

**The Descent of Man  
&  
Selection in Relation  
To Sex  
Volume III**

**By  
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***Free*editorial** 

# The Descent of Man and Selection in Relation to Sex

## Vol.III

### SEXUAL SELECTION IN RELATION TO MAN AND CONCLUSION

#### CHAPTER XIX

##### SECONDARY SEXUAL CHARACTERS OF MAN

Differences between man and woman Causes of such differences and of certain characters common to both sexes Law of battle Differences in mental powers and voice On the influence of beauty in determining the marriages of mankind Attention paid by savages to ornaments Their ideas of beauty in woman The tendency to exaggerate each natural peculiarity

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 ( Schaaffhausen translation in 'Anthropological Review' Oct ) 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 halfroasted coffee" ( 'The Heart of Africa' English transl vol i ) 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

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 ( Ecker translation in 'Anthropological Review' Oct p The comparison of the form of the skull in men and women has been followed out with much care by Welcker) 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

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 ( Ecker and Welcker *ibid* Vogt 'Lectures on Man' Eng transl ) 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 racial differences cannot be detected in the infantile skull ( Schaaffhausen 'Anthropolog Review' *ibid* ) In regard to colour the newborn negro child is reddish nutbrown which soon becomes slatygrey 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 chestnutbrown rather than black being curled only at the ends The children of the Australians immediately after birth are yellowishbrown and become dark at a later age Those of the Guarany of Paraguay are whitishyellow but they acquire in the course of a few weeks the yellowishbrown tint of their parents Similar observations have been made in other parts of America ( PrunerBey on negro infants as quoted by Vogt 'Lectures on Man' Eng transl : for further facts on negro infants as quoted from Winterbottom and Camper see Lawrence 'Lectures on Physiology' etc For the infants of the Guarany see Rengger 'Säugethiere' etc s See also Godron 'De l'Espèce' tom ii For the Australians Waitz 'Introduction to Anthropology' Eng transl )

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* ( Rengger 'Säugethiere' etc s ) 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 ( As in *Macacus cynomolgus* (Desmarest 'Mammalogie' ) and in *Hylobates agilis* (Geoffroy StHilaire and F Cuvier 'Histoire Nat des Mammifères' tom i )) 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 ( 'Anthropological Review' Oct ) 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 Quadrumana 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 Bhotias 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 ( Mr Blyth informs me that he has only seen one instance of the beard whiskers etc 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 humanlike" 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 Quichuas 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 ( 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 Harlar 'Penny Cyclopaedia' vol ii ) 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

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 results were deduced by Dr Weisbach from the measurements made by Drs K Scherzer and Schwarz see 'Reise der *Novara*: Anthropolog Theil' ss ) the male Australians were found to exceed the females by only millim in height whilst with the Javans the average excess was 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 backbone 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 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 ('Voyage to St Kilda' (rd ed ) the men do not acquire beards until the age of thirty or upwards and even then the beards are very thin. On the EuropaeoAsiatic 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 ( Sir JE Tennent 'Ceylon' vol ii ) Eastward of India beards disappear as with the Siamese Malays Kalmucks Chinese and Japanese nevertheless the Ainos ( Quatrefages 'Revue des Cours Scientifiques' Aug Vogt 'Lectures on Man' Eng trans ) 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 ( On the beards of negroes Vogt 'Lectures' etc Waitz 'Introduct to Anthropology' Engl transl vol i ). It is remarkable that in the United States ('Investigations in Military and Anthropological Statistics of American Soldiers' ) the pure negroes and their crossed offspring seem to have bodies almost as hairy as Europeans. On the other hand the Papuans of the Malay Archipelago who are nearly as black as negroes possess welldeveloped beards ( Wallace 'The Malay Arch' vol ii ). 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" ( Dr J Barnard Davis on Oceanic Races in 'Anthropological Review' April )

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 Guaranys of Paraguay differ from all the surrounding tribes in having a small beard and even some hair on the body but no whiskers ( Catlin 'North American Indians' rd ed vol ii On the Guaranys see Azara 'Voyages dans l'Amérique Merid' tom ii also Rengger 'Säugethiere von Paraguay' s ) I am informed by Mr D Forbes who particularly attended to this point that the Aymaras and Quichuas 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 ( Prof and Mrs Agassiz ('Journey in Brazil' ) remark that the sexes of the American Indians differ less than those of the negroes and of the higher races See also Rengger ibid on the Guaranys) 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 ( Rutimeyer 'Die Grenzen der Thierwelt eine Betrachtung zu Darwin's Lehre' s )

In the previous chapters we have seen that with mammals birds fishes insects etc 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 teterrima belli causa" With some of the North American Indians the contest is reduced to a system That excellent observer Hearne ( 'A Journey from Prince of Wales Fort' vo ed Dublin Sir J Lubbock ('Origin of Civilisation' ) gives other and similar cases in North America For the Guanans of South

America see Azara 'Voyages' etc tom ii ) 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 wellbeloved 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

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 ( On the hting of the male gorillas see Dr Savage in 'Boston Journal of Natural History' vol v On Presbytis entellus see the 'Indian Field' ) 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 a 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 hting 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

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 halfhuman 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 wildboar 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 wellknown 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 fellowcreatures 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 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 halfadozen 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 preeminence over women in many subjects the average of mental power in man must be above that of woman

Amongst the halfhuman 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 ( J Stuart Mill remarks ('The Subjection of Women' ) "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?) 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 reinforcement of many of our mental faculties by sexual selection that firstly they notoriously undergo a considerable change at puberty ( Maudsley 'Mind and Body' ) 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

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 ht 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 translat ) 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 onethird 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 etc which accompanies the elongation of the cords" ( Owen 'Anatomy of Vertebrates' vol iii ) 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 longcontinued use of the vocal organs by the male under the excitement of love rage and jealousy According to Sir Duncan Gibb ( 'Journal of the Anthropological Society' April lvii and lxvi) the voice and the form of the larynx differ in the different races of mankind but with the Tartars Chinese etc the voice of the male is said not to differ so much from that of the female as in most other races

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 ( Dr Scudder 'Notes on Stridulation' in 'Proc Boston Soc of Nat Hist' vol xi April ) 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

The sounds produced by fishes are said in some cases to be made only by the males during the breedingseason All the airbreathing 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 breedingseason much more than at any other time and some are absolutely mute excepting at this season With other species both sexes or only the females use their voices as a lovecall Considering these facts and that the vocal organs of some quadrupeds are much more largely developed in the male than in the female either permanently or temporarily during the breedingseason and considering that in most of the lower classes the sounds produced by the males serve not only to call but to excite or allure the female it is a surprising fact that we have not as yet any good evidence that these organs are used by male mammals to charm the females The American *Myctes caraya* perhaps forms an exception as does the *Hylobates agilis* an ape allied to man This gibbon has an extremely loud but musical voice Mr Waterhouse states ( Given in WCL Martin's 'General Introduction to Natural History of Mamm Animals' Owen 'Anatomy of Vertebrates' vol iii ) "It appeared to me that in ascending and descending the scale the intervals were always exactly halftones and I am sure that the highest note was the exact octave to the lowest The quality of the notes is very musical and I do not doubt that a good violinist would be able to give a correct idea of the gibbon's composition excepting as regards its loudness" Mr Waterhouse then gives the notes Professor Owen who is a musician confirms the foregoing statement and remarks though erroneously that this gibbon "alone of brute mammals may be said to sing" It appears to be much excited after its performance Unfortunately its habits have never been closely observed in a state of nature but from the analogy of other animals it is probable that it uses its musical powers more especially during the season of courtship

This gibbon is not the only species in the genus which sings for my son Francis Darwin attentively listened in the Zoological Gardens to *H. leuciscus* whilst singing a cadence of three notes in true musical intervals and with a clear musical tone It is a more surprising fact that certain rodents utter musical sounds Singing mice have often been mentioned and exhibited but imposture has commonly been suspected We have however at last a clear account by a wellknown observer the Rev S Lockwood ( The 'American Naturalist' ) of the musical powers of an American species the *Hesperomys cognatus* belonging to a genus distinct from that of the English mouse This little animal was kept in confinement and the performance was repeatedly heard In one of the two chief songs "the last bar would frequently be prolonged to two or three and she would sometimes change from C sharp and D to C natural and D then warble on these two notes awhile and wind up with a quick chirp on C sharp and D The distinctness between the semitones was very marked and easily appreciable to a good ear" Mr Lockwood gives both songs in musical notation and adds that though this little mouse "had no ear for time yet she would keep to the key of B (two flats) and strictly in a major key""Her soft clear voice falls an octave with all the precision possible then at the wind uit rises again into a very quick trill on C sharp and D"

A critic has asked how the ears of man and he ought to have added of other animals could have been adapted by selection so as to distinguish musical notes But this question shews some confusion on the subject a noise is the sensation resulting from the coexistence of several aerial "simple vibrations" of various periods each of which intermits so frequently that its separate existence cannot be perceived It is only in the want of continuity of such vibrations and in their want of harmony inter se that a noise differs from a musical note Thus an ear to be capable of discriminating noisesand the high importance of this power to all animals is admitted by every onemust be sensitive to musical notes We have evidence of this capacity even low down in the animal scale: thus Crustaceans are provided with auditory hairs of different lengths which have been seen to vibrate when the proper musical notes are struck ( Helmholtz 'Theorie Phys de la Musique' ) As stated in a previous chapter similar observations have been made on the hairs of the antennae of gnats It has been positively asserted by good observers that spiders are attracted by music It is also well known that some dogs howl when hearing particular tones ( Several accounts have been published to this effect Mr Peach writes to me that an old dog of his howls when B flat is sounded on the flute and to no other note I may add another instance of a dog always whining when one note on a concertina which was out of tune was played) Seals apparently appreciate music and their fondness for it "was well known to the ancients and is often taken advantage of by the hunters at the present day" ( Mr R Brown in 'Proc Zool Soc' )

Therefore as far as the mere perception of musical notes is concerned there seems no special difficulty in the case of man or of any other animal Helmholtz has explained on physiological principles why concords are agreeable and discords disagreeable to the human ear but we are little concerned with these as music in harmony is a late invention We are more concerned with melody and here again according to Helmholtz it is intelligible why the notes of our musical scale are used The ear analyses all sounds into their component "simple vibrations" although we are not conscious of this analysis In a musical note the lowest in pitch of these is generally predominant and the others which are less marked are the octave the twelfth the second octave etc all harmonies of the fundamental predominant note any two notes of our scale have many of these harmonic overtones in common It seems pretty clear then that if an animal always wished to sing precisely the same song he would guide himself by sounding those notes in succession which possess many over tones in common that is he would choose for his song notes which belong to our musical scale

But if it be further asked why musical tones in a certain order and rhythm give man and other animals pleasure we can no more give the reason than for the pleasantness of certain tastes and smells That they do give pleasure of some kind to animals we may infer from their being produced during the season of courtship by many insects spiders fishes amphibians and birds for unless the females were able to appreciate such sounds and were excited or charmed by them the persevering efforts of the males and the complex structures often possessed by them alone would be useless and this it is impossible to believe

Human song is generally admitted to be the basis or origin of instrumental music As neither the enjoyment nor the capacity of producing musical notes are faculties of the least use to man in reference to his daily habits of life they must be ranked amongst the most mysterious with which he is endowed They are present though in a very rude condition in men of all races even the most savage but so different is the taste of the several races that our music gives no pleasure to savages and their music is to us in most cases hideous and unmeaning Dr Seemann in some interesting remarks on this subject ( 'Journal of Anthropological Society' Oct clv See also the several later chapters in Sir John Lubbock's 'Prehistoric Times' nd ed which contain an admirable account of the habits of savages) "doubts whether even amongst the nations of Western Europe intimately connected as they are by close and frequent intercourse the music of the one is interpreted in the same sense by the others By travelling eastwards we find that there is certainly a different language of music Songs of joy and dance accompaniments are no longer as with us in the major keys but always in the minor" Whether or not the halfhuman progenitors of man possessed like the singing gibbons the capacity of producing and therefore no doubt of appreciating musical notes we know that man possessed these faculties at a very remote period M Lartet has described two flutes made

out of the bones and horns of the reindeer found in caves together with flint tools and the remains of extinct animals The arts of singing and of dancing are also very ancient and are now practised by all or nearly all the lowest races of man Poetry which may be considered as the offspring of song is likewise so ancient that many persons have felt astonished that it should have arisen during the earliest ages of which we have any record

We see that the musical faculties which are not wholly deficient in any race are capable of prompt and high development for Hottentots and Negroes have become excellent musicians although in their native countries they rarely practise anything that we should consider music Schweinfurth however was pleased with some of the simple melodies which he heard in the interior of Africa But there is nothing anomalous in the musical faculties lying dormant in man: some species of birds which never naturally sing can without much difficulty be taught to do so thus a housesparrow has learnt the song of a linnet As these two species are closely allied and belong to the order of Insectores which includes nearly all the singingbirds in the world it is possible that a progenitor of the sparrow may have been a songster It is more remarkable that parrots belonging to a group distinct from the Insectores and having differently constructed vocal organs can be taught not only to speak but to pipe or whistle tunes invented by man so that they must have some musical capacity Nevertheless it would be very rash to assume that parrots are descended from some ancient form which was a songster Many cases could be advanced of organs and instincts originally adapted for one purpose having been utilised for some distinct purpose ( Since this chapter was printed I have seen a valuable article by Mr Chauncey Wright ('North American Review' Oct page ) who in discussing the above subject remarks "There are many consequences of the ultimate laws or uniformities of nature through which the acquisition of one useful power will bring with it many resulting advantages as well as limiting disadvantages actual or possible which the principle of utility may not have comprehended in its action" As I have attempted to shew in an early chapter of this work this principle has an important bearing on the acquisition by man of some of his mental characteristics) Hence the capacity for high musical development which the savage races of man possess may be due either to the practice by our semihuman progenitors of some rude form of music or simply to their having acquired the proper vocal organs for a different purpose But in this latter case we must assume as in the above instance of parrots and as seems to occur with many animals that they already possessed some sense of melody

