for instance, the alleged devotion of Norwegian Gipsies to a moon-god, Alako (Sundt, 105-10). In the *People of Turkey* (1878) the Tchinghamians are said to keep a fire continually burning in their camp; on the first of May to go all in a body to the sea-coast or banks of a river, where they thrice throw water on their temples, invoking the invisible *genii loci* to grant their special wishes; and annually to drink some potion, prepared in a way known only to the oldest and wisest of the tribe.

*Modes of Life.*—In Turkey, according to Paspati, the nomad Tchinghamians far outnumber the sedentary; but how far the same statement is true of Gipsies of other lands is hard to determine. Certain at least it is that in England few house-dwelling Gipsies are to be met with who do not remember that their forefathers followed a wandering life, or who do not themselves go temporarily under canvas as hopping or the great race-meetings come round. But though for centuries the tent has been the Gipsy's normal habitation, it would not seem to have been so always, if we look to the evidence of the Gipsy tongue. For had it been, assuredly the Romani name for "tent" would be everywhere the same, whereas the Persian Gipsy calls it *guri*, the nomad Tchinghamian *katina* (modern Greek *karōva*), the sedentary *tchērga* (Turkish *cherkeh*), the Polish Gipsy *czater*, the German *tattin* (from *tatto*, "hot"), the English *tan*, &c. On the other hand, *ker*, "a house," occurs in every dialect. From the time, however, of Fitz-Simeon onwards Gipsies have everywhere been found dwelling in tents, and his description of these tents as "like those of the Arabs, low, black, and oblong," tallies with Mr Boswell's:—

"The tents are made of rough blankets. They are nearly always brown ones, because the white blankets are not so good for the rain. First of all they measure the ground with a ridge-pole, then they

<sup>1</sup> See Paspati (pp. 594-629), Miklosich (part iv.), Professor Friedrich Müller's *Beiträge zur Kenntniss der Rom-Sprache* (2 parts, Vienna, 1869-72), and Dr Barbu Constantinescu's *Probe de Limba și Literatura Țigănilor din România* (Bucharest, 1878).

take the kettle-prop and make the holes exactly opposite each other. Then they take up the ridge-pole and stick all the rods into it. Then there is a blanket that goes behind, and is pinned on with pin-thorns; next to that come the large ones over the top of all, also pinned with the same pins."

In the matter of dress, Mr Crofton, in *Papers of the Manchester Literary Club* (1876), infers that "Gipsies formerly had a distinctive costume, consisting of a turban-like headdress of many colours, together with a large cloak, worn after the fashion of a toga, over a long loose under-skirt." The Gipsies, however, of to-day can hardly be said to have a distinctive garb, though certain minutiae of dress still render them easily recognizable. In Transylvania, for instance, their women's ear-rings differ in pattern from those of the natives; the Hungarian Gipsy chief wears silver buttons, bearing a serpent crest; and his old-fashioned English brother decks his Newmarket coat with spade-guineas or crown-pieces. The English Gipsy woman may be known by her bright silk handkerchief, her curiously-plaited hair, her massy rings, her coral or bead necklace, and by the *monging-guno*, a tablecloth arranged bagwise over her back. In August 1878 Queen Victoria was welcomed to Dunbar by a Gipsy "queen," one of the Reynolds family, who was "dressed in a black robe with white silk trimmings, and over her shoulders wore a yellow handkerchief. Behind her stood two other women, one of them noticeable from her rich gown of purple velvet, and two stalwart men, conspicuous by their scarlet coats." On the other hand, the dress of the children upon the Continent is simple, not to say scanty.

