

DISTRIBUTION OF HAIR ON THE DIGITS IN MAN*

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The distribution of hair on the digits is of especial interest from an evolutionary standpoint and because of the light which it may shed on the mechanism of hair regulation in general. In man, hair is commonly present on all the basal segments of the digits and invariably absent from all the terminal ones. On the middle segments there is wide fluctuation with apparent familial and racial tendencies. It is, consequently, the middle segment which offers the most promising field for investigation and which is chiefly considered in this paper.

The number of persons examined, together with the nature of the observations in each group, is indicated in table I. The data were all collected by the writer except those in group 14 and a part of those in group 13. In group 13 they were collected by experienced observers and are probably quite as accurate as those in the preceding groups. The observer for group 14, while intelligent and carefully instructed, was not, like the others, a trained student and was further handicapped by the necessity of working rapidly, which, among other things, precluded the use of a lens in doubtful cases. This leaves his figures open to some question and they will consequently be treated separately and with caution. They are not entirely excluded since they do have a very definite value in some connections.

In addition to studies on the living, serial sections of adult and foetal digits or parts of digits have been utilized. For comparative purposes, it has been possible to examine the hands and feet of a considerable number of monkeys of various species, and also the skins of anthropoid apes in the Smithsonian and American Museums. While the amount of the latter material was not so great as might have been desired, it was sufficient to be of at least some value.

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In many, if not all, of the lower Primates there is a hairy region on the dorsum of each digit, continuous proximally with the hairy covering of the metacarpus, or metatarsus, and extending distally nearly to the base of the nail. In man, and some of the anthropoids, this tract is reduced in extent and more or less broken up into circumscribed areas. The skin over the distal interphalangeal articulation is always free from hair in the human species. That over the middle articulation is apparently likewise invariably free, despite the fact that hair is commonly present both proximally and distally to this joint. Over the articulation at the base of the digit, hair may be either present or absent. Of the three segments of the digit, the distal, as is well known, is without hair in man, and in an occasional individual anthropoid, the middle segment may or may not bear hair, while the basal rarely if ever lacks it. There is evidence of a tendency toward reduction from the presumably primitive continuous band of hair first to two small islands and then to a single one, the latter located over the basal phalanx.

So far as the distribution of hair is concerned, the thumb and great toe are digits lacking a middle segment. It may also be noted parenthetically that such observations as it has been possible to make do not sustain the suggestion of Wood-Jones ('20)¹ that a tuft of hair over the basal phalanx of the great toe is a distinctively male characteristic, such a tuft being frequently present in women and sometimes poorly developed in men.

The character of the hair on the middle segment of the digits is of especial interest since it is in this region that the process of reduction in the pilary system seems to be going on most actively. Upon examination of a sufficiently large number of cases certain individuals are found who have hair on the middle segments of all their digits. In some instances these hairs are well developed and almost as numerous as those on the basal segments. From this extreme in the plus direction, which is remotely suggestive of the distribution in the orang, a finely graded series could be arranged with the successive members showing progressively fewer hairs until at the other extreme a group would be reached in which there are no hairs whatever on any of the middle segments. Another series could be made to show a reduction in the development of individual hairs. The two series, however,

¹WOOD-JONES (FREDERIC), *The Principles of Anatomy as seen in the Hand*. Phila., 1920, 319 pp

would not necessarily coincide, since in some individuals the one or two hairs in the whole region are long and robust while occasionally in one of the same degree of general pilosity the hairs, while perhaps relatively numerous, are so fine and short as to be easily overlooked. In some cases where no hairs are actually visible the pits of hair follicles can be seen, and in microscopic sections these are found to contain either rudimentary or regenerating shafts. The occasional complete absence of hair from the middle segment of the digit can be conclusively demonstrated by means of serial sections in which the skin is shown to be, like that of the distal segment, wholly without trace of hair follicles. This condition has been found in sections of skin from the fourth fingers of adult and of foetal material of various ages, indicating that the hair may be definitely present or absent from a very early period in the life of the individual.