Music arouses in us various emotions but not the more terrible ones of horror fear rage etc It awakens the gentler feelings of tenderness and love which readily pass into devotion In the Chinese annals it is said "Music hath the power of making heaven descend upon earth" It likewise stirs up in us the sense of triumph and the glorious ardour for war These powerful and mingled feelings may well give rise to the sense of

sublimity We can concentrate as Dr Seemann observes greater intensity of feeling in a single musical note than in pages of writing It is probable that nearly the same emotions but much weaker and far less complex are felt by birds when the male pours forth his full volume of song in rivalry with other males to captivate the female Love is still the commonest theme of our songs As Herbert Spencer remarks "music arouses dormant sentiments of which we had not conceived the possibility and do not know the meaning or as Richter says tells us of things we have not seen and shall not see" Conversely when vivid emotions are felt and expressed by the orator or even in common speech musical cadences and rhythm are instinctively used The negro in Africa when excited often bursts forth in song "another will reply in song whilst the company as if touched by a musical wave murmur a chorus in perfect unison" ( Winwood Reade 'The Martyrdom of Man' and 'African Sketch Book' vol ii ) Even monkeys express strong feelings in different tones anger and impatience by low fear and pain by high notes ( Rengger 'Säugethiere von Paraguay' s ) The sensations and ideas thus excited in us by music or expressed by the cadences of oratory appear from their vagueness yet depth like mental reverions to the emotions and thoughts of a longpast age

All these facts with respect to music and impassioned speech become intelligible to a certain extent if we may assume that musical tones and rhythm were used by our halfhuman ancestors during the season of courtship when animals of all kinds are excited not only by love but by the strong passions of jealousy rivalry and triumph From the deeply laid principle of inherited associations musical tones in this case would be likely to call up vaguely and indefinitely the strong emotions of a longpast age As we have every reason to suppose that articulate speech is one of the latest as it certainly is the highest of the arts acquired by man and as the instinctive power of producing musical notes and rhythms is developed low down in the animal series it would be altogether opposed to the principle of evolution if we were to admit that man's musical capacity has been developed from the tones used in impassioned speech We must suppose that the rhythms and cadences of oratory are derived from previously developed musical powers ( See the very interesting discussion on the 'Origin and Function of Music' by Mr Herbert Spencer in his collected 'Essays' Mr Spencer comes to an exactly opposite conclusion to that at which I have arrived He concludes as did Diderot formerly that the cadences used in emotional speech afford the foundation from which music has been developed whilst I conclude that musical notes and rhythm were first acquired by the male or female progenitors of mankind for the sake of charming the opposite sex Thus musical tones became firmly associated with some of the strongest passions an animal is capable of feeling and are consequently used instinctively or through association when strong emotions are expressed in speech Mr Spencer does not offer any satisfactory explanation nor can I why high or deep notes should be expressive both with man and the lower animals of certain emotions Mr Spencer gives also an interesting discussion on the relations between poetry recitative and song) We can thus understand how it is

that music dancing song and poetry are such very ancient arts We may go even further than this and as remarked in a former chapter believe that musical sounds afforded one of the bases for the development of language ( I find in Lord Monboddo's 'Origin of Language' vol i that Dr Blacklock likewise thought "that the first language among men was music and that before our ideas were expressed by articulate sounds they were communicated by tones varied according to different degrees of gravity and acuteness")

As the males of several quadrumanous animals have their vocal organs much more developed than in the females and as a gibbon one of the anthropomorphous apes pours forth a whole octave of musical notes and may be said to sing it appears probable that the progenitors of man either the males or females or both sexes before acquiring the power of expressing their mutual love in articulate language endeavoured to charm each other with musical notes and rhythm So little is known about the use of the voice by the Quadrumana during the season of love that we have no means of judging whether the habit of singing was first acquired by our male or female ancestors Women are generally thought to possess sweeter voices than men and as far as this serves as any guide we may infer that they first acquired musical powers in order to attract the other sex ( See an interesting discussion on this subject by Haeckel 'Generelle Morphologie' B ii s ) But if so this must have occurred long ago before our ancestors had become sufficiently human to treat and value their women merely as useful slaves The impassioned orator bard or musician when with his varied tones and cadences he excites the strongest emotions in his hearers little suspects that he uses the same means by which his halfhuman ancestors long ago aroused each other's ardent passions during their courtship and rivalry

### **THE INFLUENCE OF BEAUTY IN DETERMINING THE MARRIAGES OF MANKIND**

In civilised life man is largely but by no means exclusively influenced in the choice of his wife by external appearance but we are chiefly concerned with primeval times and our only means of forming a judgment on this subject is to study the habits of existing semicivilised and savage nations If it can be shewn that the men of different races prefer women having various characteristics or conversely with the women we have then to enquire whether such choice continued during many generations would produce any sensible effect on the race either on one sex or both according to the form of inheritance which has prevailed

It will be well first to shew in some detail that savages pay the greatest attention to their personal appearance ( A full and excellent account of the manner in which savages in all parts of the world ornament themselves is given by the Italian traveller Professor Mantegazza 'Rio de la Plata Viaggi e Studi' p all the following statements when other



references are not given are taken from this work See also Waitz 'Introduction to Anthropology' Eng transl vol i et passim Lawrence also gives very full details in his 'Lectures on Physiology' Since this chapter was written Sir J Lubbock has published his 'Origin of Civilisation' in which there is an interesting chapter on the present subject and from which ( ) I have taken some facts about savages dyeing their teeth and hair and piercing their teeth) That they have a passion for ornament is notorious and an English philosopher goes so far as to maintain that clothes were first made for ornament and not for warmth As Professor Waitz remarks "however poor and miserable man is he finds a pleasure in adorning himself" The extravagance of the naked Indians of South America in decorating themselves is shewn "by a man of large stature gaining with difficulty enough by the labour of a fortnight to procure in exchange the chica necessary to paint himself red" ( Humboldt 'Personal Narrative' Eng transl vol iv on the imagination shewn in painting the body on modifying the form of the calf of the leg ) The ancient barbarians of Europe during the Reindeer period brought to their caves any brilliant or singular objects which they happened to find Savages at the present day everywhere deck themselves with plumes necklaces armlets earrings etc They paint themselves in the most diversified manner "If painted nations" as Humboldt observes "had been examined with the same attention as clothed nations it would have been perceived that the most fertile imagination and the most mutable caprice have created the fashions of painting as well as those of garments"

In one part of Africa the eyelids are coloured black in another the nails are coloured yellow or purple In many places the hair is dyed of various tints In different countries the teeth are stained black red blue etc and in the Malay Archipelago it is thought shameful to have white teeth "like those of a dog" Not one great country can be named from the polar regions in the north to New Zealand in the south in which the aborigines do not tattoo themselves This practice was followed by the Jews of old and by the ancient Britons In Africa some of the natives tattoo themselves but it is a much more common practice to raise protuberances by rubbing salt into incisions made in various parts of the body and these are considered by the inhabitants of Kordofan and Darfur "to be great personal attractions" In the Arab countries no beauty can be perfect until the cheeks "or temples have been gashed" ( 'The Nile Tributaries' 'The Albert N'yanza' vol i ) In South America as Humboldt remarks "a mother would be accused of culpable indifference towards her children if she did not employ artificial means to shape the calf of the leg after the fashion of the country" In the Old and New Worlds the shape of the skull was formerly modified during infancy in the most extraordinary manner as is still the case in many places and such deformities are considered ornamental For instance the savages of Colombia ( Quoted by Prichard 'Physical History of Mankind' th ed vol i ) deem a much flattened head "an essential point of beauty"

The hair is treated with especial care in various countries it is allowed to grow to full length so as to reach to the ground or is combed into "a compact frizzled mow which is the Papuan's pride and glory" ( On the Papuans Wallace 'The Malay Archipelago' vol ii On the coiffure of the Africans Sir S Baker 'The Albert N'yanza' vol i ) In northern Africa "a man requires a period of from eight to ten years to perfect his coiffure" With other nations the head is shaved and in parts of South America and Africa even the eyebrows and eyelashes are eradicated The natives of the Upper Nile knock out the four front teeth saying that they do not wish to resemble brutes Further south the Batokas knock out only the two upper incisors which as Livingstone ( 'Travels' ) remarks gives the face a hideous appearance owing to the prominence of the lower jaw but these people think the presence of the incisors most unsightly and on beholding some Europeans cried out "Look at the great teeth!" The chief Sebituani tried in vain to alter this fashion In various parts of Africa and in the Malay Archipelago the natives file the incisors into points like those of a saw or pierce them with holes into which they insert studs

As the face with us is chiefly admired for its beauty so with savages it is the chief seat of mutilation In all quarters of the world the septum and more rarely the wings of the nose are pierced rings sticks feathers and other ornaments being inserted into the holes The ears are everywhere pierced and similarly ornamented and with the Botocudos and Lenguas of South America the hole is gradually so much enlarged that the lower edge touches the shoulder In North and South America and in Africa either the upper or lower lip is pierced and with the Botocudos the hole in the lower lip is so large that a disc of wood four inches in diameter is placed in it Mantegazza gives a curious account of the shame felt by a South American native and of the ridicule which he excited when he sold his tembetathe large coloured piece of wood which is passed through the hole In Central Africa the women perforate the lower lip and wear a crystal which from the movement of the tongue has "a wriggling motion indescribably ludicrous during conversation" The wife of the chief of Latooka told Sir S Baker ( 'The Albert N'yanza' vol i ) that Lady Baker "would be much improved if she would extract her four front teeth from the lower jaw and wear the long pointed polished crystal in her under lip" Further south with the Makalolo the upper lip is perforated and a large metal and bamboo ring called a pelele is worn in the hole "This caused the lip in one case to project two inches beyond the tip of the nose and when the lady smiled the contraction of the muscles elevated it over the eyes 'Why do the women wear these things?' the venerable chief Chinsurdi was asked Evidently surprised at such a stupid question he replied 'For beauty! They are the only beautiful things women have men have beards women have none What kind of a person would she be without the pelele? She would not be a woman at all with a mouth like a man but no beard'" ( Livingstone 'British Association' report given in the 'Athenaeum' July )

Hardly any part of the body which can be unnaturally modified has escaped The amount of suffering thus caused must have been extreme for many of the operations require several years for their completion so that the idea of their necessity must be imperative The motives are various the men paint their bodies to make themselves appear terrible in battle certain mutilations are connected with religious rites or they mark the age of puberty or the rank of the man or they serve to distinguish the tribes Amongst savages the same fashions prevail for long periods ( Sir S Baker (ibid vol i ) speaking of the natives of Central Africa says "every tribe has a distinct and unchanging fashion for dressing the hair" See Agassiz ('Journey in Brazil' ) on invariability of the tattooing of Amazonian Indians) and thus mutilations from whatever cause first made soon come to be valued as distinctive marks But selfadornment vanity and the admiration of others seem to be the commonest motives In regard to tattooing I was told by the missionaries in New Zealand that when they tried to persuade some girls to give up the practice they answered "We must just have a few lines on our lips else when we grow old we shall be so very ugly" With the men of New Zealand a most capable judge ( Rev R Taylor 'New Zealand and its Inhabitants' ) says "to have fine tattooed faces was the great ambition of the young both to render themselves attractive to the ladies and conspicuous in war" A star tattooed on the forehead and a spot on the chin are thought by the women in one part of Africa to be irresistible attractions ( Mantegazza 'Viaggi e Studi' ) In most but not all parts of the world the men are more ornamented than the women and often in a different manner sometimes though rarely the women are hardly at all ornamented As the women are made by savages to perform the greatest share of the work and as they are not allowed to eat the best kinds of food so it accords with the characteristic selfishness of man that they should not be allowed to obtain or use the finest ornaments Lastly it is a remarkable fact as proved by the foregoing quotations that the same fashions in modifying the shape of the head in ornamenting the hair in painting tattooing in perforating the nose lips or ears in removing or filing the teeth etc now prevail and have long prevailed in the most distant quarters of the world It is extremely improbable that these practices followed by so many distinct nations should be due to tradition from any common source They indicate the close similarity of the mind of man to whatever race he may belong just as do the almost universal habits of dancing masquerading and making rude pictures

