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Part Three. Sexual Selection In Relation To Man And Conclusion.

CHAPTER XIX. SECONDARY SEXUAL CHARACTERS OF MAN.

WITH mankind the differences between the sexes are greater than in most of the Quadrumana, but not so great as in some, for instance, the mandrill. Man on an average is considerably taller, heavier, and stronger than woman, with squarer shoulders and more plainly pronounced muscles. Owing to the relation which exists between muscular development and the projection of the brows,* the superciliary ridge is generally more marked in man than in woman. His body, and especially his face, is more hairy, and his voice has a different and more powerful tone. In certain races the women are said to differ slightly in tint from the men. For instance, Schweinfurth, in speaking of a negress belonging to the Monbuttoos, who inhabit the interior of Africa a few degrees north of the equator, says, "Like all her race, she had a skin several shades lighter than her husband's, being something of the colour of half-roasted coffee."*(2) As the women labour in the fields and are quite unclothed, it is not likely that they differ in colour from the men owing to less exposure to the weather. European women are perhaps the brighter coloured of the two sexes, as may be seen when both have been equally exposed.

* *Schaaffhausen, translation, in Anthropological Review, Oct., 1868, pp. 419, 420, 427.*

**(2) The Heart of Africa, English transl., 1873, vol i., p. 544.*

Man is more courageous, pugnacious and energetic than woman, and has a more inventive genius. His brain is absolutely larger, but whether or not proportionately to his larger body, has not, I believe, been fully ascertained. In woman the face is rounder; the jaws and the base of the skull smaller; the outlines of the body rounder, in parts more prominent; and her pelvis is broader than in man;* but this latter character may perhaps be considered rather as a primary than a secondary sexual character. She comes to maturity at an earlier age than man.

** Ecker, translation, in Anthropological Review, Oct., 1868, pp. 351-356. The comparison of the form of the skull in men and women has been followed out with much care by Welcker.*

As with animals of all classes, so with man, the distinctive characters of the male sex are not fully developed until he is nearly mature; and if emasculated they never appear. The beard, for instance, is a secondary sexual character, and male children are beardless, though at an early age they have abundant hair on the head. It is probably due to the rather late appearance in life of the successive variations whereby man has acquired his masculine characters, that they are transmitted to the male sex alone. Male and female children resemble each other closely, like the young of so many other animals in which the adult sexes differ widely; they likewise resemble the mature female much more closely than the mature male. The female, however, ultimately assumes certain distinctive characters, and in the formation of her skull, is said to be intermediate between the child and the man.* Again, as the young of closely allied though distinct species do not differ nearly so much from each other as do the adults, so it is with the children of the different races of man. Some have even maintained that race-differences cannot be detected in the infantile skull.*⁽²⁾ In regard to colour, the new-born negro child is reddish nut-brown, which soon becomes slaty-grey; the black colour

being fully developed within a year in the Soudan, but not until three years in Egypt. The eyes of the negro are at first blue, and the hair chestnut-brown rather than black, being curled only at the ends. The children of the Australians immediately after birth are yellowish-brown, and become dark at a later age. Those of the Guaranyes of Paraguay are whitish-yellow, but they acquire in the course of a few weeks the yellowish-brown tint of their parents. Similar observations have been made in other parts of America.*⁽³⁾

* *Ecker and Welcker, ibid., pp. 352, 355; Vogt, Lectures on Man, Eng. transl., p. 81.*

*⁽²⁾ *Schaaffhausen, Anthropolog. Review, ibid., p. 429.*

*⁽³⁾ *Pruner-Bey, on negro infants as quoted by Vogt, Lectures on Man, Eng. transl., 1864, p. 189: for further facts on negro infants, as quoted from Winterbottom and Camper, see Lawrence, Lectures on Physiology, &c., 1822, p. 451. For the infants of the Guaranyes, see Rengger, Saugethiere, &c., s. 3. See also Godron, De l'Espece, tom. ii., 1859, p. 253. For the Australians, Waitz, Introduction to Anthropology, Eng. transl., 1863, p. 99.*