Everywhere Gipsies ply an endless variety of trades. In Egypt they monopolize the art of serpent-charming; in France and Spain they sit as professional models; in England we meet Gipsy Methodist preachers, actors, quack doctors, chimney-sweeps, carpenters, factory hands, &c. But everywhere the men have three principal callings—workers in metals, musicians, and horse-dealers; everywhere the women are "pleasant dancers" as in the days of Andrew Boorde, and by peddling and fortune-telling contribute their share—often more than their share—to the family purse. Gipsies have long been famous as copper and iron smiths in south-eastern Europe, where their horseshoes are reckoned unrivalled. The *calderari* (coppersmiths) of Hungary and Transylvania, at certain intervals make trading tours to Germany, France, England, Norway, and even Spain and Algeria. The workers in iron, on the other hand, seldom or never quit the land of their adoption, as neither naturally do the few remaining *aurari*, or Gipsy gold-washers of Transylvania. Simson describes a primitive Tinkler method of smelting iron, and the caves of Granada still echo to the clink of Gipsy anvils; but in England the surname *Petalengro*, "smith" (from *petul*, "horseshoe"), alone recalls the days when Gipsies surpassed the Gentile in the farrier's craft. Liszt, in his work *Des Bohémiens et de leur Musique en Hongrie* (Paris, 1859), ascribes to the Gipsies the creation of Hungary's national music. Bartalus (1868) contests the theory, but few would hesitate to admit its plausibility who at the Paris Exhibition (1878) or elsewhere have listened to the Gipsies' thrilling performance of a *czardas*, or are familiar with the undoubted compositions of Bihary, Csermak, and other Gipsy *maestri*. The Gipsy's favourite instrument is the violin, but few are the instruments he has not successfully essayed. The Eisteddfods of Wales have witnessed the triumphs of Gipsy harpists; and hundreds have been charmed by the concerts of the Roberts family, not knowing they were hearing a Gipsy band. "The Egyptians," as Krantzius drily remarked in 1520, "frequently change their horses;" horse-dealing and horse-stealing are too often synonymous terms with them. Fortune-telling is on the wane with Gentiles' waning belief in the fortune-

teller's powers. The Gipsy crone can no longer persuade the yeoman's wife to bury her treasure in the earth, and return in a fortnight's time to find it—gone. Those halcyon days of *madzin* are passed by; the servants' hall is now the only El Dorado left. Enclosure Acts have struck a deadly blow at English Gipsydom, driving the wanderers from breezy common and turf-edged lane to the smoky suburbs of great towns, or at best the outskirts of some watering place. Here, surrounded by Gentiles, the younger generation forget the wisdom of the Egyptians, relinquish time-honoured customs, and, wedding with the sons and daughters of the land, widen the stream of Romani blood, and so diminish its "depth." Several accounts have been furnished of Romani marriages, but they rarely tally, and some (Bright's, Borrow's, and Simson's) do not bear quotation. On the Continent one common feature is the breaking by the chief of a flower-crowned pitcher, from whose fragments, as they are many or few, he argues the fortunes of the bridal pair. There are many curious Gipsy practices relating to death and burial, such as waking the corpse, burning the deceased's effects, the fasting of his kinsfolk, and a species of *tabu*. The earliest record of Gipsies burning the property of their dead occurs in the *Annual Register* for 1773, p. 142: "The clothes of the late Diana Boswell, queen of the Gipsies, value £50, were burnt in the Mint, Southwark, by her principal courtiers, according to ancient custom" (*cf. Liebich*, p. 55). Abstinence from flesh or some other delicacy is not always a sign of mourning for the dead (*cf. Crofton* in *Papers of the Man. Lit. Club*, 1877); but its most interesting form is where a Gipsy wife or child for ever renounces the favourite delicacy of the dead husband or parent. Like motives prompt the dropping of the dead Gipsy's name entirely out of use, any survivors who happen to bear the same changing it to another. Much might be written of a kind of ceremonial purity prescribed by Gipsy law, and indicated in the language by the distinction between *chiklo*, "dirty," and *mokado*, "unclean." To wash a tablecloth with clothes is *mokado*, since it is connected with food; and a German Gipsy woman may not cook for four months after childbirth, while a vessel touched by the skirt of a woman's dress is held to be defiled. But with one other widespread practice we must take our leave of Gipsy customs, that, namely, of leaving at a cross-road a handful of grass or leaves, a heap of stones, a stick or some such mark (*patrin*, "leaf") to guide the stragglers of the band. See Liebich, p. 96, and Smart and Crofton, p. 199; and compare "Pola," in Sleeman's *Ramaseena, or a Vocabulary of the Thugs* (Calcutta, 1836).

