

THE  
PHILOSOPHICAL MAGAZINE:

COMPREHENDING  
THE VARIOUS BRANCHES OF SCIENCE,  
THE LIBERAL AND FINE ARTS,  
AGRICULTURE, MANUFACTURES,  
AND  
COMMERCE.

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“Nec araneorum sane textus ideo melior, quia ex se fila gignunt. Nec noster vilior quia ex alienis libamus ut apes.” JUST. LIPS. *Monit. Polit.* lib. i. cap. 1.

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All artists who speak of the use of Naples yellow, give cautions against applying iron to it, as the colour by these means becomes greenish, or at least dirty. For this reason, it must be pounded on a stone, and scraped together with an ivory spatula. It is employed chiefly in oil painting, because the colour is softer, brighter, and richer than that of ochre, yellow lead, or orpiment, and because it far exceeds these pigments in durability. It is employed in particular when the yellow ought to have the appearance of gold, and in this respect it may be prepared with gum water and used as a water colour. A still greater advantage of it is, that it is proper for enamel painting, and on that account may be employed on porcelain or earthen ware \*. In the last place I would recommend to artists to examine whether the oxyd prepared from wolfram, by boiling in the muriatic acid, which has a beautiful yellow colour, might not be used in the same manner as Naples yellow †.

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IX. *Comparison between the Human Race and that of Swine.*

By I.F. BLUMENBACH. *From Magazin für das Neueste aus der Physik. Vol. VI.*

SOME late writers on natural history seem doubtful whether the numerous distinct races of men ought to be considered as mere varieties, which have arisen from degeneration, or as so many species altogether different. The cause of this seems chiefly to be, that they took too narrow a view in their researches; selected, perhaps, two races the most different from each other possible, and, overlooking the intermediate races that formed the connecting links between them, compared these two together; or, they fixed their

\* In the Memoirs of the Academy of Sciences for 1767 Fougereux has proved that the giallolino prepared by him produced on porcelain a much more beautiful colour than the Naples yellow sold in the shops.

† Gmelin's *Technische Chemie*, p. 229.



attention too much on man, without examining other species of animals, and comparing their varieties and degeneration with those of the human species. The first fault is, when one, for example, places together a Senegal negro and an European Adonis, and at the same time forgets that there is not one of the bodily differences of these two beings, whether hair, colour, features, &c. which does not gradually run into the same thing of the other, by such a variety of shades that no physiologist or naturalist is able to establish a certain boundary between these gradations, and consequently between the extremes themselves.

The second fault is, when people reason as if man were the only organised being in nature, and consider the varieties in his species to be strange and problematical, without reflecting that all these varieties are not more striking or more uncommon than those with which so many thousands of other species of organised beings degenerate, as it were, before our eyes.

As my observations respecting the bodily conformation and mental capacity of the negroes \* may serve to warn mankind against the first error, and at the same time to refute it, I shall here offer a few remarks to refute the false conclusion which might be formed from a careless comparison of the degenerations among the human race with the varieties among other animals, and for that purpose shall draw a comparison between the human race and that of swine †.

More reasons than one have induced me to make choice of swine for this comparison; but in particular, because they have a great similarity, in many respects, to man: not, however, in the form of their entrails, as people formerly believed, and therefore studied the anatomy of the human

\* See Phil. Mag. vol. iii. p. 141.

† See, for example, *Anatomia Porci* of the old Arabian Cophon in the beginning, where he says: Et cum bruta animalia quædam, ut simia, in exterioribus nobis inveniantur similia, interiorum partium nulla inveniuntur adeo similia ut porci.



body purposely in swine; so that even, in the last century, a celebrated dispute, which arose between the physicians of Heidelberg and those of Durlach, respecting the position of the heart in man, was determined in consequence of orders from government, by inspecting a sow, to the great triumph of the party who really were in the wrong. Nor is it because in the time of Galen, according to repeated assertions, human flesh was said to have a taste perfectly similar to that of swine \*; nor because the fat †, and the tanned hides of both, are very like to each other; but because both, in regard to the economy of their bodily structure, taken on the whole, shew unexpectedly, on the first view, as well as on closer examination, a very striking similitude.