It will be apparent from the foregoing that the sources of error which must be most carefully guarded against are, in the one instance, mistaking the presence of very fine or rudimentary hair for the absence of hair, and in the other, mistaking chaps or minute depressions for the mouths of follicles. In the examination of considerable numbers of living subjects it is possible that both of these errors are occasionally made.

A second point in regard to the digital hair concerns its distribution among the digits. It was found on inspection, that, in man, hair is absent from the middle segment of the toes much more frequently than from the middle segments of the fingers. Of the 442 soldiers in group 1 hair was absent from the middle segments of all the fingers in 131 cases and from all the toes in 371 cases. In this group hair was present on the middle segment of the index finger in 25 instances, on that of the middle finger in 215 instances, of the ring finger in 309 instances, and of the little finger in 149 instances. The numbers for the corresponding segment of toes 2 to 5 were 43, 60, 27 and 2 respectively. These facts may be stated in another, and possibly more illuminating manner, as follows:

Of all fingers bearing hair on their middle segments:

44.2 per cent were digits 4
30.8 per cent were digits 3
21.2 per cent were digits 5
3.8 per cent were digits 2

Of all toes bearing hair on their middle segments:

45.4 per cent were digits 3
32.6 per cent were digits 2
20.5 per cent were digits 4
1.5 per cent were digits 5

The significance of these relations will be discussed in a subsequent paragraph.

In table II is shown the distribution of hair on the middle segments of the fingers in several different groups, the data being entered as percentages to facilitate comparison. It may be seen from this table that if hair is present at all, it almost invariably (in about 99 per cent of the cases) appears on the fourth finger. Frequently it occurs on this digit only; for example, in 20 per cent of group 1. More often it is present simultaneously on the third, fourth and fifth fingers (26.9 per cent), less frequently on only the third and fourth (15.6 per cent) and rarely on all four fingers (5.2 per cent). Other combinations are quite infrequent. Stated conversely, hair has in most instances disappeared from the middle segment of the index finger while in a considerable number of cases it is also absent from the corresponding segment of the fifth, and frequently also that of the third finger. The last finger to lose its hair is the fourth.

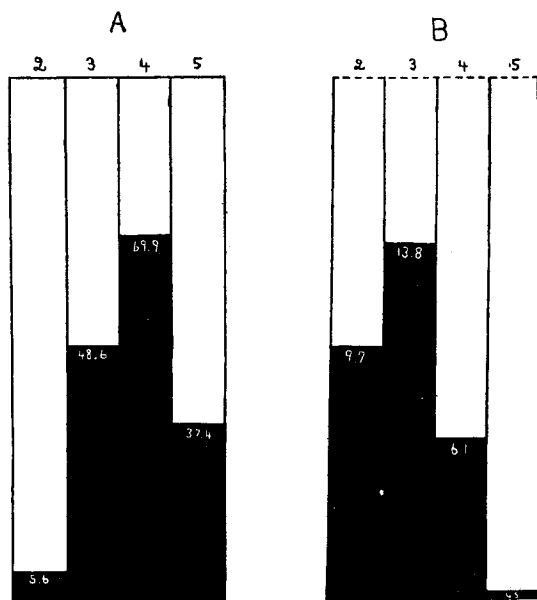


Figure 1. Diagrams to show the relative distribution of hair on the middle segments of digits of the hand and foot, based on the data from group 1. The four vertical columns represent the totals for digits 2 to 5 as indicated, the shaded portion at the base showing the percentage of each which was found to have hair on the middle segment. A represents the fingers, B the toes. B is the base of a polygon ten times as high as A.