*Character.*—The Gipsy character, strange medley of evil and of good, presents itself as black and hateful to the outside world, whilst to the Romani race it is all that is fair and lovable. "There's nothing worse than mumply Gentiles" is a saying often in Gipsy mouths, which affords a clue to much that is puzzling in the Gipsy's nature. He is at war with mankind, for centuries his oppressors, and, all being fair in war, may plunder and beguile at will, so that he be not caught. Gipsies' light-heartedness and courtesy are patent to all men; but only to true or adopted members of the tribe are their inmost hearts revealed. Their principal faults are childish vanity, professional cunning, indolence (caused by the absence of ambition), and a hot passionate temper. But they are as ready to forgive as they are quick to resent a wrong; and before implicit confidence their cunning gives place to inviolate honour, a fact borne strongly out by an incident in the *Life* of the actor Charles Mayne Young (p. 186, ed. 1871). Their family affection is intensely strong, prompting a parent never to chastise a younger child, a grown-up son meekly to take a thrashing from his father; and they are lavishly generous

to such as are poorer than themselves, even though Gentiles. Their love of nature reveals itself in a hundred quaint, poetic phrases, in a familiarity with beasts and herbs; their love of dumb creatures in the number of their pets. Quick and versatile, all Gipsies readily adapt themselves to any state of life; they have so wonderful a gift of tongues that formerly it was reckoned against them for a proof of sorcery. That hitherto the race has produced, outside the realm of music, none but mute geniuses, is rather due to lack of education than of ability; but "Zingaro" seems to have only been a nickname of the Quentin Matsys of the South, Antonio Solario (1382-1455), and John Bunyan from parish registers does not appear to have had one drop of Gipsy blood (*cf. Notes and Queries*, 5th ser. vol. ii.).

*Physique.*—Outwardly as within Gipsies present strong contrasts, some being strangely hideous, others very beautiful, though not with a regular, conventional beauty. Finely proportioned, they are as a race of middle stature, but lithe and sinewy, insensible to cold or wet, capable of supporting great fatigue. They pride themselves on their small hands and feet; corpulence rarely occurs, and only with the older women. The hair, black or dark brown, inclines to coarseness, is often frizzled, and does not soon turn grey; the complexion, a tawny olive, was compared by the Plymouth Pilgrims (1622) to that of the Indians of North America. The teeth are of dazzling whiteness and perfect regularity, the cheekbones high; and the aquiline nose is overhung by a strongly-marked brow, knit often in deep lines of thought. But the most striking feature is the full, dark eye, now lustreless, then changing to an expression of mysterious, childlike sorrow, presently blazing forth with sudden passion. As is the case in other Oriental races, the Gipsies early develop and early fade. See, in the *Archiv für Anthropologie* (1872), M. Isidor Kopernicki's learned and exhaustive treatise on Gipsy craniology.

*Theories as to Origin.*—Several attempts have been made to identify Gipsies with nomad Indian tribes: Grellmann, for example, discovers them in the Sūdras, Richardson in the Nāts (*Asiatic Researches*, vol. vii. 1784), Leland in the Doms, and B. R. Mitra in the Bediyās (*Memoirs of London Anthropol. Soc.*, vol. iii., 1870). These theories, however, need not detain us long; they rest merely on analogies, real or imagined, between the manners of Gipsies and such Indian vagrants, and not on the evidence of language. Nor were it even shown that any or all of these pariahs speak Romani among themselves, would such a discovery throw of necessity much light on the origin of our European Gipsies; it might simply prove that India has its Gipsy tribes. It is otherwise with the identification of Gipsies with the Jats, who in the Punjab alone numbered (1871) 1,309,399,—a theory started by Pott, elaborated by Bataillard, and supported by Newbold, Sir H. Rawlinson (*Proceedings of the Geogr. Soc.*, vol. i., 1857), Professor de Goeje (*Bijdrage tot de Geschiedenis der Zigeuners*, Amst., 1875), Captain Burton (*Academy*, March 27, 1875), and a writer in the *Edinburgh Review* (July 1878). About 420 A.D., says Firdousi (circa 1000), the Persian monarch Behram Gur imported 10,000 minstrels from India, assigning them lands and cattle. But they, wasting their substance, angered the king, who bade them take their instruments, and roaming through the land procure by their songs a livelihood, "wherefore the *Lāri* now wander about the world." Hamza, the Arab historian of Ispahan (c. 940), had already told how Behram dispersed through the cities of his realm 12,000 Indian musicians, "whose descendants are known as *Zuth*;" and of three writers who repeat the tale Mirkhond (15th century) calls the musicians *Djatt*. Thus *Lāri* (mod. Pers. "Gipsy") appears to be synonymous with *Zuth* or *Jat*, the name on the one hand of Damascus Gipsies (1), on the other of an agricultural and cattle-breeding race inhabiting the valley of the Indus. Neither are records lacking of westward migrations of Jats from the Indus, as in 714 to Mopsuestia and Antioch, while in 810 we hear of them in the Tigris valley, in 884 in the marshes of Khuzistan, in 855 in the territory of the Byzantine empire (Goeje). Jat theorists differ as to the date of the great migration that gave Europe its Gipsies, the *Edinburgh Review* writer placing it at 1025, while Sir Henry Rawlinson regards our Gipsies as lineal descendants of Firdousi's *Lāri*. These writers, however, all agree in making the Gipsies Jats; but none have essayed the necessary comparison of Romani and *Jātaki* (the idiom of a living Indian Jat), though Captain Burton himself has published a grammar of the latter in the *Journal of the Bombay Asiatic Society*