Having made these preliminary remarks on the admiration felt by savages for various ornaments and for deformities most unsightly in our eyes let us see how far the men are attracted by the appearance of their women and what are their ideas of beauty I have heard it maintained that savages are quite indifferent about the beauty of their women valuing them solely as slaves it may therefore be well to observe that this conclusion does not at all agree with the care which the women take in ornamenting themselves or with their vanity Burchell ( 'Travels in South Africa' vol i ) gives an amusing account of a Bushwoman who used as much grease red ochre and shining powder "as would have

ruined any but a very rich husband" She displayed also "much vanity and too evident a consciousness of her superiority" Mr Winwood Reade informs me that the negroes of the West Coast often discuss the beauty of their women Some competent observers have attributed the fearfully common practice of infanticide partly to the desire felt by the women to retain their good looks ( See for references Gerland 'Ueber das Aussterben der Naturvölker' ss also Azara 'Voyages' etc tom ii ) In several regions the women wear charms and use lovephilters to gain the affections of the men and Mr Brown enumerates four plants used for this purpose by the women of NorthWestern America ( On the vegetable productions used by the NorthWestern American Indians see 'Pharmaceutical Journal' vol x)

Hearne ( 'A Journey from Prince of Wales Fort' vo ed ) an excellent observer who lived many years with the American Indians says in speaking of the women "Ask a Northern Indian what is beauty and he will answer a broad flat face small eyes high cheekbones three or four broad black lines across each cheek a low forehead a large broad chin a clumsy hook nose a tawny hide and breasts hanging down to the belt" Pallas who visited the northern parts of the Chinese empire says "those women are preferred who have the Mandschu form that is to say a broad face high cheekbones very broad noses and enormous ears"( Quoted by Prichard 'Physical History of Mankind' rd ed vol iv Vogt 'Lectures on Man' Eng transl On the opinion of the Chinese on the Cingalese E Tennent 'Ceylon' vol ii ) and Vogt remarks that the obliquity of the eye which is proper to the Chinese and Japanese is exaggerated in their pictures for the purpose as it "seems of exhibiting its beauty as contrasted with the eye of the redhaired barbarians" It is well known as Huc repeatedly remarks that the Chinese of the interior think Europeans hideous with their white skins and prominent noses The nose is far from being too prominent according to our ideas in the natives of Ceylon yet "the Chinese in the seventh century accustomed to the flat features of the Mongol races were surprised at the prominent noses of the Cingalese and Thsang described them as having 'the beak of a bird with the body of a man'"

Finlayson after minutely describing the people of Cochin China says that their rounded heads and faces are their chief characteristics and he adds "the roundness of the whole countenance is more striking in the women who are reckoned beautiful in proportion as they display this form of face" The Siamese have small noses with divergent nostrils a wide mouth rather thick lips a remarkably large face with very high and broad cheekbones It is therefore not wonderful that "beauty according to our notion is a stranger to them Yet they consider their own females to be much more beautiful than those of Europe" ( Prichard as taken from Crawford and Finlayson 'Phys Hist of Mankind' vol iv )

It is well known that with many Hottentot women the posterior part of the body projects in a wonderful manner they are steatopygous and Sir Andrew Smith is certain that this peculiarity is greatly admired by the men ( Idem illustrissimus viator dixit mihi praecinctorium vel tabulam foeminae quod nobis teterrimum est quondam permagno aestimari ab hominibus in hac gente Nunc res mutata est et censent talem conformationem minime optandam esse) He once saw a woman who was considered a beauty and she was so immensely developed behind that when seated on level ground she could not rise and had to push herself along until she came to a slope Some of the women in various negro tribes have the same peculiarity and according to Burton the Somal men are said to choose their wives by ranging them in a line and by picking her out who projects farthest a tergo Nothing can be more hateful to a negro than the opposite form" ( The 'Anthropological Review' November For additional references see Waitz 'Introduction to Anthropology' Eng transl vol i )

With respect to colour the negroes rallied Mungo Park on the whiteness of his skin and the prominence of his nose both of which they considered as "unsightly and unnatural conformations" He in return praised the glossy jet of their skins and the lovely depression of their noses this they said was "honeymouth" nevertheless they gave him food The African Moors also "knitted their brows and seemed to shudder" at the whiteness of his skin On the eastern coast the negro boys when they saw Burton cried out "Look at the white man does he not look like a white ape?" On the western coast as Mr Winwood Reade informs me the negroes admire a very black skin more than one of a lighter tint But their horror of whiteness may be attributed according to this same traveller partly to the belief held by most negroes that demons and spirits are white and partly to their thinking it a sign of illhealth

The Banyai of the more southern part of the continent are negroes but "a great many of them are of a light coffeeandmilk colour and indeed this colour is considered handsome throughout the whole country" so that here we have a different standard of taste With the Kaffirs who differ much from negroes "the skin except among the tribes near Delagoa Bay is not usually black the prevailing colour being a mixture of black and red the most common shade being chocolate Dark complexions as being most common are naturally held in the highest esteem To be told that he is light coloured or like a white man would be deemed a very poor compliment by a Kaffir I have heard of one unfortunate man who was so very fair that no girl would marry him" One of the titles of the Zulu king is "You who are black" ( Mungo Park's 'Travels in Africa' to Burton's statement is quoted by Schaaffhausen 'Archiv fur Anthropologie' s On the Banyai Livingstone 'Travels' On the Kaffirs the Rev J Shooter 'The Kafirs of Natal and the Zulu Country' ) Mr Galton in speaking to me about the natives of S Africa remarked that their ideas of beauty seem very different from ours for in one tribe two slim slight and pretty girls were not admired by the natives

Turning to other quarters of the world in Java a yellow not a white girl is considered according to Madame Pfeiffer a beauty A man of Cochin China "spoke with contempt of the wife of the English Ambassador that she had white teeth like a dog and a rosy colour like that of potato flowers" We have seen that the Chinese dislike our white skin and that the N Americans admire "a tawny hide" In S America the Yuracaras who inhabit the wooded damp slopes of the eastern Cordillera are remarkably palecoloured as their name in their own language expresses nevertheless they consider European women as very inferior to their own ( For the Javans and CochinChinese see Waitz 'Introduct to Anthropology' Eng translat vol i On the Yuracaras A d'Orbigny as quoted in Prichard 'Physical History of Mankind' vol v rd ed )

In several of the tribes of North America the hair on the head grows to a wonderful length and Catlin gives a curious proof how much this is esteemed for the chief of the Crows was elected to this office from having the longest hair of any man in the tribe namely ten feet and seven inches The Aymaras and Quichuas of S America likewise have very long hair and this as Mr D Forbes informs me is so much valued as a beauty that cutting it off was the severest punishment which he could inflict on them In both the Northern and Southern halves of the continent the natives sometimes increase the apparent length of their hair by weaving into it fibrous substances Although the hair on the head is thus cherished that on the face is considered by the North American Indians "as very vulgar" and every hair is carefully eradicated This practice prevails throughout the American continent from Vancouver's Island in the north to Tierra del Fuego in the south When York Minster a Fuegian on board the "Beagle" was taken back to his country the natives told him he ought to pull out the few short hairs on his face They also threatened a young missionary who was left for a time with them to strip him naked and pluck the hair from his face and body yet he was far from being a hairy man This fashion is carried so far that the Indians of Paraguay eradicate their eyebrows and eyelashes saying that they do not wish to be like horses ( 'North American Indians' by G Catlin rd ed vol i vol ii On the natives of Vancouver's Island see Sproat 'Scenes and Studies of Savage Life' On the Indians of Paraguay Azara 'Voyages' tom ii )

It is remarkable that throughout the world the races which are almost completely destitute of a beard dislike hairs on the face and body and take pains to eradicate them The Kalmucks are beardless and they are well known like the Americans to pluck out all straggling hairs and so it is with the Polynesians some of the Malays and the Siamese Mr Veitch states that the Japanese ladies "all objected to our whiskers considering them very ugly and told us to cut them off and be like Japanese men" The New Zealanders have short curled beards yet they formerly plucked out the hairs on the face They had a saying that "there is no woman for a hairy man" but it would appear that the fashion has changed in New Zealand perhaps owing to the presence of Europeans and I am assured

that beards are now admired by the Maories ( On the Siamese Prichard *ibid* vol iv On the Japanese Veitch in 'Gardeners' Chronicle' On the New Zealanders Mantegazza 'Viaggi e Studi' For the other nations mentioned see references in Lawrence 'Lectures on Physiology' etc )

On the other hand bearded races admire and greatly value their beards among the AngloSaxons every part of the body had a recognised value "the loss of the beard being estimated at twenty shillings while the breaking of a thigh was fixed at only twelve" ( Lubbock 'Origin of Civilisation' ) In the East men swear solemnly by their beards We have seen that Chinsurdi the chief of the Makalolo in Africa thought that beards were a great ornament In the Pacific the Fijian's beard is "profuse and bushy and is his greatest pride" whilst the inhabitants of the adjacent archipelagoes of Tonga and Samoa are "beardless and abhor a rough chin" In one island alone of the Ellice group "the men are heavily bearded and not a little proud thereof" ( Dr Barnard Davis quotes Mr Prichard and others for these facts in regard to the Polynesians in 'Anthropolog Review' April )

We thus see how widely the different races of man differ in their taste for the beautiful In every nation sufficiently advanced to have made efies of their gods or of their deified rulers the sculptors no doubt have endeavoured to express their highest ideal of beauty and grandeur ( Ch Comte has remarks to this effect in his 'Traité de Législation' rd ed ) Under this point of view it is well to compare in our mind the Jupiter or Apollo of the Greeks with the Egyptian or Assyrian statues and these with the hideous basreliefs on the ruined buildings of Central America

I have met with very few statements opposed to this conclusion Mr Winwood Reade however who has had ample opportunities for observation not only with the negroes of the West Coast of Africa but with those of the interior who have never associated with Europeans is convinced that their ideas of beauty are ON THE WHOLE the same as ours and Dr Rohlf's writes to me to the same effect with respect to Bornu and the countries inhabited by the Pullo tribes Mr Reade found that he agreed with the negroes in their estimation of the beauty of the native girls and that their appreciation of the beauty of European women corresponded with ours They admire long hair and use artificial means to make it appear abundant they admire also a beard though themselves very scantily provided Mr Reade feels doubtful what kind of nose is most appreciated a girl has been heard to say "I do not want to marry him he has got no nose" and this shews that a very flat nose is not admired We should however bear in mind that the depressed broad noses and projecting jaws of the negroes of the West Coast are exceptional types with the inhabitants of Africa Notwithstanding the foregoing statements Mr Reade admits that negroes "do not like the colour of our skin they look on blue eyes with aversion and they think our noses too long and our lips too thin" He does not think it probable that negroes would ever prefer the most beautiful European woman on the

mere grounds of physical admiration to a goodlooking negress ( The 'African Sketch Book' vol ii The Fuegians as I have been informed by a missionary who long resided with them consider European women as extremely beautiful but from what we have seen of the judgment of the other aborigines of America I cannot but think that this must be a mistake unless indeed the statement refers to the few Fuegians who have lived for some time with Europeans and who must consider us as superior beings I should add that a most experienced observer Capt Burton believes that a woman whom we consider beautiful is admired throughout the world 'Anthropological Review' March )

The general truth of the principle long ago insisted on by Humboldt ( 'Personal Narrative' Eng transl vol iv and elsewhere Mantegazza in his 'Viaggi e Studi' strongly insists on this same principle) that man admires and often tries to exaggerate whatever characters nature may have given him is shewn in many ways The practice of beardless races extirpating every trace of a beard and often all the hairs on the body affords one illustration The skull has been greatly modified during ancient and modern times by many nations and there can be little doubt that this has been practised especially in N and S America in order to exaggerate some natural and admired peculiarity Many American Indians are known to admire a head so extremely flattened as to appear to us idiotic The natives on the northwestern coast compress the head into a pointed cone and it is their constant practice to gather the hair into a knot on the top of the head for the sake as Dr Wilson remarks "of increasing the apparent elevation of the favourite conoid form" The inhabitants of Arakhan admire a broad smooth forehead and in order to produce it they fasten a plate of lead on the heads of the newborn children On the other hand "a broad wellrounded occiput is considered a great beauty" by the natives of the Fiji Islands ( On the skulls of the American tribes see Nott and Gliddon 'Types of Mankind' Prichard 'Physical History of Mankind' vol i rd ed on the natives of Arakhan ibid vol iv Wilson 'Physical Ethnology' Smithsonian Institution on the Fijians Sir J Lubbock ('Prehistoric Times' nd ed ) gives an excellent resume on this subject)

As with the skull so with the nose the ancient Huns during the age of Attila were accustomed to flatten the noses of their infants with bandages "for the sake of exaggerating a natural conformation" With the Tahitians to be called LONGNOSE is considered as an insult and they compress the noses and foreheads of their children for the sake of beauty The same holds with the Malays of Sumatra the Hottentots certain Negroes and the natives of Brazil ( On the Huns Godron 'De l'Espèce' tom ii On the Tahitians Waitz 'Anthropology' Eng transl vol i Marsden quoted by Prichard 'Phys Hist of Mankind' rd edit vol v Lawrence 'Lectures on Physiology' ) The Chinese have by nature unusually small feet ( This fact was ascertained in the 'Reise der Novara: Anthropolog Theil' Dr Weisbach s ) and it is well known that the women of the upper classes distort their feet to make them still smaller Lastly Humboldt thinks that the American Indians prefer colouring their bodies with red paint in order to exaggerate



their natural tint and until recently European women added to their naturally bright colours by rouge and white cosmetics but it may be doubted whether barbarous nations have generally had any such intention in painting themselves