There were 71 individuals in group 1 with hair on the middle segment of the toes and these showed the following distributions: hair on digits 2, 3, 4 and 5, two; hair confined to digits 2, 3 and 4, fourteen; to digits 2 and 3, eighteen; to digits 3 and 4, eight; to digit 3, eighteen; and to other combinations, eleven. In the foot it is digit 5 and not 2 which most frequently lacks hair, and digit 3 which most commonly has it. In group 14 hair is recorded as absent from the toes in a much higher percentage of cases than in group 1, which is probably due in part to incomplete examinations. In any event, of the 9991 soldiers examined in this group, 412 are recorded as having hair on the middle segment of one or more of the toes. Of these 361 have hair on the third toe, 279 on the second, 84 on the fourth and 23 on the fifth. While the percentages for the several toes in group 1 and group 14 are not the same, they do fall into the same sequence and the values in each case are separated by wide margins, which seems to establish beyond doubt that the toes arranged in the order of the frequency in which they bear hair stand in the order 3, 2, 4, 5. This is in clear contrast to the relations of the fingers which are shown by all the groups to be in the order 4, 3, 5, 2. The distribution of hair on fingers and toes, as exemplified in group 1, is shown in figure 1, A and B.

While it is in many ways convenient to consider the digits as individual units, the distribution of hair upon them suggests that they might better be regarded as a group and the middle segments of digits 2-5 inclusive considered as a single region. In the hand there is found to be a center, on the fourth finger where hair is most certain to be present. If there is only a little hair it is found at this point. If more is present it spreads to either side, but more readily in the pre-axial direction, reaching the third more often than the fifth finger. On the pre-axial side it sometimes extends to the second finger which forms a limit in that direction, as the fifth does in the post-axial direction. With the toes the condition is precisely the same except that the "hair center" is over the third digit rather than the fourth. The extension from this point is also more apparent in the pre-axial direction so that here digit 2, like digit 3 of the hand, is second in point of hairiness. In the post-axial direction digit 4 of the foot is about comparable to digit 5 of the hand, and digit 5 of the foot, farthest removed from the center, is most often without hair. If it should be subsequently established that we have to do in this region solely with inhibition of hair growth, the statement of these relations would have to be put

conversely, the hair center being the point of greatest resistance to the factors that inhibit hair growth. Since hair is not often present toward the periphery of these regions unless it is also present at the center, figures 1A and 1B approximate closely to curves for the incidence of hair over the mid-digital regions of the hand and foot. The curves are very similar, except that their modes are at different points. One is of necessity truncated on the left, the other on the right. Both are skewed to the left.

Although there is, as has been shown, a much stronger tendency for hair to be present on the fingers than on the toes, it is clear that there is some correlation between the two regions. In group 1 there was no instance of hair being present in the toe region and absent in the finger region, while 60 per cent of the persons having hair on all four fingers also had hair on some of the toes, as contrasted with 13.6 per cent of those with one or more fingers bare. (In group 14 hair on the toes is recorded seven times as frequently for individuals with hair on all the fingers as for other members of the group). These facts perhaps simply indicate that the two regions possess certain inherently similar potentialities, or respond in a somewhat similar manner to regulatory influences, without, however, showing anything like identity.

The extent to which the influences regulating hair in these regions are common to both sides of the body was studied by examining the distribution on the right and left hands in one series and the number of individual hairs on the fourth fingers of another series. In dealing with bilateral structures of this sort one may conveniently speak of the percentage of cases in which the structures are symmetrical as the index of symmetry. In groups 2 to 5 inclusive, this index is 89, in groups 6 and 7 it is 90, and in group 8 it is 87.5. Comparing the actual number of hairs on the two sides the index of symmetry for groups 2a, 3a, 4a, and 5a was 88.9. In other words, this analysis shows that in about nine cases out of ten the two sides are essentially similar. If from the last mentioned groups the cases in which the two sides differed by only one or two hairs were eliminated the index would be raised to about 95. By way of comparison it may be mentioned that in a series of 21 dissected bodies the index of symmetry of the pectoralis minor muscle was 90, of the pectoralis major, 85, of the levator scapulae 95, and of the brachial artery, 80. These data seem to indicate that while the amount and distribution of hair in the mid-

digital region is subject to a wide range of variation between different individuals, the factors which control the hair on the two sides of the same individual are of about the same strength as those which control the symmetry of certain other anatomical structures. There was found to be an excess of hair in the mid-digital region on the right side in 26 cases and on the left side in 15 cases, when the number of fingers bearing hair was considered, and an excess on the right side in 15 cases and on the left in 29 cases when the actual number of hairs on the fourth digit was taken as the criterion.