(Bombay, 1849). We have seen that the dialect of the Turkish Gipsies has remained unchanged for near five centuries, and the Jats are said to "preserve their vernacular tongue wherever they go." Supposing Gipsies then to have broken off from the main Jat stem so late as the eleventh, or even as early as the fifth century A.D., we should look for a striking resemblance between Játaki and Romani. Compare, however, with the foregoing paradigms the following from Burton's grammar:—SING. nom. *ghorá*, "a horse;" gen. *ghore-dá*; dat. *ghore-nán*; acc. *ghorá*; abl. *ghore-te* or *-ton*, "from a horse;" PLUR. nom. *ghore*; gen. *ghorián* or *ghore-dá*; dat. *ghorián nán*, &c. The Játaki third personal pronoun, again, runs:—SING. nom. *uá*, "he;" gen. *usádá*; dat. and acc. *usán*; abl. *usté*; PLUR. nom. *uhe*; gen. *uhindá*, &c.: its verbal formation is almost equally unlike the Romani. In the face of the great unlikeness of Romani and Játaki one may well concur with Bataillard in the rejection of this theory, and proceed to consider the later views of that writer as advanced in *Les Origines des Tsiganes* (Par., 1875), *Les Tsiganes de l'Áge du Bronze* (Par., 1876), and *État de la question de l'ancienneté des Tsiganes en Europe* (Par., 1877). He now believes the Gipsies to have existed in Europe from immemorial times,—a conclusion to which he is led by the absence of any record of their passage across the Bosphorus, by their enslaved condition in Wallachia in the 14th century, by the casual notices cited above of their presence at a still earlier date, and by their present monopoly of metallurgical arts in South-Eastern Europe. These mainly negative proofs lose some of their force when we remark that neither is any record known to exist of the passage of Gipsies to England, Scotland, or America; and that at Corfu in 1346 (*i.e.*, in historic times) we read of Gipsies being reduced to vassalage. Assuredly it is a mighty leap from the Athingani of the 9th century A.D. to the Sigynnae of Herodotus (v. 9), whom Bataillard claims for the ancestors of the Gipsy race. The strength, however, of the theory lies less in attempted identifications than in its explanation of the unsolved problem, What was the race that carried bronze to Northern and Western Europe? Referring for a general survey of the question to the article *ARCHÆOLOGY*, to E. Chantre's *Áge de Bronze* (4 vols., Paris, 1877), and to Lubbock's *Prehistoric Times* (2d ed., London, 1869), we extract from the last-named work the following passages:—"The absence of implements made either of copper or tin seems to indicate that the art of making bronze was introduced into Europe, [a view confirmed by the fact that] wherever we find the bronze swords or celts they are the same, not similar in character, but identical. . . . The discovery of moulds proves that the art of casting in bronze was known and practised in many countries. Hence it appears most probable that the knowledge of metal is one of those great discoveries which Europe owes to the East. . . . The implements of bronze appear to have belonged to a race with smaller hands than those of the present European nation. . . . As regards the smallness of the hands, we must remember that Hindus share this peculiarity with Egyptians. . . . The Phœnicians were well acquainted with the use of iron. . . . We have still very much to learn in regard to the race by whom the knowledge of metal was introduced into our continent." Each passage suggests or is explained by the supposition that this was no other than the small-handed and eastern Gipsy race. The Calderari work exclusively in copper, never in iron; no Gipsy bronze-smith would have spoilt his trade by introducing iron. Traces might perhaps yet be found in Norway of the workings of a band of Calderari, who visited that country in 1874; and certainly the utensils they wrought in France were exactly similar to those that they wrought in Norway. Bataillard's theory is strengthened by the fact that so high an authority as M. de Mortillet—who is followed by Chantre and Bur-nouf—had been independently led to a like conclusion in 1874. Its strongest confirmation, however, is the important discovery of Dr Kopernicki that in Eastern Galicia there survive to the present day certain *Zlotars* (Ruth. "goldsmiths"), Gipsy workers in bronze, whose processes Bataillard minutely describes in *Les Zlotars* (Paris, 1878). Difficulties there are in accepting the theory:—the unsettled question of the antiquity of the Romani tongue; the yawning chasm of a thousand years; above all, the unnoticed fact that nearly all the metallurgical terms of Romani seem to be borrowed from Greek—*kalás*, "tin" (*καλάσ*); *kliárikomá*, "copper" (*χάλκιμα*); *móli*, "lead" (*μόλι*); *kakákoví*, "kettle" (*κακάβη*); *amíni*, "anvil" (*ἀμίνι*); *rits*, "file" (*ρίτ*); *svirí*, "hammer" (*σφύρι*); *kviláni*, "pincers" (*κβιλάνι*); *karfin*, "nail" (*καρφί*); *kliáti*, "key" (*κλειδί*); *gampána*, "bell" (*καμπάνα*); and *pétalo*, "horseshoe" (*πέταλον*). This looks like an insuperable objection, since certainly no Calderari of to-day would borrow from French or German the names for these the most familiar objects of his long-practised calling; and unless Bataillard be prepared to maintain that Greek took the terms from Romani, not *vice versa*, his theory falls.