In the fashions of our own dress we see exactly the same principle and the same desire to carry every point to an extreme we exhibit also the same spirit of emulation But the fashions of savages are far more permanent than ours and whenever their bodies are artificially modified this is necessarily the case The Arab women of the Upper Nile occupy about three days in dressing their hair they never imitate other tribes "but simply vie with each other in the superlativeness of their own style" Dr Wilson in speaking of the compressed skulls of various American races adds "such usages are among the least eradicable and long survive the shock of revolutions that change dynasties and efface more important national peculiarities" ( 'Smithsonian Institution' On the fashions of Arab women Sir S Baker 'The Nile Tributaries' ) The same principle comes into play in the art of breeding and we can thus understand as I have elsewhere explained ( The 'Variation of Animals and Plants under Domestication' vol i vol ii ) the wonderful development of the many races of animals and plants which have been kept merely for ornament Fanciers always wish each character to be somewhat increased they do not admire a medium standard they certainly do not desire any great and abrupt change in the character of their breeds they admire solely what they are accustomed to but they ardently desire to see each characteristic feature a little more developed

The senses of man and of the lower animals seem to be so constituted that brilliant colours and certain forms as well as harmonious and rhythmical sounds give pleasure and are called beautiful but why this should be so we know not It is certainly not true that there is in the mind of man any universal standard of beauty with respect to the human body It is however possible that certain tastes may in the course of time become inherited though there is no evidence in favour of this belief: and if so each race would possess its own innate ideal standard of beauty It has been argued ( Schaaffhausen 'Archiv für Anthropologie' s ) that ugliness consists in an approach to the structure of the lower animals and no doubt this is partly true with the more civilised nations in which intellect is highly appreciated but this explanation will hardly apply to all forms of ugliness The men of each race prefer what they are accustomed to they cannot endure any great change but they like variety and admire each characteristic carried to a moderate extreme ( Mr Bain has collected ('Mental and Moral Science' p) about a dozen more or less different theories of the idea of beauty but none is quite the same as that here given) Men accustomed to a nearly oval face to straight and regular features and to bright colours admire as we Europeans know these points when strongly developed On the other hand men accustomed to a broad face with high cheekbones a depressed nose and a black skin admire these peculiarities when strongly marked No doubt characters of all kinds may be too much developed for beauty Hence a perfect beauty which implies

many characters modified in a particular manner will be in every race a prodigy As the great anatomist Bichat long ago said if every one were cast in the same mould there would be no such thing as beauty If all our women were to become as beautiful as the Venus de' Medici we should for a time be charmed but we should soon wish for variety and as soon as we had obtained variety we should wish to see certain characters a little exaggerated beyond the then existing common standard

## CHAPTER XX

### SECONDARY SEXUAL CHARACTERS OF MANCONTINUED

On the effects of the continued selection of women according to a different standard of beauty in each race  
On the causes which interfere with sexual selection in civilised and savage nations  
Conditions favourable to sexual selection during primeval times  
On the manner of action of sexual selection with mankind  
On the women in savage tribes having some power to choose their husbands  
Absence of hair on the body and development of the beard  
Colour of the skin  
Summary

We have seen in the last chapter that with all barbarous races ornaments dress and external appearance are highly valued and that the men judge of the beauty of their women by widely different standards We must next inquire whether this preference and the consequent selection during many generations of those women which appear to the men of each race the most attractive has altered the character either of the females alone or of both sexes With mammals the general rule appears to be that characters of all kinds are inherited equally by the males and females we might therefore expect that with mankind any characters gained by the females or by the males through sexual selection would commonly be transferred to the offspring of both sexes If any change has thus been effected it is almost certain that the different races would be differently modified as each has its own standard of beauty

With mankind especially with savages many causes interfere with the action of sexual selection as far as the bodily frame is concerned Civilised men are largely attracted by the mental charms of women by their wealth and especially by their social position for men rarely marry into a much lower rank The men who succeed in obtaining the more beautiful women will not have a better chance of leaving a long line of descendants than other men with plainer wives save the few who bequeath their fortunes according to primogeniture With respect to the opposite form of selection namely of the more attractive men by the women although in civilised nations women have free or almost free choice which is not the case with barbarous races yet their choice is largely influenced by the social position and wealth of the men and the success of the latter in life depends much on their intellectual powers and energy or on the fruits of these same powers in their forefathers No excuse is needed for treating this subject in some detail for as the German philosopher Schopenhauer remarks "the final aim of all love intrigues be they comic or tragic is really of more importance than all other ends in human life What it all turns upon is nothing less than the composition of the next generationIt is not the weal or woe of any one individual but that of the human race to come which is here at stake" ( 'Schopenhauer and Darwinism' in 'Journal of Anthropology' Jan

There is however reason to believe that in certain civilised and semi civilised nations sexual selection has effected something in modifying the bodily frame of some of the members Many persons are convinced as it appears to me with justice that our aristocracy including under this term all wealthy families in which primogeniture has long prevailed from having chosen during many generations from all classes the more beautiful women as their wives have become handsomer according to the European standard than the middle classes yet the middle classes are placed under equally favourable conditions of life for the perfect development of the body Cook remarks that the superiority in personal appearance "which is observable in the erees or nobles in all the other islands (of the Pacific) is found in the Sandwich Islands" but this may be chiefly due to their better food and manner of life

The old traveller Chardin in describing the Persians says their "blood is now highly refined by frequent intermixtures with the Georgians and Circassians two nations which surpass all the world in personal beauty There is hardly a man of rank in Persia who is not born of a Georgian or Circassian mother" He adds that they inherit their beauty "not from their ancestors for without the above mixture the men of rank in Persia who are descendants of the Tartars would be extremely ugly" ( These quotations are taken from Lawrence ('Lectures on Physiology' etc ) who attributes the beauty of the upper classes in England to the men having long selected the more beautiful women) Here is a more curious case the priestesses who attended the temple of Venus Erycina at San Giuliano in Sicily were selected for their beauty out of the whole of Greece they were not vestal virgins and Quatrefages ( 'Anthropologie' 'Revue des Cours Scientifiques' Oct ) who states the foregoing fact says that the women of SanGiuliano are now famous as the most beautiful in the island and are sought by artists as models But it is obvious that the evidence in all the above cases is doubtful

The following case though relating to savages is well worth giving for its curiosity Mr Winwood Reade informs me that the Jollofs a tribe of negroes on the west coast of Africa "are remarkable for their uniformly fine appearance" A friend of his asked one of these men "How is it that every one whom I meet is so fine looking not only your men but your women?" The Jollof answered "It is very easily explained: it has always been our custom to pick out our worstlooking slaves and to sell them" It need hardly be added that with all savages female slaves serve as concubines That this negro should have attributed whether rightly or wrongly the fine appearance of his tribe to the longcontinued elimination of the ugly women is not so surprising as it may at first appear for I have elsewhere shewn ( 'Variation of Animals and Plants under Domestication' vol i ) that negroes fully appreciate the importance of selection in the breeding of their domestic animals and I could give from Mr Reade additional evidence on this head

## **THE CAUSES WHICH PREVENT OR CHECK THE ACTION OF SEXUAL SELECTION WITH SAVAGES**

The chief causes are first so-called communal marriages or promiscuous intercourse secondly the consequences of female infanticide thirdly early betrothals and lastly the low estimation in which women are held as mere slaves These four points must be considered in some detail

It is obvious that as long as the pairing of man or of any other animal is left to mere chance with no choice exerted by either sex there can be no sexual selection and no effect will be produced on the offspring by certain individuals having had an advantage over others in their courtship Now it is asserted that there exist at the present day tribes which practise what Sir J Lubbock by courtesy calls communal marriages that is all the men and women in the tribe are husbands and wives to one another The licentiousness of many savages is no doubt astonishing but it seems to me that more evidence is requisite before we fully admit that their intercourse is in any case promiscuous Nevertheless all those who have most closely studied the subject ( Sir J Lubbock 'The Origin of Civilisation' especially p Mr M'Lennan in his extremely valuable work on 'Primitive Marriage' speaks of the union of the sexes "in the earliest times as loose transitory and in some degree promiscuous" Mr M'Lennan and Sir J Lubbock have collected much evidence on the extreme licentiousness of savages at the present time Mr LH Morgan in his interesting memoir of the classificatory system of relations ('Proceedings of the American Academy of Sciences' vol vii Feb ) concludes that polygamy and all forms of marriage during primeval times were essentially unknown It appears also from Sir J Lubbock's work that Bachofen likewise believes that communal intercourse originally prevailed) and whose judgment is worth much more than mine believe that communal marriage (this expression being variously guarded) was the original and universal form throughout the world including therein the intermarriage of brothers and sisters The late Sir A Smith who had travelled widely in S Africa and knew much about the habits of savages there and elsewhere expressed to me the strongest opinion that no race exists in which woman is considered as the property of the community I believe that his judgment was largely determined by what is implied by the term marriage Throughout the following discussion I use the term in the same sense as when naturalists speak of animals as monogamous meaning thereby that the male is accepted by or chooses a single female and lives with her either during the breeding season or for the whole year keeping possession of her by the law of might or as when they speak of a polygamous species meaning that the male lives with several females This kind of marriage is all that concerns us here as it suffices for the work of sexual selection But I know that some of the writers above referred to imply by the term marriage a recognised right protected by the tribe

The indirect evidence in favour of the belief of the former prevalence of communal marriages is strong and rests chiefly on the terms of relationship which are employed between the members of the same tribe implying a connection with the tribe and not with either parent. But the subject is too large and complex for even an abstract to be here given and I will confine myself to a few remarks. It is evident in the case of such marriages or where the marriage tie is very loose that the relationship of the child to its father cannot be known. But it seems almost incredible that the relationship of the child to its mother should ever be completely ignored especially as the women in most savage tribes nurse their infants for a long time. Accordingly in many cases the lines of descent are traced through the mother alone to the exclusion of the father. But in other cases the terms employed express a connection with the tribe alone to the exclusion even of the mother. It seems possible that the connection between the related members of the same barbarous tribe exposed to all sorts of danger might be so much more important owing to the need of mutual protection and aid than that between the mother and her child as to lead to the sole use of terms expressive of the former relationships but Mr Morgan is convinced that this view is by no means sufficient.

The terms of relationship used in different parts of the world may be divided according to the author just quoted into two great classes the classificatory and descriptive the latter being employed by us. It is the classificatory system which so strongly leads to the belief that communal and other extremely loose forms of marriage were originally universal. But as far as I can see there is no necessity on this ground for believing in absolutely promiscuous intercourse and I am glad to find that this is Sir J Lubbock's view. Men and women like many of the lower animals might formerly have entered into strict though temporary unions for each birth and in this case nearly as much confusion would have arisen in the terms of relationship as in the case of promiscuous intercourse. As far as sexual selection is concerned all that is required is that choice should be exerted before the parents unite and it signifies little whether the unions last for life or only for a season.

Besides the evidence derived from the terms of relationship other lines of reasoning indicate the former wide prevalence of communal marriage. Sir J Lubbock accounts for the strange and widely extended habit of exogamy that is the men of one tribe taking wives from a distinct tribe by communism having been the original form of intercourse so that a man never obtained a wife for himself unless he captured her from a neighbouring and hostile tribe and then she would naturally have become his sole and valuable property. Thus the practice of capturing wives might have arisen and from the honour so gained it might ultimately have become the universal habit. According to Sir J Lubbock ( 'Address to British Association On the Social and Religious Condition of the Lower Races of Man' ) we can also thus understand "the necessity of expiation for marriage as an infringement of tribal rites since according to old ideas a man had no

right to appropriate to himself that which belonged to the whole tribe" Sir J Lubbock further gives a curious body of facts shewing that in old times high honour was bestowed on women who were utterly licentious and this as he explains is intelligible if we admit that promiscuous intercourse was the aboriginal and therefore long revered custom of the tribe ( 'Origin of Civilisation' In the several works above quoted there will be found copious evidence on relationship through the females alone or with the tribe alone)

Although the manner of development of the marriage tie is an obscure subject as we may infer from the divergent opinions on several points between the three authors who have studied it most closely namely Mr Morgan Mr M'Lennan and Sir J Lubbock yet from the foregoing and several other lines of evidence it seems probable ( Mr C Staniland Wake argues strongly ('Anthropologia' March ) against the views held by these three writers on the former prevalence of almost promiscuous intercourse and he thinks that the classificatory system of relationship can be otherwise explained) that the habit of marriage in any strict sense of the word has been gradually developed and that almost promiscuous or very loose intercourse was once extremely common throughout the world Nevertheless from the strength of the feeling of jealousy all through the animal kingdom as well as from the analogy of the lower animals more particularly of those which come nearest to man I cannot believe that absolutely promiscuous intercourse prevailed in times past shortly before man attained to his present rank in the zoological scale Man as I have attempted to shew is certainly descended from some apelike creature With the existing Quadrumana as far as their habits are known the males of some species are monogamous but live during only a part of the year with the females: of this the orang seems to afford an instance Several kinds for example some of the Indian and American monkeys are strictly monogamous and associate all the year round with their wives Others are polygamous for example the gorilla and several American species and each family lives separate Even when this occurs the families inhabiting the same district are probably somewhat social the chimpanzee for instance is occasionally met with in large bands Again other species are polygamous but several males each with his own females live associated in a body as with several species of baboons ( Brehm ('Thierleben' B i ) says *Cynocephalus hamadryas* lives in great troops containing twice as many adult females as adult males See Rengger on American polygamous species and Owen ('Anatomy of Vertebrates' vol iii ) on American monogamous species Other references might be added) We may indeed conclude from what we know of the jealousy of all male quadrupeds armed as many of them are with special weapons for battling with their rivals that promiscuous intercourse in a state of nature is extremely improbable The pairing may not last for life but only for each birth yet if the males which are the strongest and best able to defend or otherwise assist their females and young were to select the more attractive females this would suffice for sexual selection