The relation between hair on the mid-digital region of the fingers and hair on other parts of the body was investigated in groups 1 to 5a inclusive. In group 1, the 442 individuals examined were placed in four arbitrary grades based on the amount of hair on the body and limbs. Grade 1 included 259 individuals who had but little hair in excess of that common to the "female type;" grade 2 was made up of 107 persons with a moderate amount of hair on the chest and abdomen; grade 3 comprised 53 men showing a somewhat greater amount of hair; and grade 4 contained the remaining 23 cases which represented extreme degrees of pilosity. In the other groups four arbitrary grades were also made, but this time based on the development of hair over the basal phalanges.

When the general pilosity of the body is compared with that of the mid-digital region no clearly significant correlation is found, hair being absent from the four grades in 31, 29, 28, and 21 per cent respectively. While this series is arranged inversely to the order of general hairiness, the total of the values (442) is by itself too small to be above question. The values derived from a comparison of the basal and middle segments of the fingers of white clinic patients (680 cases) shows a similar but more marked relation, hair being absent from middle segments of fingers graded 1, 2, 3, 4, in the ratio of 4.3 : 3.4 : 2.3 : 1. (This is approximately 4 : 3 : 2 : 1). In the colored patients (303 cases) hair is absent from the corresponding groups in 97, 90, 73 and 70 per cent of cases. Since the figures based on these 1425 cases are all consistent the conclusion seems warranted that there is some degree of correlation between the presence or absence of hair on the middle segments of the fingers and the luxuriance of hair on the basal segments, and on the body in general. The figures show more or less clearly, however, that this correlation is not of a

very high order and that the mid-digital region possesses a considerable degree of autonomy.

Turning now to the question of the distribution of types with reference to race and sex, it may first be noted that in all cases of comparable groups from the two sexes it is the female group that shows the higher percentage of cases without hair on the mid-digital region and in general the lower grade of pilosity for individuals in whom hair is present in this region. This apparent relation is undoubtedly the true one, but it must be pointed out that since the data in table II are all based on examinations of the living they could not be checked by anything more than a hand lens examination which possibly fails to detect a certain number of the most rudimentary hairs and hair follicles. Very rudimentary hair is more common in the female than in the male.

It was hoped that group 14 would afford satisfactory data for comparing the males of different races in so far as those races might be judged from the nationality of the subjects or their immediate ancestors, but, while some differences do seem to be revealed they are not of sufficient certainty to warrant a detailed discussion at this time. In those groups, however, that can be separated on color lines, racial tendencies are clearly marked. Groups 4 and 5 represent urban negroes in which there is, no doubt, a certain admixture of white blood. 10a and 10b represent a people who are perhaps more negro than Indian and who also have some white blood. These groups not only show a very high percentage of individuals with complete absence of hair from the mid-digital region, but of those with hair a relatively large number have it confined to digit 4. Very few have hair on three digits, and none on four. Groups 11a and 11b represent Indian without negro admixture, but with some infusion of white. These people showed a greater amount of hair on the mid-digital region but with relatively few having three digits involved and none with four. No case of an undoubtedly pure blooded negro or Indian was found with any hair on any part of the mid-digital region, but the number of such individuals was very few. Whether or not hair has wholly disappeared from this region in these races, as it has from the terminal region of all races, can only be settled by an examination of more extensive material.

The twenty-five men in group 12 were sailors on a Japanese warship and presumably represented pure stock. Of these, seventeen

lacked hair in the mid-digital region, two had it on digit 4, four on digits 3 and 4, and two on digits 3, 4, 5. All of these data taken together show that the Indian, the negro, and the Japanese, as races, have gone farther toward freeing the mid-digital region of hair than has the white race, although certain members of the latter race have reached a stage quite as advanced as that of any representative of the colored races.