I have specified the foregoing differences between the male and female sex in mankind, because they are curiously like those of the Quadrumana. With these animals the female is mature at an earlier age than the male; at least this is certainly the case in *Cebus azarae*.* The males of most species are larger and stronger than the females, of which fact the gorilla affords a well-known instance. Even in so trifling a character as the greater prominence of the superciliary ridge, the males of certain monkeys differ from the females,*⁽²⁾ and agree in this respect with mankind. In the gorilla and certain other monkeys, the cranium of the adult male presents a strongly-marked sagittal crest, which is absent in the female; and Ecker found a trace of a similar difference between the two sexes in the Australians.*⁽³⁾ With monkeys when there is any difference in the voice, that of the

male is the more powerful. We have seen that certain male monkeys have a well-developed beard, which is quite deficient, or much less developed in the female. No instance is known of the beard, whiskers, or moustache being larger in the female than in the male monkey. Even in the colour of the beard there is a curious parallelism between man and the *Quadrupana*, for with man when the beard differs in colour from the hair of the head, as is commonly the case, it is, I believe, almost always of a lighter tint, being often reddish. I have repeatedly observed this fact in England; but two gentlemen have lately written to me, saying that they form an exception to the rule. One of these gentlemen accounts for the fact by the wide difference in colour of the hair on the paternal and maternal sides of his family. Both had been long aware of this peculiarity (one of them having often been accused of dyeing his beard), and had been thus led to observe other men, and were convinced that the exceptions were very rare. Dr. Hooker attended to this little point for me in Russia, and found no exception to the rule. In Calcutta, Mr. J. Scott, of the Botanic Gardens, was so kind as to observe the many races of men to be seen there, as well as in some other parts of India, namely, two races of Sikhim, the Bhotas, Hindoos, Burmese, and Chinese, most of which races have very little hair on the face; and he always found that when there was any difference in colour between the hair of the head and the beard, the latter was invariably lighter. Now with monkeys, as has already been stated, the beard frequently differs strikingly in colour from the hair of the head, and in such cases it is always of a lighter hue, being often pure white, sometimes yellow or reddish.*(4)

* *Rengger, Saugethiere, &c., 1830, s. 49.*

*(2) *As in Macacus cynomolgus (Desmarest, Mammalogie, p. 65), and in Hylobates agilis (Geoffroy St-Hilaire and F. Cuvier, Histoire Nat. des Mammiferes, 1824, tom. i., p. 2).*

*(3) *Anthropological Review, Oct., 1868, p. 353.*

*(4) *Mr. Blyth informs me that he has only seen one instance of the beard, whiskers, &c., in a monkey becoming white with old age,*

as is so commonly the case with us. This, however, occurred in an aged Macacus cynomolgus, kept in confinement, whose moustaches were "remarkably long and human-like." Altogether this old monkey presented a ludicrous resemblance to one of the reigning monarchs of Europe, after whom he was universally nicknamed. In certain races of man the hair on the head hardly ever becomes grey; thus Mr. D. Forbes has never, as he informs me, seen an instance with the Aymaras and Quechuas of South America.

In regard to the general hairiness of the body, the women in all races are less hairy than the men; and in some few Quadrumana the under side of the body of the female is less hairy than that of the male.* Lastly, male monkeys, like men, are bolder and fiercer than the females. They lead the troop, and when there is danger, come to the front. We thus see how close is the parallelism between the sexual differences of man and the Quadrumana. With some few species, however, as with certain baboons, the orang and the gorilla, there is a considerably greater difference between the sexes, as in the size of the canine teeth, in the development and colour of the hair, and especially in the colour of the naked parts of the skin, than in mankind.

** This is the case with the females of several species of Hylobates; see Geoffroy St-Hilaire and F. Cuvier, Hist. Nat. des Mamm., tom. i. See also, on H. lar., Penny Cyclopedia, vol. ii., pp. 149, 150.*

All the secondary sexual characters of man are highly variable, even within the limits of the same race; and they differ much in the several races. These two rules hold good generally throughout the animal kingdom. In the excellent observations made on board the Novara,* the male Australians were found to exceed the females by only 65 millim. in height, whilst with the Javans the average excess was 218 millim.; so that in this latter race the difference in height between the

sexes is more than thrice as great as with the Australians. Numerous measurements were carefully made of the stature, the circumference of the neck and chest, the length of the back-bone and of the arms, in various races; and nearly all these measurements shew that the males differ much more from one another than do the females. This fact indicates that, as far as these characters are concerned, it is the male which has been chiefly modified, since the several races diverged from their common stock.