Therefore looking far enough back in the stream of time and judging from the social habits of man as he now exists the most probable view is that he aboriginally lived in small communities each with a single wife or if powerful with several whom he jealously guarded against all other men Or he may not have been a social animal and yet have lived with several wives like the gorilla for all the natives "agree that but one adult male is seen in a band when the young male grows up a contest takes place for mastery and the strongest by killing and driving out the others establishes himself as the head of the community" ( Dr Savage in 'Boston Journal of Natural History' vol v ) The younger males being thus expelled and wandering about would when at last successful in finding a partner prevent too close interbreeding within the limits of the same family

Although savages are now extremely licentious and although communal marriages may formerly have largely prevailed yet many tribes practise some form of marriage but of a far more lax nature than that of civilised nations Polygamy as just stated is almost universally followed by the leading men in every tribe Nevertheless there are tribes standing almost at the bottom of the scale which are strictly monogamous This is the case with the Veddahs of Ceylon: they have a saying according to Sir J Lubbock ( 'Prehistoric Times' ) "that death alone can separate husband and wife" An intelligent Kandyan chief of course a polygamist "was perfectly scandalised at the utter barbarism of living with only one wife and never parting until separated by death" It was he said "just like the Wanderoo monkeys" Whether savages who now enter into some form of marriage either polygamous or monogamous have retained this habit from primeval times or whether they have returned to some form of marriage after passing through a stage of promiscuous intercourse I will not pretend to conjecture

### **INFANTICIDE**

This practice is now very common throughout the world and there is reason to believe that it prevailed much more extensively during former times ( Mr M'Lennan 'Primitive Marriage' See especially on exogamy and infanticide ) Barbarians find it difficult to support themselves and their children and it is a simple plan to kill their infants In South America some tribes according to Azara formerly destroyed so many infants of both sexes that they were on the point of extinction In the Polynesian Islands women have been known to kill from four or five to even ten of their children and Ellis could not find a single woman who had not killed at least one In a village on the eastern frontier of India Colonel MacCulloch found not a single female child Wherever infanticide ( Dr Gerland ('Ueber das Aussterben der Naturvölker' ) has collected much information on infanticide see especially ss Azara ('Voyages' etc tom ii ) enters in detail on the motives See also M'Lennan (ibid ) for cases in India In the former reprints of the 2nd edition of this book an incorrect quotation from Sir G Grey was unfortunately given in the above passage and has now been removed from the text) prevails the struggle for existence will



be in so far less severe and all the members of the tribe will have an almost equally good chance of rearing their few surviving children In most cases a larger number of female than of male infants are destroyed for it is obvious that the latter are of more value to the tribe as they will when grown up aid in defending it and can support themselves But the trouble experienced by the women in rearing children their consequent loss of beauty the higher estimation set on them when few and their happier fate are assigned by the women themselves and by various observers as additional motives for infanticide

When owing to female infanticide the women of a tribe were few the habit of capturing wives from neighbouring tribes would naturally arise Sir J Lubbock however as we have seen attributes the practice in chief part to the former existence of communal marriage and to the men having consequently captured women from other tribes to hold as their sole property Additional causes might be assigned such as the communities being very small in which case marriageable women would often be deficient That the habit was most extensively practised during former times even by the ancestors of civilised nations is clearly shewn by the preservation of many curious customs and ceremonies of which Mr M'Lennan has given an interesting account In our own marriages the "best man" seems originally to have been the chief abettor of the bridegroom in the act of capture Now as long as men habitually procured their wives through violence and craft they would have been glad to seize on any woman and would not have selected the more attractive ones But as soon as the practice of procuring wives from a distinct tribe was effected through barter as now occurs in many places the more attractive women would generally have been purchased The incessant crossing however between tribe and tribe which necessarily follows from any form of this habit would tend to keep all the people inhabiting the same country nearly uniform in character and this would interfere with the power of sexual selection in differentiating the tribes

The scarcity of women consequent on female infanticide leads also to another practice that of polyandry still common in several parts of the world and which formerly as Mr M'Lennan believes prevailed almost universally: but this latter conclusion is doubted by Mr Morgan and Sir J Lubbock ( 'Primitive Marriage' Sir J Lubbock 'Origin of Civilisation' See also Mr Morgan loc cit on the former prevalence of polyandry) Whenever two or more men are compelled to marry one woman it is certain that all the women of the tribe will get married and there will be no selection by the men of the more attractive women But under these circumstances the women no doubt will have the power of choice and will prefer the more attractive men Azara for instance describes how carefully a Guana woman bargains for all sorts of privileges before accepting some one or more husbands and the men in consequence take unusual care of their personal appearance So amongst the Todas of India who practise polyandry the girls can accept or refuse any man ( Azara 'Voyages' etc tom ii p Colonel Marshall 'Amongst the Todas' ) A very ugly man in these cases would perhaps altogether fail in getting a wife or get one

later in life but the handsomer men although more successful in obtaining wives would not as far as we can see leave more offspring to inherit their beauty than the less handsome husbands of the same women

### **EARLY BETROTHALS AND SLAVERY OF WOMEN**

With many savages it is the custom to betroth the females whilst mere infants and this would effectually prevent preference being exerted on either side according to personal appearance. But it would not prevent the more attractive women from being afterwards stolen or taken by force from their husbands by the more powerful men and this often happens in Australia, America and elsewhere. The same consequences with reference to sexual selection would to a certain extent follow when women are valued almost solely as slaves or beasts of burden as is the case with many savages. The men however at all times would prefer the handsomest slaves according to their standard of beauty.

We thus see that several customs prevail with savages which must greatly interfere with or completely stope the action of sexual selection. On the other hand the conditions of life to which savages are exposed and some of their habits are favourable to natural selection and this comes into play at the same time with sexual selection. Savages are known to suffer severely from recurrent famines they do not increase their food by artificial means they rarely refrain from marriage ( Burchell says ('Travels in S Africa' vol ii ) that among the wild nations of Southern Africa neither men nor women ever pass their lives in a state of celibacy Azara ('Voyages dans l'Amérique Merid' tom ii ) makes precisely the same remark in regard to the wild Indians of South America) and generally marry whilst young. Consequently they must be subjected to occasional hard struggles for existence and the favoured individuals will alone survive.

At a very early period before man attained to his present rank in the scale many of his conditions would be different from what now obtains amongst savages. Judging from the analogy of the lower animals he would then either live with a single female or be a polygamist. The most powerful and able males would succeed best in obtaining attractive females. They would also succeed best in the general struggle for life and in defending their females as well as their offspring from enemies of all kinds. At this early period the ancestors of man would not be sufficiently advanced in intellect to look forward to distant contingencies they would not foresee that the rearing of all their children especially their female children would make the struggle for life severer for the tribe. They would be governed more by their instincts and less by their reason than are savages at the present day. They would not at that period have partially lost one of the strongest of all instincts common to all the lower animals namely the love of their young offspring and consequently they would not have practised female infanticide. Women would not have been thus rendered scarce and polyandry would not have been practised.

for hardly any other cause except the scarcity of women seems sufficient to break down the natural and widely prevalent feeling of jealousy and the desire of each male to possess a female for himself Polyandry would be a natural steppingstone to communal marriages or almost promiscuous intercourse though the best authorities believe that this latter habit preceded polyandry During primordial times there would be no early betrothals for this implies foresight Nor would women be valued merely as useful slaves or beasts of burthen Both sexes if the females as well as the males were permitted to exert any choice would choose their partners not for mental charms or property or social position but almost solely from external appearance All the adults would marry or pair and all the offspring as far as that was possible would be reared so that the struggle for existence would be periodically excessively severe Thus during these times all the conditions for sexual selection would have been more favourable than at a later period when man had advanced in his intellectual powers but had retrograded in his instincts Therefore whatever influence sexual selection may have had in producing the differences between the races of man and between man and the higher Quadrumana this influence would have been more powerful at a remote period than at the present day though probably not yet wholly lost

### **THE MANNER OF ACTION OF SEXUAL SELECTION WITH MANKIND**

With primeval man under the favourable conditions just stated and with those savages who at the present time enter into any marriage tie sexual selection has probably acted in the following manner subject to greater or less interference from female infanticide early betrothals etc The strongest and most vigorous menthose who could best defend and hunt for their families who were provided with the best weapons and possessed the most property such as a large number of dogs or other animals would succeed in rearing a greater average number of offspring than the weaker and poorer members of the same tribes There can also be no doubt that such men would generally be able to select the more attractive women At present the chiefs of nearly every tribe throughout the world succeed in obtaining more than one wife I hear from Mr Mantell that until recently almost every girl in New Zealand who was pretty or promised to be pretty was tapu to some chief With the Kafirs as Mr C Hamilton states ( 'Anthropological Review' Jan xvi) "the chiefs generally have the pick of the women for many miles round and are most persevering in establishing or confirming their privilege" We have seen that each race has its own style of beauty and we know that it is natural to man to admire each characteristic point in his domestic animals dress ornaments and personal appearance when carried a little beyond the average If then the several foregoing propositions be admitted and I cannot see that they are doubtful it would be an inexplicable circumstance if the selection of the more attractive women by the more powerful men of each tribe who would rear on an average a greater number of children did not after the lapse of many generations somewhat modify the character of the tribe

When a foreign breed of our domestic animals is introduced into a new country or when a native breed is long and carefully attended to either for use or ornament it is found after several generations to have undergone a greater or less amount of change whenever the means of comparison exist This follows from unconscious selection during a long series of generations that is the preservation of the most approved individuals without any wish or expectation of such a result on the part of the breeder So again if during many years two careful breeders rear animals of the same family and do not compare them together or with a common standard the animals are found to have become to the surprise of their owners slightly different ( The 'Variation of Animals and Plants under Domestication' vol ii p) Each breeder has impressed as von Nathusius well expresses it the character of his own mind his own taste and judgment on his animals What reason then can be assigned why similar results should not follow from the long continued selection of the most admired women by those men of each tribe who were able to rear the greatest number of children? This would be unconscious selection for an effect would be produced independently of any wish or expectation on the part of the men who preferred certain women to others

Let us suppose the members of a tribe practising some form of marriage to spread over an unoccupied continent they would soon split up into distinct hordes separated from each other by various barriers and still more effectually by the incessant wars between all barbarous nations The hordes would thus be exposed to slightly different conditions and habits of life and would sooner or later come to differ in some small degree As soon as this occurred each isolated tribe would form for itself a slightly different standard of beauty ( An ingenious writer argues from a comparison of the pictures of Raphael Rubens and modern French artists that the idea of beauty is not absolutely the same even throughout Europe: see the 'Lives of Haydn and Mozart' by Bombet (otherwise M Beyle) English translation ) and then unconscious selection would come into action through the more powerful and leading men preferring certain women to others Thus the differences between the tribes at first very slight would gradually and inevitably be more or less increased

With animals in a state of nature many characters proper to the males such as size strength special weapons courage and pugnacity have been acquired through the law of battle The semihuman progenitors of man like their allies the Quadrumana will almost certainly have been thus modified and as savages still fight for the possession of their women a similar process of selection has probably gone on in a greater or less degree to the present day Other characters proper to the males of the lower animals such as bright colours and various ornaments have been acquired by the more attractive males having been preferred by the females There are however exceptional cases in which the males are the selectors instead of having been the selected We recognise such cases by the

females being more highly ornamented than the male their ornamental characters having been transmitted exclusively or chiefly to their female offspring One such case has been described in the order to which man belongs that of the Rhesus monkey

Man is more powerful in body and mind than woman and in the savage state he keeps her in a far more abject state of bondage than does the male of any other animal therefore it is not surprising that he should have gained the power of selection Women are everywhere conscious of the value of their own beauty and when they have the means they take more delight in decorating themselves with all sorts of ornaments than do men They borrow the plumes of male birds with which nature has decked this sex in order to charm the females As women have long been selected for beauty it is not surprising that some of their successive variations should have been transmitted exclusively to the same sex consequently that they should have transmitted beauty in a somewhat higher degree to their female than to their male offspring and thus have become more beautiful according to general opinion than men Women however certainly transmit most of their characters including some beauty to their offspring of both sexes so that the continued preference by the men of each race for the more attractive women according to their standard of taste will have tended to modify in the same manner all the individuals of both sexes belonging to the race

With respect to the other form of sexual selection (which with the lower animals is much the more common) namely when the females are the selectors and accept only those males which excite or charm them most we have reason to believe that it formerly acted on our progenitors Man in all probability owes his beard and perhaps some other characters to inheritance from an ancient progenitor who thus gained his ornaments But this form of selection may have occasionally acted during later times for in utterly barbarous tribes the women have more power in choosing rejecting and tempting their lovers or of afterwards changing their husbands than might have been expected As this is a point of some importance I will give in detail such evidence as I have been able to collect