*Bibliography.*—The literature on the Gipsies is richer in appearance than in reality. Miklosich (i. 54–59) and Bataillard (*Les derniers travaux relatifs aux Bohémiens*, Paris, 1872) give the titles of 118 works, a number which might be largely increased. But many of these "works" are articles hidden away in periodicals, as "The

English Gipsies," by the Rev. S. James, in *The Church of England Magazine*, 1875; many are mere rehashes of earlier publications. Imperfect though it be, Gröllmann's *Historischer Versuch über die Zigeuner* (1783; 2d and enlarged ed., Gitt., 1787; Eng. translation by M. Raper, 1787) remains the only attempt at a full history of the Gipsy race; its grave deficiencies are best supplied by Sprengler's *Dissertatio historico-juridica de Cingenis sive Zigeunis* (Leyden, 1839), by Hopf's *Einwanderung der Zigeuner in Europa* (Gotha, 1870), by the historical portions of Miklosich's work, and above all by Bataillard's *De l'Apparition et de la Dispersion des Bohémiens en Europe* (Paris, 1844), *Nouvelles Recherches* (Paris, 1849), and *État de la Question*, &c. (Paris, 1877). On the language viewed as a whole the chief authorities are—*Die Zigeuner in Europa und Asien* (2 vols., Halle, 1844–45), by A. F. Pott; *Zigeunerisches* (Halle, 1865), by G. H. Ascoli; and *Ueber die Mundarten und die Wanderungen der Zigeuner Europas* (8 parts, Vienna, 1872–78), and *Beiträge zur Kenntniss der Zigeunermundarten* (4 parts, Vienna, 1874–78), by F. von Miklosich. From works on the Gipsies of different European lands the following may be given as a selection (the more important being marked with an asterisk):—for Turkey, *Études sur les Tchinghians* (Constan., 1870), by A. G. Paspatis; for Roumania, the unsatisfactory *Grammaire, Dialogues, et Vocabulaire de la Langue des Cigains* (Paris, 1868), by J. A. Vaillant; for Hungary, *A cigány nyelv etenei* (Pesth, 1853), by J. Bornemisz; for Bohemia, *Řomani Czib* (Prague, 1821), by A. J. Puchmayer; for Germany, *Die Zigeuner in ihrem Wesen und ihrer Sprache* (Leipzig, 1863), by R. Liebhich; for Poland, *Ejs historyczny ludu cygáńskiego* (Wilna, 1830), by T. Narbutt; for Russia, *Ueber die Sprache der Zigeuner in Russland* (St. Pet. 1853), by O. Böhlingk; for Norway, *Beretning om Fante- eller Landstrygerfolket i Norge* (5 parts, Christian., 1850–65), by E. Sandt; for Denmark, *Talere og Natmandsfolk i Danmark* (Copenh., 1872), by F. Dyrland; for England, *The English Gipsies and their Language* (London, 1873), by C. G. Leland, *Romano-Lavo-Lit: Word-book of the English Gipsy Language* (1874), by G. Borrow, and *The Dialect of the English Gipsies* (1875), by B. Smart and H. T. Crofton; for Scotland, *A History of the Gipsies* (London, 1865), by W. Simson; for Italy, *Zigeunerisches* (Halle, 1865), by Ascoli; for the Basque Country, *Vocabulaire de la Langue des Bohémiens habitant les Pays Basques Français* (Bord., 1862); for Spain, *The Zincali* (2 vols., Lond., 1841; new ed. 1873), by Borrow. From works on non-European Gipsies selection is unnecessary, since their sum total is as follows:—"Ueber die Sprache der Zigeuner in Syrien," by Pott, in *Zeitschrift für die Wissenschaft der Sprache* (Berlin, 1846); *Reisen durch Syrien, Palästina, &c.