** The results were deduced by Dr. Weisbach from the measurements made by Drs. K. Scherzer and Schwarz, see Reise der Novara: Anthropolog. Theil, 1867, ss. 216, 231, 234, 236, 239, 269.*

The development of the beard and the hairiness of the body differ remarkably in the men of distinct races, and even in different tribes or families of the same race. We Europeans see this amongst ourselves. In the Island of St. Kilda, according to Martin,* the men do not acquire beards until the age of thirty or upwards, and even then the beards are very thin. On the Europaeo-Asiatic continent, beards prevail until we pass beyond India; though with the natives of Ceylon they are often absent, as was noticed in ancient times by Diodorus.*(2) Eastward of India beards disappear, as with the Siamese, Malays, Kalmucks, Chinese, and Japanese; nevertheless, the Ainos,* (3) who inhabit the northernmost islands of the Japan Archipelago, are the hairiest men in the world. With negroes the beard is scanty or wanting, and they rarely have whiskers; in both sexes the body is frequently almost destitute of fine down.*(4) On the other hand, the Papuans of the Malay Archipelago, who are nearly as black as negroes, possess well-developed beards.*(5) In the Pacific Ocean the inhabitants of the Fiji Archipelago have large bushy beards, whilst those of the not distant archipelagoes of Tonga and Samoa are beardless; but these men belong to distinct races. In the Ellice group all the inhabitants belong to the same race; yet on one island alone, namely Nunemaya, "the men have splendid beards"; whilst on the other islands "they have, as a rule, a

dozen straggling hairs for a beard."*(6)

* *Voyage to St. Kilda* (3rd ed., 1753), p. 37.

*(2) *Sir J. E. Tennent, Ceylon, vol. ii., 1859, p. 107.*

*(3) *Quatrefages, Revue des Cours Scientifiques, Aug. 29, 1868, p. 630; Vogt, Lectures on Man, Eng. trans., p. 127.*

*(4) *On the beards of negroes, Vogt, Lectures, &c., p. 127; Waitz, Introduct. to Anthropology, Engl. transl., 1863, vol. i., p. 96.*

It is remarkable that in the United States (Investigations in Military and Anthropological Statistics of American Soldiers, 1869, p. 569) the pure negroes and their crossed offspring seem to have bodies almost as hairy as Europeans.

*(5) *Wallace, The Malay Arch., vol. ii., 1869, p. 178.*

*(6) *Dr. J. Barnard Davis on Oceanic Races, in Anthropological Review, April, 1870, pp. 185, 191.*

Throughout the great American continent the men may be said to be beardless; but in almost all the tribes a few short hairs are apt to appear on the face, especially in old age. With the tribes of North America, Catlin estimates that eighteen out of twenty men are completely destitute by nature of a beard; but occasionally there may be seen a man, who has neglected to pluck out the hairs at puberty, with a soft beard an inch or two in length. The Guaranyes of Paraguay differ from all the surrounding tribes in having a small beard, and even some hair on the body, but no whiskers.* I am informed by Mr. D. Forbes, who particularly attended to this point, that the Aymaras and Quechuas of the Cordillera are remarkably hairless, yet in old age a few straggling hairs occasionally appear on the chin. The men of these two tribes have very little hair on the various parts of the body where hair grows abundantly in Europeans, and the women have none on the corresponding parts. The hair on the head, however, attains an extraordinary length in both sexes, often reaching almost to the ground; and this is

likewise the case with some of the N. American tribes. In the amount of hair, and in the general shape of the body, the sexes of the American aborigines do not differ so much from each other, as in most other races.*⁽²⁾ This fact is analogous with what occurs with some closely allied monkeys; thus the sexes of the chimpanzee are not as different as those of the orang or gorilla.*⁽³⁾

* *Catlin, North American Indians, 3rd. ed., 1842, vol. ii., p. 227. On the Guaranyes, see Azara, Voyages dans l'Amerique Merid., tom. ii., 1809, p. 85; also Rengger, Saugethiere von Paraguay, s. 3.*