Hearne describes how a woman in one of the tribes of Arctic America repeatedly ran away from her husband and joined her lover and with the Charruas of S America according to Azara divorce is quite optional Amongst the Abipones a man on choosing a wife bargains with the parents about the price But "it frequently happens that the girl rescinds what has been agreed upon between the parents and the bridegroom obstinately rejecting the very mention of marriage" She often runs away hides herself and thus eludes the bridegroom Captain Musters who lived with the Patagonians says that their marriages are always settled by inclination "if the parents make a match contrary to the daughter's will she refuses and is never compelled to comply" In Tierra del Fuego a young man first obtains the consent of the parents by doing them some

service and then he attempts to carry off the girl "but if she is unwilling she hides herself in the woods until her admirer is heartily tired of looking for her and gives up the pursuit but this seldom happens" In the Fiji Islands the man seizes on the woman whom he wishes for his wife by actual or pretended force but "on reaching the home of her abductor should she not approve of the match she runs to some one who can protect her if however she is satisfied the matter is settled forthwith" With the Kalmucks there is a regular race between the bride and bridegroom the former having a fair start and Clarke "was assured that no instance occurs of a girl being caught unless she has a partiality to the pursuer" Amongst the wild tribes of the Malay Archipelago there is also a racing match and it appears from M Bourien's account as Sir J Lubbock remarks that "the race 'is not to the swift nor the battle to the strong' but to the young man who has the good fortune to please his intended bride" A similar custom with the same result prevails with the Koraks of North Eastern Asia

Turning to Africa: the Kafirs buy their wives and girls are severely beaten by their fathers if they will not accept a chosen husband but it is manifest from many facts given by the Rev Mr Shooter that they have considerable power of choice Thus very ugly though rich men have been known to fail in getting wives The girls before consenting to be betrothed compel the men to shew themselves off first in front and then behind and "exhibit their paces" They have been known to propose to a man and they not rarely run away with a favoured lover So again Mr Leslie who was intimately acquainted with the Kafirs says "it is a mistake to imagine that a girl is sold by her father in the same manner and with the same authority with which he would dispose of a cow" Amongst the degraded Bushmen of S Africa "when a girl has grown up to womanhood without having been betrothed which however does not often happen her lover must gain her approbation as well as that of the parents" ( Azara 'Voyages' etc tom ii Dobrizhoffer 'An Account of the Abipones' vol ii Capt Musters in 'Proc R Geograph Soc' vol xv Williams on the Fiji Islanders as quoted by Lubbock 'Origin of Civilisation' On the Fuegians King and Fitzroy 'Voyages of the "Adventure" and "Beagle"' vol ii On the Kalmucks quoted by M'Lennan 'Primitive Marriage' On the Malays Lubbock *ibid* The Rev J Shooter 'On the Kafirs of Natal' p Mr D Leslie 'Kafir Character and Customs' On the Bushmen Burchell 'Travels in S Africa' ii On the Koraks by McKennan as quoted by Mr Wake in 'Anthropologia' Oct ) Mr Winwood Reade made inquiries for me with respect to the negroes of Western Africa and he informs me that "the women at least among the more intelligent Pagan tribes have no difficulty in getting the husbands whom they may desire although it is considered unwomanly to ask a man to marry them They are quite capable of falling in love and of forming tender passionate and faithful attachments" Additional cases could be given

We thus see that with savages the women are not in quite so abject a state in relation to marriage as has often been supposed They can tempt the men whom they prefer and can

sometimes reject those whom they dislike either before or after marriage Preference on the part of the women steadily acting in any one direction would ultimately affect the character of the tribe for the women would generally choose not merely the handsomest men according to their standard of taste but those who were at the same time best able to defend and support them Such wellendowed pairs would commonly rear a larger number of offspring than the less favoured The same result would obviously follow in a still more marked manner if there was selection on both sides that is if the more attractive and at the same time more powerful men were to prefer and were preferred by the more attractive women And this double form of selection seems actually to have occurred especially during the earlier periods of our long history

We will now examine a little more closely some of the characters which distinguish the several races of man from one another and from the lower animals namely the greater or less deficiency of hair on the body and the colour of the skin We need say nothing about the great diversity in the shape of the features and of the skull between the different races as we have seen in the last chapter how different is the standard of beauty in these respects These characters will therefore probably have been acted on through sexual selection but we have no means of judging whether they have been acted on chiefly from the male or female side The musical faculties of man have likewise been already discussed

### **ABSENCE OF HAIR ON THE BODY AND ITS DEVELOPMENT ON THE FACE AND HEAD**

From the presence of the woolly hair or lanugo on the human foetus and of rudimentary hairs scattered over the body during maturity we may infer that man is descended from some animal which was born hairy and remained so during life The loss of hair is an inconvenience and probably an injury to man even in a hot climate for he is thus exposed to the scorching of the sun and to sudden chills especially during wet weather As Mr Wallace remarks the natives in all countries are glad to protect their naked backs and shoulders with some slight covering No one supposes that the nakedness of the skin is any direct advantage to man his body therefore cannot have been divested of hair through natural selection ( 'Contributions to the Theory of Natural Selection' Mr Wallace believes ) "that some intelligent power has guided or determined the development of man" and he considers the hairless condition of the skin as coming under this head The Rev TR Stebbing in commenting on this view ( 'Transactions of Devonshire Association for Science' ) remarks that had Mr Wallace "employed his usual ingenuity on the question of man's hairless skin he might have seen the possibility of its selection through its superior beauty or the health attaching to superior cleanliness") Nor as shewn in a former chapter have we any evidence that this can be due to the direct action of climate or that it is the result of correlated development

The absence of hair on the body is to a certain extent a secondary sexual character for in all parts of the world women are less hairy than men Therefore we may reasonably suspect that this character has been gained through sexual selection We know that the faces of several species of monkeys and large surfaces at the posterior end of the body of other species have been denuded of hair and this we may safely attribute to sexual selection for these surfaces are not only vividly coloured but sometimes as with the male mandrill and female rhesus much more vividly in the one sex than in the other especially during the breedingseason I am informed by Mr Bartlett that as these animals gradually reach maturity the naked surfaces grow larger compared with the size of their bodies The hair however appears to have been removed not for the sake of nudity but that the colour of the skin may be more fully displayed So again with many birds it appears as if the head and neck had been divested of feathers through sexual selection to exhibit the brightlycoloured skin

As the body in woman is less hairy than in man and as this character is common to all races we may conclude that it was our female semihuman ancestors who were first divested of hair and that this occurred at an extremely remote period before the several races had diverged from a common stock Whilst our female ancestors were gradually acquiring this new character of nudity they must have transmitted it almost equally to their offspring of both sexes whilst young so that its transmission as with the ornaments of many mammals and birds has not been limited either by sex or age There is nothing surprising in a partial loss of hair having been esteemed as an ornament by our apelike progenitors for we have seen that innumerable strange characters have been thus esteemed by animals of all kinds and have consequently been gained through sexual selection Nor is it surprising that a slightly injurious character should have been thus acquired for we know that this is the case with the plumes of certain birds and with the horns of certain stags

The females of some of the anthropoid apes as stated in a former chapter are somewhat less hairy on the under surface than the males and here we have what might have afforded a commencement for the process of denudation With respect to the completion of the process through sexual selection it is well to bear in mind the New Zealand proverb "There is no woman for a hairy man" All who have seen photographs of the Siamese hairy family will admit how ludicrously hideous is the opposite extreme of excessive hairiness And the king of Siam had to bribe a man to marry the first hairy woman in the family and she transmitted this character to her young offspring of both sexes ( The 'Variation of Animals and Plants under Domestication' vol ii )

Some races are much more hairy than others especially the males but it must not be assumed that the more hairy races such as the European have retained their primordial



condition more completely than the naked races such as the Kalmucks or Americans It is more probable that the hairiness of the former is due to partial reversion for characters which have been at some former period long inherited are always apt to return We have seen that idiots are often very hairy and they are apt to revert in other characters to a lower animal type It does not appear that a cold climate has been influential in leading to this kind of reversion excepting perhaps with the negroes who have been reared during several generations in the United States ( 'Investigations into Military and Anthropological Statistics of American Soldiers' by BA Gould :Observations were carefully made on the hairiness of black and coloured soldiers whilst they were bathing and by looking to the published table "it is manifest at a glance that there is but little if any difference between the white and the black races in this respect" It is however certain that negroes in their native and much hotter land of Africa have remarkably smooth bodies It should be particularly observed that both pure blacks and mulattoes were included in the above enumeration and this is an unfortunate circumstance as in accordance with a principle the truth of which I have elsewhere proved crossed races of man would be eminently liable to revert to the primordial hairy character of their early apelike progenitors) and possibly with the Ainos who inhabit the northern islands of the Japan archipelago But the laws of inheritance are so complex that we can seldom understand their action If the greater hairiness of certain races be the result of reversion unchecked by any form of selection its extreme variability even within the limits of the same race ceases to be remarkable ( Hardly any view advanced in this work has met with so much disfavour (see for instance Sprengel 'Die Fortschritte des Darwinismus' ) as the above explanation of the loss of hair in mankind through sexual selection but none of the opposed arguments seem to me of much weight in comparison with the facts shewing that the nudity of the skin is to a certain extent a secondary sexual character in man and in some of the Quadrumana)

With respect to the beard in man if we turn to our best guide the Quadrumana we find beards equally developed in both sexes of many species but in some either confined to the males or more developed in them than in the females From this fact and from the curious arrangement as well as the bright colours of the hair about the heads of many monkeys it is highly probable as before explained that the males first acquired their beards through sexual selection as an ornament transmitting them in most cases equally or nearly so to their offspring of both sexes We know from Eschricht ( 'Ueber die Richtung der Haare am Menschlichen Körper' in Müller's 'Archiv für Anat und Phys' s ) that with mankind the female as well as the male foetus is furnished with much hair on the face especially round the mouth and this indicates that we are descended from progenitors of whom both sexes were bearded It appears therefore at first sight probable that man has retained his beard from a very early period whilst woman lost her beard at the same time that her body became almost completely divested of hair Even the colour of our beards seems to have been inherited from an apelike progenitor for when there is

any difference in tint between the hair of the head and the beard the latter is lighter coloured in all monkeys and in man In those Quadrumana in which the male has a larger beard than that of the female it is fully developed only at maturity just as with mankind and it is possible that only the later stages of development have been retained by man In opposition to this view of the retention of the beard from an early period is the fact of its great variability in different races and even within the same race for this indicates reversion long lost characters being very apt to vary on reappearance

Nor must we overlook the part which sexual selection may have played in later times for we know that with savages the men of the beardless races take infinite pains in eradicating every hair from their faces as something odious whilst the men of the bearded races feel the greatest pride in their beards The women no doubt participate in these feelings and if so sexual selection can hardly have failed to have effected something in the course of later times It is also possible that the long continued habit of eradicating the hair may have produced an inherited effect Dr Brown Sequard has shewn that if certain animals are operated on in a particular manner their offspring are affected Further evidence could be given of the inheritance of the effects of mutilations but a fact lately ascertained by Mr Salvin ( On the tailfeathers of Motmots 'Proceedings of the Zoological Society' ) has a more direct bearing on the present question for he has shewn that the motmots which are known habitually to bite off the barbs of the two central tail feathers have the barbs of these feathers naturally somewhat reduced ( Mr Sproat has suggested ('Scenes and Studies of Savage Life' ) this same view Some distinguished ethnologists amongst others M Gosse of Geneva believe that artificial modifications of the skull tend to be inherited) Nevertheless with mankind the habit of eradicating the beard and the hairs on the body would probably not have arisen until these had already become by some means reduced

It is difficult to form any judgment as to how the hair on the head became developed to its present great length in many races Eschricht ( 'Ueber die Richtung' *ibid* s ) states that in the human foetus the hair on the face during the fifth month is longer than that on the head and this indicates that our semihuman progenitors were not furnished with long tresses which must therefore have been a late acquisition This is likewise indicated by the extraordinary difference in the length of the hair in the different races in the negro the hair forms a mere curly mat with us it is of great length and with the American natives it not rarely reaches to the ground Some species of *Semnopithecus* have their heads covered with moderately long hair and this probably serves as an ornament and was acquired through sexual selection The same view may perhaps be extended to mankind for we know that long tresses are now and were formerly much admired as may be observed in the works of almost every poet St Paul says "if a woman have long hair it is a glory to her" and we have seen that in North America a chief was elected solely from the length of his hair

## **COLOUR OF THE SKIN**

The best kind of evidence that in man the colour of the skin has been modified through sexual selection is scanty for in most races the sexes do not differ in this respect and only slightly as we have seen in others We know however from the many facts already given that the colour of the skin is regarded by the men of all races as a highly important element in their beauty so that it is a character which would be likely to have been modified through selection as has occurred in innumerable instances with the lower animals It seems at first sight a monstrous supposition that the jetblackness of the negro should have been gained through sexual selection but this view is supported by various analogies and we know that negroes admire their own colour With mammals when the sexes differ in colour the male is often black or much darker than the female and it depends merely on the form of inheritance whether this or any other tint is transmitted to both sexes or to one alone The resemblance to a negro in miniature of *Pithecia satanas* with his jet black skin white rolling eyeballs and hair parted on the top of the head is almost ludicrous