Both, for example, are domestic animals; both *omnivora*; both are dispersed throughout all the four quarters of the world; and both consequently are exposed, in numerous ways, to the principal causes of degeneration arising from climate, mode of life, nourishment, &c.; both, for the same reason, are subject to many diseases, and, what is particularly worthy of remark, to diseases rarely found among other animals than men and swine, such as the stone in the bladder ‡; or to diseases exclusively peculiar to these two, such as the worms, found in measles swine §. Another

\* Galen says, in the tenth book of his work on the Power of Simple Medicines, that tavern-keepers and cooks often served up human flesh instead of swine's flesh to their guests, without their perceiving it. He himself was told by persons worthy of credit, that they had ate of such food in a public inn with the best appetite, not knowing what it was till they at length found half a finger, when they became terribly alarmed for fear of the murderous host, who was, however, soon after caught in the fact and punished.

† See *Schwenkfeld Theriotroph. Silesiæ*, p. 127.

‡ Among the wild swine, particularly in Russian Tartary. A pretty large stone of that kind, forming a part of Baron Asch's present, is preserved in the Academical Museum of Gottingen. Domestic swine, however, are in many places subject to this malady. See *Schwenkfeld Theriotroph. Silesiæ*, ut supra.

§ I was guilty of an error when I said, in the third edition of my

Manual



Another reason, however, why I have made choice of swine for the present comparison is, because the degeneration and descent from the original race are far more certain in these two animals, and can be better traced than in the varieties of other domestic animals. For no naturalist, I believe, has carried his scepticism so far as to doubt the descent of the domestic swine from the wild boar; which is so much the more evident, as it is well known that wild pigs, when caught, may be easily rendered as tame and familiar as domestic swine\*: and the contrary also is the case; for if the latter by any accident get into the woods, they as readily become wild again, so that there are instances of such animals being shot for wild swine; and it has not been till they were opened and found castrated, that people were led to a discovery of their origin, and how and at what time they ran away†. It is well ascertained, that, before the discovery of America by the Spaniards, swine were unknown in that quarter of the world, and that they were afterwards carried thither from Europe. All the varieties, therefore, through

Manual of Nat. History, p. 464, that Goze was the first who placed the animal nature of the measles in swine beyond all doubt. I now find that in the last century Malpighi gave an accurate description of the disease, accompanied also with a figure of the worms. See his *Opera Posthuma*, London 1697, fol. p. 84. "In suisbus verminosis, qui vulgariter *lazaroli* dicuntur, multiplices stabulantur vermes, unde horum animalium carnes publico edicto prohibentur. Occurrunt autem copiosi intra fibras musculosas natum; obvia namque oblonga vesica quasi folliculus diaphano humore refertus, in quo natat globosum corpus candidum, quod disrupto folliculo leviter compressum eructat vermem, qui foras exeritur, et videtur emulari cornua emissilia cochlearum, ejus enim annuli intra se reflexi conduntur, et ita conglobatur animal. In apice attollitur capitulum. A conglobato verme ad extremum folliculi umbilicale quasi vas producitur." The late Werner, as far as I know, was the first who discovered in the human body the same kind of worms as those found in measles swine.

\* This experiment was not long ago made with the best consequences in the abbey of St. Urban, in the canton of Lucerne.

† See Lehmann's *Natürliche merkwürdigkeiten im Meissnischen Ober-erzgebirge*, p. 605.

which



which this animal has since degenerated, belong, with the original European race, to one and the same species; and since no bodily difference is found in the human race, as will presently appear, either in regard to stature, colour, the form of the cranium, &c. which is not observed in the same proportion among the swine race, while no one, on that account, ever doubts that all these different kinds are merely varieties that have arisen from degeneration through the influence of climate, &c. this comparison, it is to be hoped, will silence those sceptics who have thought proper, on account of these varieties in the human race, to admit more than one species.