It is interesting at this point to review the condition in other primates. Table III summarizes the data available to the writer. It should be mentioned here that Friedenthal ('08)¹ has noted the absence of hair from the middle segments of the fingers of some apes. and attributed this absence to attrition caused by walking in the semi-erect position with the dorsum of the finger on the ground. The photographs accompanying Miller's article ('20)² show clearly how this might occur. While the habit may be a factor in keeping the hairs worn down, it is not clear that it would make them actually disappear, nor does it explain very satisfactorily variations in the amount of hair on the fingers. It completely fails to explain the frequent absence of hair on the middle segments of the toes. The point mentioned, however, adds to the difficulty of a correct diagnosis, especially in dried skins of the hands.

The three gibbons, like most lower monkeys, had hair on all segments of all the digits. Of the seven orang outangs, all had hair on the middle segments of all the digits, while three lacked it on the terminal segments of the fingers and two of these on the terminal segments of the toes. Members of the human race showing this pattern are occasionally met with. Chimpanzees show a more constant presence of hair on the terminal segment, only one out of twelve lacking it, on digits 4 and 5 of the hand, and two out of seven on digit 1 of the foot. The middle segment, however, seems to be freer from hair than is the corresponding region in (white) men, only three out of twelve having any hair in this region of the hand. Finally the gorilla, so far as may be judged from three specimens, agrees with the orang in its tendency to lose hair from the terminal segment and with the chimpanzee in the relative absence of hair from the middle

¹FRIEDENTHAL (HANS), *Beiträge zur Naturgeschichte des Menschen*. Jena, 1908.

²MILLER (GERRITT S.), *Problem of Man's Ancestry*. *Am. J. Phys. Anthropol.*, 1920, III, No. 2, 213-245.

segments. The right hand of the last specimen in the list has, so far as the digits are concerned, the distribution of hair characteristic of the Indian and negro and found in approximately thirty per cent of white persons.

These facts are of significance since they show clearly that the tendency to lose the hair from the terminal and middle segments of the digits is present not only in man but also in anthropoids, and since they indicate that the two regions have a certain degree of autonomy. Man alone, as a species, has lost all hair from the terminal segments of his digits. In this he has gone farther than any anthropoid. With reference to the middle segment the gorilla and chimpanzee seem to have definitely surpassed the white race and nearly equalled the negro. Probably no one would suggest that these relations have any phylogenetic significance beyond indicating that the variability in the pilosity of these regions has its source in something common to the several forms, something which may perhaps have been derived from some more or less remote common ancestral type. It would indeed be difficult to regard the similarity between the pilosity of certain gorilla and human hands as any thing other than instances of parallel or convergent evolution, and perhaps the similarity between the hands of certain whites and negroes may best be regarded in the same way.

The question as to whether the conditions observed in different individuals of the same race are of a sporadic or hereditary nature was studied in eighty families with a total of 178 children. Five of these children, representing two families, had more hair on their fingers than either of their parents. In one family the parental maximum was hair on digits 3, 4 and 5, but two of the children had hair on digits 2, 3, 4 and 5. In the other family both parents had a somewhat unusual distribution of mid-digital hair which was confined to the fourth and fifth fingers. They may have been aberrant representatives of the 3, 4, 5 group, but, be that as it may, three of their children had hair on those digits. It is rather surprising to find that in none of the remaining 173 children did the degree of digital pilosity exceed that of the most hairy parent, indicating that the presence of hair in almost any degree is generally dominant over all conditions representing less amounts. The character of the matings and the nature of the progeny are set forth in condensed form, in table IV. The data in this table are fairly consistent with expectations based on the