The colour of the face differs much more widely in the various kinds of monkeys than it does in the races of man and we have some reason to believe that the red blue orange almost white and black tints of their skin even when common to both sexes as well as the bright colours of their fur and the ornamental tufts about the head have all been acquired through sexual selection As the order of development during growth generally indicates the order in which the characters of a species have been developed and modified during previous generations and as the newly born infants of the various races of man do not differ nearly as much in colour as do the adults although their bodies are as completely destitute of hair we have some slight evidence that the tints of the different races were acquired at a period subsequent to the removal of the hair which must have occurred at a very early period in the history of man

## **SUMMARY**

We may conclude that the greater size strength courage pugnacity and energy of man in comparison with woman were acquired during primeval times and have subsequently been augmented chiefly through the contests of rival males for the possession of the females The greater intellectual vigour and power of invention in man is probably due to natural selection combined with the inherited effects of habit for the most able men will have succeeded best in defending and providing for themselves and for their wives and offspring As far as the extreme intricacy of the subject permits us to judge it appears that our male apelike progenitors acquired their beards as an ornament to charm or excite the opposite sex and transmitted them only to their male offspring The females apparently first had their bodies denuded of hair also as a sexual ornament but they

transmitted this character almost equally to both sexes It is not improbable that the females were modified in other respects for the same purpose and by the same means so that women have acquired sweeter voices and become more beautiful than men

It deserves attention that with mankind the conditions were in many respects much more favourable for sexual selection during a very early period when man had only just attained to the rank of manhood than during later times For he would then as we may safely conclude have been guided more by his instinctive passions and less by foresight or reason He would have jealously guarded his wife or wives He would not have practised infanticide nor valued his wives merely as useful slaves nor have been betrothed to them during infancy Hence we may infer that the races of men were differentiated as far as sexual selection is concerned in chief part at a very remote epoch and this conclusion throws light on the remarkable fact that at the most ancient period of which we have not as yet any record the races of man had already come to differ nearly or quite as much as they do at the present day

The views here advanced on the part which sexual selection has played in the history of man want scientific precision He who does not admit this agency in the case of the lower animals will disregard all that I have written in the later chapters on man We cannot positively say that this character but not that has been thus modified it has however been shewn that the races of man differ from each other and from their nearest allies in certain characters which are of no service to them in their daily habits of life and which it is extremely probable would have been modified through sexual selection We have seen that with the lowest savages the people of each tribe admire their own characteristic qualities the shape of the head and face the squareness of the cheek bones the prominence or depression of the nose the colour of the skin the length of the hair on the head the absence of hair on the face and body or the presence of a great beard and so forth Hence these and other such points could hardly fail to be slowly and gradually exaggerated from the more powerful and able men in each tribe who would succeed in rearing the largest number of offspring having selected during many generations for their wives the most strongly characterised and therefore most attractive women For my own part I conclude that of all the causes which have led to the differences in external appearance between the races of man and to a certain extent between man and the lower animals sexual selection has been the most efficient

## CHAPTER XXI

### GENERAL SUMMARY AND CONCLUSION

Main conclusion that man is descended from some lower form  
Manner of development  
Genealogy of man  
Intellectual and moral faculties  
Sexual Selection  
Concluding remarks

A brief summary will be sufficient to recall to the reader's mind the more salient points in this work. Many of the views which have been advanced are highly speculative and some no doubt will prove erroneous but I have in every case given the reasons which have led me to one view rather than to another. It seemed worth while to try how far the principle of evolution would throw light on some of the more complex problems in the natural history of man. False facts are highly injurious to the progress of science for they often endure long but false views if supported by some evidence do little harm for every one takes a salutary pleasure in proving their falseness: and when this is done one path towards error is closed and the road to truth is often at the same time opened.

The main conclusion here arrived at and now held by many naturalists who are well competent to form a sound judgment is that man is descended from some less highly organised form. The grounds upon which this conclusion rests will never be shaken for the close similarity between man and the lower animals in embryonic development as well as in innumerable points of structure and constitution both of high and of the most trifling importance—the rudiments which he retains and the abnormal reversion to which he is occasionally liable—are facts which cannot be disputed. They have long been known but until recently they told us nothing with respect to the origin of man. Now when viewed by the light of our knowledge of the whole organic world their meaning is unmistakable. The great principle of evolution stands up clear and firm when these groups or facts are considered in connection with others such as the mutual affinities of the members of the same group, their geographical distribution in past and present times and their geological succession. It is incredible that all these facts should speak falsely. He who is not content to look like a savage at the phenomena of nature as disconnected cannot any longer believe that man is the work of a separate act of creation. He will be forced to admit that the close resemblance of the embryo of man to that for instance of a dog—the construction of his skull, limbs and whole frame on the same plan with that of other mammals independently of the uses to which the parts may be put—the occasional reappearance of various structures for instance of several muscles which man does not normally possess but which are common to the Quadrumana—and a crowd of analogous facts—all point in the plainest manner to the conclusion that man is the codescendant with other mammals of a common progenitor.

We have seen that man incessantly presents individual differences in all parts of his body and in his mental faculties These differences or variations seem to be induced by the same general causes and to obey the same laws as with the lower animals In both cases similar laws of inheritance prevail Man tends to increase at a greater rate than his means of subsistence consequently he is occasionally subjected to a severe struggle for existence and natural selection will have effected whatever lies within its scope A succession of strongly marked variations of a similar nature is by no means requisite slight fluctuating differences in the individual suffice for the work of natural selection not that we have any reason to suppose that in the same species all parts of the organisation tend to vary to the same degree We may feel assured that the inherited effects of the long continued use or disuse of parts will have done much in the same direction with natural selection Modifications formerly of importance though no longer of any special use are long inherited When one part is modified other parts change through the principle of correlation of which we have instances in many curious cases of correlated monstrosities Something may be attributed to the direct and definite action of the surrounding conditions of life such as abundant food heat or moisture and lastly many characters of slight physiological importance some indeed of considerable importance have been gained through sexual selection

No doubt man as well as every other animal presents structures which seem to our limited knowledge not to be now of any service to him nor to have been so formerly either for the general conditions of life or in the relations of one sex to the other Such structures cannot be accounted for by any form of selection or by the inherited effects of the use and disuse of parts We know however that many strange and strongly marked peculiarities of structure occasionally appear in our domesticated productions and if their unknown causes were to act more uniformly they would probably become common to all the individuals of the species We may hope hereafter to understand something about the causes of such occasional modifications especially through the study of monstrosities: hence the labours of experimentalists such as those of M Camille Dareste are full of promise for the future In general we can only say that the cause of each slight variation and of each monstrosity lies much more in the constitution of the organism than in the nature of the surrounding conditions though new and changed conditions certainly play an important part in exciting organic changes of many kinds

Through the means just specified aided perhaps by others as yet undiscovered man has been raised to his present state But since he attained to the rank of manhood he has diverged into distinct races or as they may be more fitly called subspecies Some of these such as the Negro and European are so distinct that if specimens had been brought to a naturalist without any further information they would undoubtedly have been considered by him as good and true species Nevertheless all the races agree in so many unimportant details of structure and in so many mental peculiarities that these can be

accounted for only by inheritance from a common progenitor and a progenitor thus characterised would probably deserve to rank as man

It must not be supposed that the divergence of each race from the other races and of all from a common stock can be traced back to any one pair of progenitors. On the contrary at every stage in the process of modification all the individuals which were in any way better fitted for their conditions of life though in different degrees would have survived in greater numbers than the less wellfitted. The process would have been like that followed by man when he does not intentionally select particular individuals but breeds from all the superior individuals and neglects the inferior. He thus slowly but surely modifies his stock and unconsciously forms a new strain. So with respect to modifications acquired independently of selection and due to variations arising from the nature of the organism and the action of the surrounding conditions or from changed habits of life no single pair will have been modified much more than the other pairs inhabiting the same country for all will have been continually blended through free intercrossing.

By considering the embryological structure of man the homologies which he presents with the lower animals the rudiments which he retains and the reversion to which he is liable we can partly recall in imagination the former condition of our early progenitors and can approximately place them in their proper place in the zoological series. We thus learn that man is descended from a hairy tailed quadruped probably arboreal in its habits and an inhabitant of the Old World. This creature if its whole structure had been examined by a naturalist would have been classed amongst the Quadrumana as surely as the still more ancient progenitor of the Old and New World monkeys. The Quadrumana and all the higher mammals are probably derived from an ancient marsupial animal and this through a long line of diversified forms from some amphibianlike creature and this again from some fishlike animal. In the dim obscurity of the past we can see that the early progenitor of all the Vertebrata must have been an aquatic animal provided with branchiae with the two sexes united in the same individual and with the most important organs of the body (such as the brain and heart) imperfectly or not at all developed. This animal seems to have been more like the larvae of the existing marine Ascidians than any other known form.

The high standard of our intellectual powers and moral disposition is the greatest difficulty which presents itself after we have been driven to this conclusion on the origin of man. But every one who admits the principle of evolution must see that the mental powers of the higher animals which are the same in kind with those of man though so different in degree are capable of advancement. Thus the interval between the mental powers of one of the higher apes and of a fish or between those of an ant and scale insect is immense yet their development does not offer any special difficulty for with our

domesticated animals the mental faculties are certainly variable and the variations are inherited No one doubts that they are of the utmost importance to animals in a state of nature Therefore the conditions are favourable for their development through natural selection The same conclusion may be extended to man the intellect must have been allimportant to him even at a very remote period as enabling him to invent and use language to make weapons tools traps etc whereby with the aid of his social habits he long ago became the most dominant of all living creatures

A great stride in the development of the intellect will have followed as soon as the halfart and halfinstinct of language came into use for the continued use of language will have reacted on the brain and produced an inherited effect and this again will have reacted on the improvement of language As Mr Chauncey Wright ( 'On the Limits of Natural Selection' in the 'North American Review' Oct ) has well remarked the largeness of the brain in man relatively to his body compared with the lower animals may be attributed in chief part to the early use of some simple form of languagethat wonderful engine which affixes signs to all sorts of objects and qualities and excites trains of thought which would never arise from the mere impression of the senses or if they did arise could not be followed out The higher intellectual powers of man such as those of ratiocination abstraction self consciousness etc probably follow from the continued improvement and exercise of the other mental faculties

The development of the moral qualities is a more interesting problem The foundation lies in the social instincts including under this term the family ties These instincts are highly complex and in the case of the lower animals give special tendencies towards certain definite actions but the more important elements are love and the distinct emotion of sympathy Animals endowed with the social instincts take pleasure in one another's company warn one another of danger defend and aid one another in many ways These instincts do not extend to all the individuals of the species but only to those of the same community As they are highly beneficial to the species they have in all probability been acquired through natural selection

A moral being is one who is capable of reflecting on his past actions and their motivesof approving of some and disapproving of others and the fact that man is the one being who certainly deserves this designation is the greatest of all distinctions between him and the lower animals But in the fourth chapter I have endeavoured to shew that the moral sense follows firstly from the enduring and everpresent nature of the social instincts secondly from man's appreciation of the approbation and disapprobation of his fellows and thirdly from the high activity of his mental faculties with past impressions extremely vivid and in these latter respects he differs from the lower animals Owing to this condition of mind man cannot avoid looking both backwards and forwards and comparing past impressions Hence after some temporary desire or passion has



mastered his social instincts he reflects and compares the now weakened impression of such past impulses with the everpresent social instincts and he then feels that sense of dissatisfaction which all unsatisfied instincts leave behind them he therefore resolves to act differently for the future and this is conscience Any instinct permanently stronger or more enduring than another gives rise to a feeling which we express by saying that it ought to be obeyed A pointer dog if able to reflect on his past conduct would say to himself I ought (as indeed we say of him) to have pointed at that hare and not have yielded to the passing temptation of hunting it

Social animals are impelled partly by a wish to aid the members of their community in a general manner but more commonly to perform certain definite actions Man is impelled by the same general wish to aid his fellows but has few or no special instincts He differs also from the lower animals in the power of expressing his desires by words which thus become a guide to the aid required and bestowed The motive to give aid is likewise much modified in man: it no longer consists solely of a blind instinctive impulse but is much influenced by the praise or blame of his fellows The appreciation and the bestowal of praise and blame both rest on sympathy and this emotion as we have seen is one of the most important elements of the social instincts Sympathy though gained as an instinct is also much strengthened by exercise or habit As all men desire their own happiness praise or blame is bestowed on actions and motives according as they lead to this end and as happiness is an essential part of the general good the greatest happiness principle indirectly serves as a nearly safe standard of right and wrong As the reasoning powers advance and experience is gained the remoter effects of certain lines of conduct on the character of the individual and on the general good are perceived and then the selfregarding virtues come within the scope of public opinion and receive praise and their opposites blame But with the less civilised nations reason often errs and many bad customs and base superstitions come within the same scope and are then esteemed as high virtues and their breach as heavy crimes

The moral faculties are generally and justly esteemed as of higher value than the intellectual powers But we should bear in mind that the activity of the mind in vividly recalling past impressions is one of the fundamental though secondary bases of conscience This affords the strongest argument for educating and stimulating in all possible ways the intellectual faculties of every human being No doubt a man with a torpid mind if his social affections and sympathies are well developed will be led to good actions and may have a fairly sensitive conscience But whatever renders the imagination more vivid and strengthens the habit of recalling and comparing past impressions will make the conscience more sensitive and may even somewhat compensate for weak social affections and sympathies