* (Berlin, 1854), by U. J. Seetzen, containing a Syro-Romani vocabulary; "The Gipsies of Egypt," in the *Journ. of the Roy. Asiatic Soc.* (Lond., 1856), by Captain Newbold, comprehending vocabularies from Egypt, Syria, and Persia; "Die Zigeuner in Egypten," in *Petermann's Mittheilungen* (Gotha, 1862), by A. von Kremer; *Notes et Questions sur les Bohémiens en Algérie* (Paris, 1874), by P. Bataillard; and *Travels in the East* (Lond., 1823), by Sir W. Ouseley, vol. iii. of which gives a Karáchi vocabulary. To these may be added the specimens of the Gipsy dialects of Asia Minor, furnished by Paspatis, and vocabularies from Armenia and Siberia in Miklosich's *Beiträge* (iv. pp. 33–41). (F. H. G.)

**GIRAFFE** (*Camelopardalis giraffa*), a mammal belonging to the ruminant group of the Artiodactyle Ungulates, and the single living representative of the family *Camelopardalidae*. Intermediate between the members of the deer and ox families, the giraffe differs from both in having neither true horns nor antlers. It possesses however two solid, bony, and persistent appendages, attached partly to the frontal and partly to the parietal bones; and not to the former only as in the true horned ruminants, and these, unlike the processes of the latter, are distinct bones, separable, at least in the young animal; from those of the forehead. These horn-like peduncles are completely covered over by the skin of the forehead, and are terminated by a tuft of bristles, while in front of them there is a protuberance caused by a thickening of the bone, sufficiently prominent in the male to have been frequently described as a third horn. The giraffe is the tallest of existing animals, measuring usually from 15 to 16 feet high—the females being somewhat less—but attaining in the largest examples a height of 18 feet. This exceptional elevation is chiefly due to its great length of neck and limb, the cervical vertebræ, although only seven in number as in other mammals, being in this case exceedingly long. Its body is proportionately short, measuring only 7 feet between the breast and rump, and slants rapidly towards the tail—a peculiarity which has

given rise to the erroneous impression that the fore legs of the giraffe are longer than the pair behind. Its feet terminate in a divided hoof, which, says Sir Samuel Butler, "is as beautifully proportioned as that of the smallest gazelle"; and the accessory hoofs found in most ruminants are entirely wanting. Its head is small, its eyes large and lustrous; and these, which give to the giraffe its peculiarly gentle appearance, are capable of a certain degree of lateral projection, which enable the creature without turning its head to see around and to a certain extent behind it. The elevated eyes of the giraffe thus enjoy a wider range of vision than those of any other quadruped. Its nostrils are provided with a peculiar mechanism of sphincter muscles, by which they can be opened or closed at will, and the animal is thus enabled to avoid the injurious effects of the sand storms which occasionally pass over its native haunts.