assumption that the absence of hair in the mid-digital region is due to a recessive trait, most of the matings studied presumably having at least one homozygous parent. Unfortunately no cases were found in which two white parents lacked hair on the whole mid-digital region. Such families were found among Indians and negroes, and in these cases the children were like the parents. There is obviously some evidence that the above mentioned recessive trait is not due to a single gene or, if so, that its manifestation is complicated by modifying factors. Matings in which one parent had hair on all four digits produced children with hair on all four digits relatively about twelve times as frequently as did parents with one or more digits free. This phase of the problem needs further study but the evidence indicates that what seems to be a phylogenetically progressive loss of hair is brought about through the action of one or more recessive genes, or of one primary recessive gene with several modifying factors that regulate the distribution of hair when it is present. Sex may be one of these modifying factors. Stated conversely, it appears that, despite the fact that in evolutionary progress hair is disappearing from the mid-digital region, its presence here may be regarded as the manifestation of a dominant trait. These family histories, fragmentary though they are, make it appear that the amount and distribution of hair on the mid-digital region, is not merely a matter of species, or even of race, but is a familial characteristic with its basis in the individual germplasm.

The foregoing paragraphs set forth the principle findings that it is desired to report in this communication. There remain, however, two or three general considerations that may appropriately be discussed in this connection.

One of these concerns the development and physiology of the digital hair. Unfortunately our knowledge here is not so complete as might be desired and our ideas must for the present be based largely on inference. It has been pointed out that there is not a very good correlation between the amount of hair on the mid-digital region and the apparent amount on the body as a whole. It may be added that among women with more or less marked hypertrichosis, individuals are found with no hair on the mid-digital region, with the hair confined to one or two fingers, and with it extending to all the fingers. In such women especially, and also in the great majority of men, the hairs that are present generally show an individual development pro-

portional to the hair on the rest of the body.¹ This phenomenon would be explained if it could be shown, as some of our data suggest, that one set of factors determines how many follicles shall be formed while quite another set regulates the growth of the individual hairs. It might be equally well explained if it were shown that there are inhibitory factors which can suppress a follicle, if effective at some critical period in its ontogeny, but which subsequently can have at most no more than a depressing effect on its development. If the latter suggestion should prove to be the correct one, a study of the mid-digital region might become of importance in the understanding of certain conditions of supposed endocrine origin.

Another matter of theoretical interest is the relation of the mid-digital region of the hand to that of the foot. The similarity of the curves for hair distribution in the two regions is most striking except for one point—the peak of the curve is one digit further toward the pre-axial side in the foot than in the hand. This is not the only respect in which the hand and the foot differ in this way. It is universally recognized that the axis of the hand passes through the third finger while that of the foot passes through the second toe. Associated with this fact are anatomical differences, particularly in the interosseus muscles which, like the hair on the surface, have their central point in the foot, moved forward as compared with the hand. Another striking indication of the same relation is revealed in the occurrence of syndactyly. It appears from the data which the writer has been collecting for some time that in the great majority of cases in which syndactyly occurs in the hand it is digits 3 and 4 only that are united, while in the foot it is digits 2 and 3 only. In some cases at least the friction ridges of the syndactyl fingers are continuous showing that the condition represents not a fusion of digits but a failure of digits to separate, thus eliminating any possible influence of the interosseus muscles as a causal factor. We can only conclude from these relations that the individual fingers and the individual toes are not serially homologous. If homologies are to be drawn, they must be drawn between the whole digit regions which produce, in general, the same number of digits but not digits which can be fully homologized one with another. In other words, the part of the hand and the part of

¹LE DOUBLE (A. F.), *Les Velus*. Contribution a l'Etude des Variations par excès du système pileaux de l'homme et de leur signification au point de vue de l'Anthropologie Zoologique. Paris, 1912.

the foot which are represented by digits of the same numerical denomination are not strictly comparable parts.