The moral nature of man has reached its present standard partly through the advancement of his reasoning powers and consequently of a just public opinion but especially from his sympathies having been rendered more tender and widely diffused through the effects of habit example instruction and reflection It is not improbable that after long practice virtuous tendencies may be inherited With the more civilised races the conviction of the existence of an allseeing Deity has had a potent influence on the advance of morality Ultimately man does not accept the praise or blame of his fellows as his sole guide though few escape this influence but his habitual convictions controlled by reason afford him the safest rule His conscience then becomes the supreme judge and monitor Nevertheless the first foundation or origin of the moral sense lies in the social instincts including sympathy and these instincts no doubt were primarily gained as in the case of the lower animals through natural selection

The belief in God has often been advanced as not only the greatest but the most complete of all the distinctions between man and the lower animals It is however impossible as we have seen to maintain that this belief is innate or instinctive in man On the other hand a belief in allpervading spiritual agencies seems to be universal and apparently follows from a considerable advance in man's reason and from a still greater advance in his faculties of imagination curiosity and wonder I am aware that the assumed instinctive belief in God has been used by many persons as an argument for His existence But this is a rash argument as we should thus be compelled to believe in the existence of many cruel and malignant spirits only a little more powerful than man for the belief in them is far more general than in a beneficent Deity The idea of a universal and beneficent Creator does not seem to arise in the mind of man until he has been elevated by longcontinued culture

He who believes in the advancement of man from some low organised form will naturally ask how does this bear on the belief in the immortality of the soul The barbarous races of man as Sir J Lubbock has shewn possess no clear belief of this kind but arguments derived from the primeval beliefs of savages are as we have just seen of little or no avail Few persons feel any anxiety from the impossibility of determining at what precise period in the development of the individual from the first trace of a minute germinal vesicle man becomes an immortal being and there is no greater cause for anxiety because the period cannot possibly be determined in the gradually ascending organic scale ( The Rev JA Picton gives a discussion to this effect in his 'New Theories and the Old Faith' )

I am aware that the conclusions arrived at in this work will be denounced by some as highly irreligious but he who denounces them is bound to shew why it is more irreligious to explain the origin of man as a distinct species by descent from some lower form

through the laws of variation and natural selection than to explain the birth of the individual through the laws of ordinary reproduction The birth both of the species and of the individual are equally parts of that grand sequence of events which our minds refuse to accept as the result of blind chance The understanding revolts at such a conclusion whether or not we are able to believe that every slight variation of structure the union of each pair in marriage the dissemination of each seed and other such events have all been ordained for some special purpose

Sexual selection has been treated at great length in this work for as I have attempted to shew it has played an important part in the history of the organic world I am aware that much remains doubtful but I have endeavoured to give a fair view of the whole case In the lower divisions of the animal kingdom sexual selection seems to have done nothing: such animals are often affixed for life to the same spot or have the sexes combined in the same individual or what is still more important their perceptive and intellectual faculties are not sufficiently advanced to allow of the feelings of love and jealousy or of the exertion of choice When however we come to the Arthropoda and Vertebrata even to the lowest classes in these two great SubKingdoms sexual selection has effected much

In the several great classes of the animal kingdom in mammals birds reptiles fishes insects and even crustaceans the differences between the sexes follow nearly the same rules The males are almost always the wooers and they alone are armed with special weapons for fighting with their rivals They are generally stronger and larger than the females and are endowed with the requisite qualities of courage and pugnacity They are provided either exclusively or in a much higher degree than the females with organs for vocal or instrumental music and with odoriferous glands They are ornamented with infinitely diversified appendages and with the most brilliant or conspicuous colours often arranged in elegant patterns whilst the females are unadorned When the sexes differ in more important structures it is the male which is provided with special sense organs for discovering the female with locomotive organs for reaching her and often with prehensile organs for holding her These various structures for charming or securing the female are often developed in the male during only part of the year namely the breeding season They have in many cases been more or less transferred to the females and in the latter case they often appear in her as mere rudiments They are lost or never gained by the males after emasculation Generally they are not developed in the male during early youth but appear a short time before the age for reproduction Hence in most cases the young of both sexes resemble each other and the female somewhat resembles her young offspring throughout life In almost every great class a few anomalous cases occur where there has been an almost complete transposition of the characters proper to the two sexes the females assuming characters which properly belong to the males This surprising uniformity in the laws regulating the differences

between the sexes in so many and such widely separated classes is intelligible if we admit the action of one common cause namely sexual selection

Sexual selection depends on the success of certain individuals over others of the same sex in relation to the propagation of the species whilst natural selection depends on the success of both sexes at all ages in relation to the general conditions of life The sexual struggle is of two kinds in the one it is between individuals of the same sex generally the males in order to drive away or kill their rivals the females remaining passive whilst in the other the struggle is likewise between the individuals of the same sex in order to excite or charm those of the opposite sex generally the females which no longer remain passive but select the more agreeable partners This latter kind of selection is closely analogous to that which man unintentionally yet effectually brings to bear on his domesticated productions when he preserves during a long period the most pleasing or useful individuals without any wish to modify the breed

The laws of inheritance determine whether characters gained through sexual selection by either sex shall be transmitted to the same sex or to both as well as the age at which they shall be developed It appears that variations arising late in life are commonly transmitted to one and the same sex Variability is the necessary basis for the action of selection and is wholly independent of it It follows from this that variations of the same general nature have often been taken advantage of and accumulated through sexual selection in relation to the propagation of the species as well as through natural selection in relation to the general purposes of life Hence secondary sexual characters when equally transmitted to both sexes can be distinguished from ordinary specific characters only by the light of analogy The modifications acquired through sexual selection are often so strongly pronounced that the two sexes have frequently been ranked as distinct species or even as distinct genera Such strongly marked differences must be in some manner highly important and we know that they have been acquired in some instances at the cost not only of inconvenience but of exposure to actual danger

The belief in the power of sexual selection rests chiefly on the following considerations Certain characters are confined to one sex and this alone renders it probable that in most cases they are connected with the act of reproduction In innumerable instances these characters are fully developed only at maturity and often during only a part of the year which is always the breeding season The males (passing over a few exceptional cases) are the more active in courtship they are the better armed and are rendered the more attractive in various ways It is to be especially observed that the males display their attractions with elaborate care in the presence of the females and that they rarely or never display them excepting during the season of love It is incredible that all this should be purposeless Lastly we have distinct evidence with some quadrupeds and birds

that the individuals of one sex are capable of feeling a strong antipathy or preference for certain individuals of the other sex

Bearing in mind these facts and the marked results of man's unconscious selection when applied to domesticated animals and cultivated plants it seems to me almost certain that if the individuals of one sex were during a long series of generations to prefer pairing with certain individuals of the other sex characterised in some peculiar manner the offspring would slowly but surely become modified in this same manner I have not attempted to conceal that excepting when the males are more numerous than the females or when polygamy prevails it is doubtful how the more attractive males succeed in leaving a large number of offspring to inherit their superiority in ornaments or other charms than the less attractive males but I have shewn that this would probably follow from the females especially the more vigorous ones which would be the first to breed preferring not only the more attractive but at the same time the more vigorous and victorious males

Although we have some positive evidence that birds appreciate bright and beautiful objects as with the bowerbirds of Australia and although they certainly appreciate the power of song yet I fully admit that it is astonishing that the females of many birds and some mammals should be endowed with sufficient taste to appreciate ornaments which we have reason to attribute to sexual selection and this is even more astonishing in the case of reptiles fish and insects But we really know little about the minds of the lower animals It cannot be supposed for instance that male birds of paradise or peacocks should take such pains in erecting spreading and vibrating their beautiful plumes before the females for no purpose We should remember the fact given on excellent authority in a former chapter that several peahens when debarred from an admired male remained widows during a whole season rather than pair with another bird

Nevertheless I know of no fact in natural history more wonderful than that the female Argus pheasant should appreciate the exquisite shading of the ballandsocket ornaments and the elegant patterns on the wingfeather of the male He who thinks that the male was created as he now exists must admit that the great plumes which prevent the wings from being used for flight and which are displayed during courtship and at no other time in a manner quite peculiar to this one species were given to him as an ornament If so he must likewise admit that the female was created and endowed with the capacity of appreciating such ornaments I differ only in the conviction that the male Argus pheasant acquired his beauty gradually through the preference of the females during many generations for the more highly ornamented males the aesthetic capacity of the females having been advanced through exercise or habit just as our own taste is gradually improved In the male through the fortunate chance of a few feathers being left unchanged we can distinctly trace how simple spots with a little fulvous shading on one

side may have been developed by small steps into the wonderful ballandsocket ornaments and it is probable that they were actually thus developed

Everyone who admits the principle of evolution and yet feels great difficulty in admitting that female mammals birds reptiles and fish could have acquired the high taste implied by the beauty of the males and which generally coincides with our own standard should reflect that the nervecells of the brain in the highest as well as in the lowest members of the Vertebrate series are derived from those of the common progenitor of this great Kingdom For we can thus see how it has come to pass that certain mental faculties in various and widely distinct groups of animals have been developed in nearly the same manner and to nearly the same degree

The reader who has taken the trouble to go through the several chapters devoted to sexual selection will be able to judge how far the conclusions at which I have arrived are supported by sufficient evidence If he accepts these conclusions he may I think safely extend them to mankind but it would be superfluous here to repeat what I have so lately said on the manner in which sexual selection apparently has acted on man both on the male and female side causing the two sexes to differ in body and mind and the several races to differ from each other in various characters as well as from their ancient and lowlyorganised progenitors

He who admits the principle of sexual selection will be led to the remarkable conclusion that the nervous system not only regulates most of the existing functions of the body but has indirectly influenced the progressive development of various bodily structures and of certain mental qualities Courage pugnacity perseverance strength and size of body weapons of all kinds musical organs both vocal and instrumental bright colours and ornamental appendages have all been indirectly gained by the one sex or the other through the exertion of choice the influence of love and jealousy and the appreciation of the beautiful in sound colour or form and these powers of the mind manifestly depend on the development of the brain

Man scans with scrupulous care the character and pedigree of his horses cattle and dogs before he matches them but when he comes to his own marriage he rarely or never takes any such care He is impelled by nearly the same motives as the lower animals when they are left to their own free choice though he is in so far superior to them that he highly values mental charms and virtues On the other hand he is strongly attracted by mere wealth or rank Yet he might by selection do something not only for the bodily constitution and frame of his offspring but for their intellectual and moral qualities Both sexes ought to refrain from marriage if they are in any marked degree inferior in body or mind but such hopes are Utopian and will never be even partially realised until the laws of inheritance are thoroughly known Everyone does good service who aids towards this

end When the principles of breeding and inheritance are better understood we shall not hear ignorant members of our legislature rejecting with scorn a plan for ascertaining whether or not consanguineous marriages are injurious to man

The advancement of the welfare of mankind is a most intricate problem: all ought to refrain from marriage who cannot avoid abject poverty for their children for poverty is not only a great evil but tends to its own increase by leading to recklessness in marriage On the other hand as Mr Galton has remarked if the prudent avoid marriage whilst the reckless marry the inferior members tend to supplant the better members of society Man like every other animal has no doubt advanced to his present high condition through a struggle for existence consequent on his rapid multiplication and if he is to advance still higher it is to be feared that he must remain subject to a severe struggle Otherwise he would sink into indolence and the more gifted men would not be more successful in the battle of life than the less gifted Hence our natural rate of increase though leading to many and obvious evils must not be greatly diminished by any means There should be open competition for all men and the most able should not be prevented by laws or customs from succeeding best and rearing the largest number of offspring Important as the struggle for existence has been and even still is yet as far as the highest part of man's nature is concerned there are other agencies more important For the moral qualities are advanced either directly or indirectly much more through the effects of habit the reasoning powers instruction religion etc than through natural selection though to this latter agency may be safely attributed the social instincts which afforded the basis for the development of the moral sense

The main conclusion arrived at in this work namely that man is descended from some lowly organised form will I regret to think be highly distasteful to many But there can hardly be a doubt that we are descended from barbarians The astonishment which I felt on first seeing a party of Fuegians on a wild and broken shore will never be forgotten by me for the reflection at once rushed into my mind such were our ancestors These men were absolutely naked and bedaubed with paint their long hair was tangled their mouths frothed with excitement and their expression was wild startled and distrustful They possessed hardly any arts and like wild animals lived on what they could catch they had no government and were merciless to every one not of their own small tribe He who has seen a savage in his native land will not feel much shame if forced to acknowledge that the blood of some more humble creature flows in his veins For my own part I would as soon be descended from that heroic little monkey who braved his dreaded enemy in order to save the life of his keeper or from that old baboon who descending from the mountains carried away in triumph his young comrade from a crowd of astonished dogs as from a savage who delights to torture his enemies offers up bloody sacrifices practices infanticide without remorse treats his wives like slaves knows no decency and is haunted by the grossest superstitions

Man may be excused for feeling some pride at having risen though not through his own exertions to the very summit of the organic scale and the fact of his having thus risen instead of having been aboriginally placed there may give him hope for a still higher destiny in the distant future But we are not here concerned with hopes or fears only with the truth as far as our reason permits us to discover it and I have given the evidence to the best of my ability We must however acknowledge as it seems to me that man with all his noble qualities with sympathy which feels for the most debased with benevolence which extends not only to other men but to the humblest living creature with his godlike intellect which has penetrated into the movements and constitution of the solar system with all these exalted powers Man still bears in his bodily frame the indelible stamp of his lowly origin

***Freeditorial*** 