*⁽²⁾ *Prof. and Mrs. Agassiz (Journey in Brazil, p. 530) remark that the sexes of the American Indians differ less than those of the negroes and of the higher races. See also Rengger, ibid., p. 3, on the Guaranyes.*

*⁽³⁾ *Rutimeyer, Die Grenzen der Thierwelt; eine Betrachtung zu Darwin's Lehre, 1868, s. 54.*

In the previous chapters we have seen that with mammals, birds, fishes, insects, &c., many characters, which there is every reason to believe were primarily gained through sexual selection by one sex, have been transferred to the other. As this same form of transmission has apparently prevailed much with mankind, it will save useless repetition if we discuss the origin of characters peculiar to the male sex together with certain other characters common to both sexes.

Law of Battle.- With savages, for instance, the Australians, the women are the constant cause of war both between members of the same tribe and between distinct tribes. So no doubt it was in ancient times; "nam fuit ante Helenam mulier terribilis belli causa." With some of the North American Indians, the contest is reduced to a system. That excellent observer, Hearne,* says:- "It has ever been the custom among these people for the men to wrestle for any woman to whom they are attached; and, of course, the strongest party always carries off the prize. A

weak man, unless he be a good hunter, and well-beloved, is seldom permitted to keep a wife that a stronger man thinks worth his notice. This custom prevails throughout all the tribes, and causes a great spirit of emulation among their youth, who are upon all occasions, from their childhood, trying their strength and skill in wrestling." With the Guanans of South America, Azara states that the men rarely marry till twenty years old or more, as before that age they cannot conquer their rivals.

* *A Journey from Prince of Wales Fort, 8vo ed., Dublin, 1796, p. 104.* Sir J. Lubbock (*Origin of Civilisation, 1870, p. 69*) gives other and similar cases in North America. For the Guanans of South America see Azara, *Voyages, &c., tom. ii., p. 94.*

Other similar facts could be given; but even if we had no evidence on this head, we might feel almost sure, from the analogy of the higher Quadrumana,* that the law of battle had prevailed with man during the early stages of his development. The occasional appearance at the present day of canine teeth which project above the others, with traces of diastema or open space for the reception of the opposite canines, is in all probability a case of reversion to a former state, when the progenitors of man were provided with these weapons, like so many existing male Quadrumana. It was remarked in a former chapter that as man gradually became erect, and continually used his hands and arms for fighting with sticks and stones, as well as for the other purposes of life, he would have used his jaws and teeth less and less. The jaws, together with their muscles, would then have been reduced through disuse, as would the teeth through the not well understood principles of correlation and economy of growth; for we everywhere see that parts, which are no longer of service, are reduced in size. By such steps the original inequality between the jaws and teeth in the two sexes of mankind would ultimately have been obliterated. The case is almost parallel with that of many male ruminants, in which the canine teeth have been reduced to mere rudiments,

or have disappeared, apparently in consequence of the development of horns. As the prodigious difference between the skulls of the two sexes in the orang and gorilla stands in close relation with the development of the immense canine teeth in the males, we may infer that the reduction of the jaws and teeth in the early male progenitors of man must have led to a most striking and favourable change in his appearance.

** On the fighting of the male gorillas, see Dr. Savage, in Boston Journal of Natural History, vol. v., 1847, p. 423. On Presbytis entellus, see the Indian Field, 1859, p. 146.*

There can be little doubt that the greater size and strength of man, in comparison with woman, together with his broader shoulders, more developed muscles, rugged outline of body, his greater courage and pugnacity, are all due in chief part to inheritance from his half-human male ancestors. These characters would, however, have been preserved or even augmented during the long ages of man's savagery, by the success of the strongest and boldest men, both in the general struggle for life and in their contests for wives; a success which would have ensured their leaving a more numerous progeny than their less favoured brethren. It is not probable that the greater strength of man was primarily acquired through the inherited effects of his having worked harder than woman for his own subsistence and that of his family; for the women in all barbarous nations are compelled to work at least as hard as the men. With civilised people the arbitrament of battle for the possession of the women has long ceased; on the other hand, the men, as a general rule, have to work harder than the women for their joint subsistence, and thus their greater strength will have been kept up.