Finally, it is significant that there seems to be a common tendency, running through all the higher Primates, which leads towards a denuding of the fingers and toes. This may be a part of, or associated with, a general tendency to depilation, but in man, at least, the mid-digital region shows a considerable degree of autonomy, and so it apparently does in the apes, since three very heavily coated gorillas had less hair on their hands than did the sparsely covered chimpanzees. From a phylogenetic standpoint such matters are of interest, but their interpretation is difficult. It is perhaps simplest to imagine that the tendency to hair reduction has arisen independently in several genera, just as, for example, polydactyly has arisen spontaneously time and again in widely separated forms. A tendency to small mutations in the direction of hairlessness may be a characteristic of primates, as Duarden ('18)¹ believes small mutations in the direction of plumelessness to be a characteristic of the ostrich group. Studies of lethal factors and certain experimental work on germ cells indicate that the effectiveness of these elements as producers of viable embryos

TABLE 1. SUMMARY OF THE SOURCE AND NATURE OF THE DATA

Group	Subjects	Nature of Observation	Number of Cases
1	White soldiers	Fingers and toes of left side	442
2	White males (civilians)	Fingers of both hands	180
3	White females	Fingers of both hands	193
4	Colored males	Fingers of both hands	74
5	Colored females	Fingers of both hands	103
2a	White males	Only fourth finger of each hand	149
3a	White females	Only fourth finger of each hand	185
4a	Colored males	Only fourth finger of each hand	49
5a	Colored females	Only fourth finger of each hand	105
6	Feebleminded males	Fingers of both hands	49
7	Feebleminded females	Fingers of both hands	56
8	Insane males	Fingers of both hands	151
9	Insane females	Fingers of both hands	645
10a	Shinnecock Indian males	Fingers of both hands	28
10b	Shinnecock Indian females	Fingers of both hands	22
11a	Penobscot Indian males	Fingers of both hands	55
11b	Penobscot Indian females	Fingers of both hands	45
12	Japanese sailors	Fingers of both hands	25
13	Miscellaneous families	Fingers of both hands	361
14	White soldiers	Digits on left side	9991

¹DUERDEN (J. E.), Some Results of Ostrich Investigations. *S. Afric. J. Sc.*, 1918, XV., 247-284.

may be in some measure wrapped up with the nature of the determiners, or genes, which they carry. If such be the case, it is clear that traits of no real value to their possessors may ultimately prevail in a species, provided only they are not definitely detrimental. In any event, while it is doubtful if the loss of hair from the fingers is of much benefit, there is nevertheless to be observed among the Primates a widespread tendency for it to disappear.

TABLE II. PERCENTAGE DISTRIBUTION OF HAIR ON THE MIDDLE SEGMENTS OF THE FINGERS IN THE SEVERAL GROUPS

Group and sex.	No hair on middle segment of any finger.	Hair on middle segment of fourth finger only.	Hair on middle segment of fingers, 3, 4, 5.	Hair on middle segment of fingers 2, 3, 4 5.	Hair on middle segment of fingers, 3, 4 only.	Hair on middle segment of fingers, 4, 5, only.	Hair on middle segment of some other combination of digits.
1. Male	29.6	20.1	26.9	5.2	15.6	1.6	.9
2. Male	38.9	15.6	20.6	3.3	18.3	2.8	.5
3. Female	54.	17.6	6.2	2.1	18.6	.5	1.0
4. Male	83.7	6.8	1.4	0.	1.4	4.0	2.7
5. Female	90.3	5.8	1.9	0.	1.9	0.	0.
6. Male	35.6	8.9	20.0	6.7	24.4	4.4	0.
7. Female	41.1	12.5	21.4	3.6	19.6	0.	1.8
8. Male	26.5	12.5	35.1	5.3	17.9	2.6	0.
9. Female	34.6	16.6	22.2	6.0	18.9	.9	0.8
10a. Male	96.5	3.5	0.	0.	0.	0.	0.
10b. Female	100.	0.	0.	0.	0.	0.	0.
11a. Male	60.	20.	7.	0.	13.	0.	0.
11b. Female	68.9	31.1	0.	0.	0.	0.	0
12. Male	68.	8.	8.	0.	16.	0.	0.
14. Male	15.2	36.2	42.3	2.6	2.1	0.5	1.1

TABLE III. DISTRIBUTION OF HAIR ON DIGITS ON ANTHROPOID APES AS REVEALED BY AN EXAMINATION OF SKINS. UNLESS OTHERWISE INDICATED, BOTH SIDES WERE ALIKE. L, LEFT; R, RIGHT; O, HAIR ABSENT; +, HAIR PRESENT. THE NUMBERS AT THE TOPS OF THE COLUMNS INDICATE THE RESPECTIVE DIGITS.