#### I. *In regard to Stature.*

In this respect the Patagonians \*, as is well known, have afforded the greatest employment to anthropologists. The romantic tales, however, of the old travellers, who give to these inhabitants of the southern extremity of America a stature of ten feet and more, are scarcely worth notice; and even the more modest relations of later English navigators, who make their height from six to seven feet, have been doubted by other travellers, who, on the same coast, sought for such children of Enoch in vain. But we shall admit every thing said of the extraordinary size of these Patagonians, by Byron, Wallis, and Carteret, the first of whom † assigns to their chief, and several of his attendants, a height of not less than seven feet, as far as could be determined by the eye; the second ‡, who asserts that he actually measured them, gives to the greater part of them from 5 feet 10 inches to 6 feet; to some 6 feet 5 inches, and 6 feet 6; but to the tallest, 6 feet 7 inches: and this account is confirmed by the last-mentioned

\* Or rather Pata-chonians, for the people themselves are called *Chonos*; and because their feet, covered with raw hides, gave them a likeness to a bear's paws, they were called by the first Spanish navigators *pata-chonos*. See Forster in *Comment. Soc. Scient. Gottingens.* vol. iii. p. 127.

† Hawkesworth's *Collection of Voyages*, London, 1773. vol. 1. p. 27.

‡ Ibid. p. 153.



of the above circumnavigators\*. Now, allowing this to be the case, it is not near such an excess of stature as that observed in many parts of America among the swine, originally carried thither from Europe; and of these I shall mention in particular those of Cuba†, which are more than double the size of the original stock in Europe.

II. *In regard to Colour, and the Nature of Hair.*

The natives of Guinea, Madagascar, New Holland, New Guinea, &c. are black; many American tribes are reddish brown, and the Europeans are white. An equal difference is observed among swine in different countries. In Piedmont, for example, they are black. When I passed through that country, during the great fair for swine at Salenge, I did not see a single one of any other colour. In Bavaria, they are reddish brown; in Normandy, they are all white.

Human hair is, indeed, somewhat different from swine's bristles, yet in the present point of view they may be compared with each other. Fair hair is soft, and of a silky texture; black hair is coarser, and among several tribes, such as the Abyssinians, Negroes, and the inhabitants of New Holland, it is woolly, and most so among the Hottentots‡. In the like manner, among the white swine in Normandy, as I was assured by an incomparable observer, Sulzer of Ronneburg, the hair on the whole body is longer and softer than among other swine; and even the bristles on the back are very little different, but lie flat, and are only longer than the hair on the other parts of the body. They cannot, therefore, be employed by the brush-makers. The difference between the hair of the wild boar and the domestic swine, particularly in regard to the softer part between the strong bristles, is, as is well known, still greater.

\* Philosoph. Transactions, vol. lx. p. 20.

† F. S. Clavigero Storia Antica del Messico, vol. iv. p. 145.

‡ Sparmann says, the hair of the Hottentots is more woolly than that of the Negroes.



III. *In regard to the Form of the Cranium.*

The whole difference between the cranium of a negro and that of an European, is not in the least degree greater than that equally striking difference which exists between the cranium of the wild boar and that of the domestic swine. Those who have not observed this in the animals themselves, need only to cast their eye on the figure which Daubenton has given of both.

I shall pass over less national varieties which may be found among swine as well as among men, and only mention that I have been assured by Mr. Sulzer that the peculiarity of having the bone of the leg remarkably long, as is the case among the Hindoos, has been remarked with regard to the swine in Normandy. "They stand very long on their hind legs," says he, in one of his letters; "their back, therefore, is highest at the rump, forming a kind of inclined plane; and the head proceeds in the same direction, so that the snout is not far from the ground." I shall here add, that the swine, in some countries, have degenerated into races which in singularity far exceed every thing that has been found strange in bodily variety among the human race. Swine with solid hoofs were known to the ancients, and large herds of them are found in Hungary, Sweden, &c. In the like manner the European swine, first carried by the Spaniards in 1509 to the island of Cuba, at that time celebrated for its pearl fishery, degenerated into a monstrous race, with hoofs which were half a span in length \*.

\* Herrera Historia de las Indias Occident. Madrid 1601, vol. p. 239.