Difference in the Mental Powers of the two Sexes.- With respect to differences of this nature between man and woman, it is probable that sexual selection has played a highly important part. I am aware that some writers doubt whether there is

any such inherent difference; but this is at least probable from the analogy of the lower animals which present other secondary sexual characters. No one disputes that the bull differs in disposition from the cow, the wild-boar from the sow, the stallion from the mare, and, as is well known to the keepers of menageries, the males of the larger apes from the females. Woman seems to differ from man in mental disposition, chiefly in her greater tenderness and less selfishness; and this holds good even with savages, as shewn by a well-known passage in Mungo Park's Travels, and by statements made by many other travellers. Woman, owing to her maternal instincts, displays these qualities towards her infants in an eminent degree; therefore it is likely that she would often extend them towards her fellow-creatures. Man is the rival of other men; he delights in competition, and this leads to ambition which passes too easily into selfishness. These latter qualities seem to be his natural and unfortunate birthright. It is generally admitted that with woman the powers of intuition, of rapid perception, and perhaps of imitation, are more strongly marked than in man; but some, at least, of these faculties are characteristic of the lower races, and therefore of a past and lower state of civilisation.

The chief distinction in the intellectual powers of the two sexes is shewn by man's attaining to a higher eminence, in whatever he takes up, than can woman—whether requiring deep thought, reason, or imagination, or merely the use of the senses and hands. If two lists were made of the most eminent men and women in poetry, painting, sculpture, music (inclusive both of composition and performance), history, science, and philosophy, with half-a-dozen names under each subject, the two lists would not bear comparison. We may also infer, from the law of the deviation from averages, so well illustrated by Mr. Galton, in his work on Hereditary Genius, that if men are capable of a decided pre-eminence over women in many subjects, the average of mental power in man must be above that of woman.

Amongst the half-human progenitors of man, and amongst savages, there have been struggles between the males during many generations for the possession of the females. But mere bodily strength and size would do little for victory, unless

associated with courage, perseverance, and determined energy. With social animals, the young males have to pass through many a contest before they win a female, and the older males have to retain their females by renewed battles. They have, also, in the case of mankind, to defend their females, as well as their young, from enemies of all kinds, and to hunt for their joint subsistence. But to avoid enemies or to attack them with success, to capture wild animals, and to fashion weapons, requires the aid of the higher mental faculties, namely, observation, reason, invention, or imagination. These various faculties will thus have been continually put to the test and selected during manhood; they will, moreover, have been strengthened by use during this same period of life. Consequently in accordance with the principle often alluded to, we might expect that they would at least tend to be transmitted chiefly to the male offspring at the corresponding period of manhood.

Now, when two men are put into competition, or a man with a woman, both possessed of every mental quality in equal perfection, save that one has higher energy, perseverance, and courage, the latter will generally become more eminent in every pursuit, and will gain the ascendancy.* He may be said to possess genius- for genius has been declared by a great authority to be patience; and patience, in this sense, means unflinching, undaunted perseverance. But this view of genius is perhaps deficient; for without the higher powers of the imagination and reason, no eminent success can be gained in many subjects. These latter faculties, as well as the former, will have been developed in man, partly through sexual selection,- that is, through the contest of rival males, and partly through natural selection, that is, from success in the general struggle for life; and as in both cases the struggle will have been during maturity, the characters gained will have been transmitted more fully to the male than to the female offspring. It accords in a striking manner with this view of the modification and re-inforcement of many of our mental faculties by sexual selection, that, firstly, they notoriously undergo a considerable change at puberty,*⁽²⁾ and, secondly, that eunuchs remain throughout life inferior in these same qualities. Thus, man has ultimately become superior to woman. It is, indeed,

fortunate that the law of the equal transmission of characters to both sexes prevails with mammals; otherwise, it is probable that man would have become as superior in mental endowment to woman, as the peacock is in ornamental plumage to the peahen.