Giraffe.

Its tongue is remarkable for its great length, measuring about 17 inches in the dead animal, and for its great elasticity and power of muscular contraction while living. It is covered with numerous large papillæ, and forms, like the trunk of the elephant, an admirable organ for the examination and prehension of its food. The graceful appearance presented by the giraffe, to which it owes its name through the Arabian *Xirapha*, is greatly heightened by the orange-red colour of its hide, mottled as it is all over with darker spots; while in its long tail, ending in a luxurious tuft of dark-coloured hair, it possesses an admirable fly-whipper, without which it would probably be impossible for the giraffe to maintain its ground against the seroot fly and other stinging insects of central Africa. It lives on open plains in the neighbourhood of low woods; high forest being scrupulously avoided, as depriving it of the exten-

sive prospect which forms its chief defence against the attacks of its two great enemies—the lion and man. It feeds almost exclusively on the foliage of trees, showing a preference for certain varieties of mimosa, and for the young shoots of the prickly acacia, for browsing on which the prehensile tongue and large free lips of the giraffe are specially adapted. It is gregarious in its habits, living in small herds rarely of more than twenty individuals, although Sir S. Baker, who hunted it in Abyssinia, states that he has seen as many as a hundred thus herding together.

There is probably no animal more difficult of approach than the giraffe, owing to that exceeding wariness which prompts it to place sentinels to give the herd timely warning of approaching danger, as well as to its ability, from the elevated position of its eyes, and the openness of the ground it frequents, to see danger, and from its keenness of scent to smell it from afar. It is a fleet though by no means graceful runner, its awkward, shambling gait being due to its moving the fore and hind legs of the same side simultaneously. In hunting it on horseback the rule to be observed, according to the traveller already mentioned, is to press the giraffe the instant he starts; "it is the speed that tells upon him, and the spurs must be at work at the very commencement of the hunt, and the horse pressed along at his best pace; it must be a race at top speed from the very start, but should the giraffe be allowed the slightest advantage for the first five minutes the race will be against the horse." In pursuing it thus on horseback the experienced hunter avoids too close an approach to the creature's heels, a blow from which he has probably learnt to regard, with Dr Livingstone, as leaving little to choose between it and "a clap from the arm of a windmill." Although trusting for safety to flight, it will, when brought to bay, even turn upon the lion; and not seldom does it defend itself successfully against his attacks by the vigorous blows of its powerful limbs. It is, however, powerless against the "king of beasts" when taken unawares, and with this object the latter lies in wait by the banks of streams, and springs upon the giraffe as it seeks to quench its thirst. In captivity it is said to make use of its skin-covered horns as weapons of defence, giving impetus to the blow, not by depressing and then elevating the head, as in the butting of an ox or sheep, but by a sidelong swing of its muscular neck. The skin of the giraffe is in many parts so thick that the bullet of the hunter often fails to pierce it, the surest method of hunting it being that pursued by the Hamran Arabs of Abyssinia who run it down, and when galloping at full speed cut the tendons of its legs, or "hamstring" it, as this operation is called, with their broadswords, and thus completely disable it.

The giraffe is only found wild in Africa, where it ranges throughout the open country of Ethiopia as far south as the confines of Cape Colony. Until about fifty years ago it was almost totally unknown in Europe; it is now, however, to be found in most of the European zoological gardens, where it appears to thrive as well on corn and hay as on the mimosas of its native haunts. It also breeds freely in confinement, so that it may now be regarded as acclimatized in Europe. The giraffe family was more largely represented and enjoyed a wider distribution during the Miocene period, fossil remains of extinct species having been found in Greece and the Siwalik Hills; while an allied genus, *Helladotherium*, with less neck and more body than the existing giraffe, extended during the same period from the south of France to north-west India.

The skin of the giraffe forms a valuable leather material, that made from the thicker parts being in special request for sandals; its flesh, according to Sir S. Baker, was, when roasted, the best he had ever tasted; the tendons of its long legs are valued by the Arabs as thread for sewing