* *J. Stuart Mill remarks (The Subjection of Women, 1869, p. 122), "The things in which man most excels woman are those which require most plodding, and long hammering at single thoughts." What is this but energy and perseverance?*

*⁽²⁾ *Maudsley, Mind and Body, p. 31.*

It must be borne in mind that the tendency in characters acquired by either sex late in life, to be transmitted to the same sex at the same age, and of early acquired characters to be transmitted to both sexes, are rules which, though general, do not always hold. If they always held good, we might conclude (but I here exceed my proper bounds) that the inherited effects of the early education of boys and girls would be transmitted equally to both sexes; so that the present inequality in mental power between the sexes would not be effaced by a similar course of early training; nor can it have been caused by their dissimilar early training. In order that woman should reach the same standard as man, she ought, when nearly adult, to be trained to energy and perseverance, and to have her reason and imagination exercised to the highest point; and then she would probably transmit these qualities chiefly to her adult daughters. All women, however, could not be thus raised, unless during many generations those who excelled in the above robust virtues were married, and produced offspring in larger numbers than other women. As before remarked of bodily strength, although men do not now fight for their wives, and this form of selection has passed away, yet during manhood, they generally undergo a severe struggle in order to maintain themselves and their families; and this will tend to keep up or even increase their mental powers, and, as a consequence, the present inequality between the

sexes.*

** An observation by Vogt bears on this subject: he says, "It is a remarkable circumstance, that the difference between the sexes, as regards the cranial cavity, increases with the development of the race, so that the male European excels much more the female, than the negro the negress. Welcker confirms this statement of Huschke from his measurements of negro and German skulls." But Vogt admits (Lectures on Man, Eng. transl., 1864, p. 81) that more observations are requisite on this point.*

Voice and Musical Powers.- In some species of Quadrumana there is a great difference between the adult sexes, in the power of their voices and in the development of the vocal organs; and man appears to have inherited this difference from his early progenitors. His vocal cords are about one-third longer than in woman, or than in boys; and emasculation produces the same effect on him as on the lower animals, for it "arrests that prominent growth of the thyroid, &c., which accompanies the elongation of the cords."* With respect to the cause of this difference between the sexes, I have nothing to add to the remarks in the last chapter on the probable effects of the long-continued use of the vocal organs by the male under the excitement of love, rage and jealousy. According to Sir Duncan Gibb,*⁽²⁾ the voice and the form of the larynx differ in the different races of mankind; but with the Tartars, Chinese, &c., the voice of the male is said not to differ so much from that of the female, as in most other races.

** Owen, Anatomy of Vertebrates, vol. iii., p. 603.*

**⁽²⁾ Journal of the Anthropological Society, April, 1869, pp. lvii. and lxvi.*

The capacity and love for singing or music, though not a sexual character in man,

must not here be passed over. Although the sounds emitted by animals of all kinds serve many purposes, a strong case can be made out, that the vocal organs were primarily used and perfected in relation to the propagation of the species. Insects and some few spiders are the lowest animals which voluntarily produce any sound; and this is generally effected by the aid of beautifully constructed stridulating organs, which are often confined to the males. The sounds thus produced consist, I believe in all cases, of the same note, repeated rhythmically;* and this is sometimes pleasing even to the ears of man. The chief and, in some cases, exclusive purpose appears to be either to call or charm the opposite sex.

* *Dr. Scudder, "Notes on Stridulation," in Proc. Boston Soc. of Nat. Hist., vol. xi., April, 1868.*

The sounds produced by fishes are said in some cases to be made only by the males during the breeding-season. All the air-breathing Vertebrata, necessarily possess an apparatus for inhaling and expelling air, with a pipe capable of being closed at one end. Hence when the primeval members of this class were strongly excited and their muscles violently contracted, purposeless sounds would almost certainly have been produced; and these, if they proved in any way serviceable, might readily have been modified or intensified by the preservation of properly adapted variations. The lowest vertebrates which breathe air are amphibians; and of these, frogs and toads possess vocal organs, which are incessantly used during the breeding-season, and which are often more highly developed in the male than in the female. The male alone of the tortoise utters a noise, and this only during the season of love. Male alligators roar or bellow during the same season. Every one knows how much birds use their vocal organs as a means of courtship; and some species likewise perform what may be called instrumental music.

In the class of mammals, with which we are here more particularly concerned, the males of almost all the species use their voices during the breeding-season much more than at any other time; and some are absolutely mute excepting at this