Sex of Individuals	HAND										FOOT									
	Terminal Phalanx					Middle Phalanx					Terminal Phalanx					Middle Phalanx				
	1	2	3	4	5	2	3	4	5		1	2	3	4	5	2	3	4	5	
Symphalangus klossi																				
Female	+	+	+	+	+	+	+	+	+		+	+	+	+	+	+	+	+	+	
Male	+	+	+	+	+	+	+	+	+		+	+	+	+	+	+	+	+	+	
Female	+	+	+	+	+	+	+	+	+		+	+	+	+	+	+	+	+	+	
Pongo																				
Female	+	+	+	+	+	+	+	+	+		+	+	+	+	+	+	+	+	+	
Male	+	+	+	+	+	+	+	+	+		+	+	+	+	+	+	+	+	+	
Male	+	+	+	+	+	+	+	+	+		+	+	+	+	+	+	+	+	+	
Male	0	0	0	0	0	+	+	+	+		+	+	+	+	+	+	+	+	+	
Female	+	+	+	+	+	+	+	+	+		+	+	+	+	+	+	+	+	+	
Female	0	0	0	0	0	+	+	+	+		0	0	0	0	0	+	+	+	+	
Female	0	0	0	0	0	+	+	+	+		0	0	0	0	0	+	+	+	+	
Chimpanzee																				
Male		+	+	+	0	0	0	0	0		+	+	+	+	+	0	0	0	0	
Male	{L	+	+	+	+	+	+	+	+		0	+	+	+	+	0	0	0	0	
Male	{R	+	+	+	+	+	+	+	+		0	+	+	+	+	0	0	0	0	
Male		+	+	+	+	+	+	+	+		0	+	+	+	+	0	0	0	0	
Female	{L	+	+	+	+	+	+	+	+		+	+	+	+	+	0	0	0	0	
Female	{R	+	+	+	+	+	+	+	+		+	+	+	+	+	0	0	+	0	
Male		+	+	+	+	+	+	+	+		+	+	+	+	+	+	+	+	+	
Female (young)		+	+	+	+	+	+	+	+		0	0	0	0	0					
Female (young)		+	+	+	+	+	+	+	+		0	0	0	0	0					
Female (young)		+	+	+	+	+	+	+	+		0	0	0	0	0					
Female (young)		+	+	+	+	+	+	+	+		0	0	0	0	0					
Female		+	+	+	+	+	+	+	+		0	0	0	0	0					
Male		+	+	+	+	+	+	+	+		0	+	+	+	+					
Male		+	+	+	+	+	+	+	0		+	+	+	+	0					
Gorilla																				
Female	{L	0	+	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	
Female	{R	0	+	+	0	0	0	0	0		0	0	0	0	0	0	0	0	0	
Male		0	+	0	0	0	0	0	0		+	+	+	+	+	0	0	0	0	
Male	{L	0	0	0	+	0	0	0	0		+	+	+	+	+	0	0	+	0	
Male	{R	0	0	0	0	0	0	0	0		+	+	+	+	+	0	+	0	0	

TABLE IV. SUMMARY OF DATA RELATING TO HEREDITY OF HAIR ON THE MID-DIGITAL REGION OF THE FINGERS. ABS, NO HAIR IN THE MID-DIGITAL REGION OF ANY OF THE FINGERS; ALL, HAIR PRESENT ON THE MID-DIGITAL REGION OF FINGERS 2, 3, 4 AND 5; INT, HAIR PRESENT ON THE MID-DIGITAL REGION OF SOME, BUT NOT ALL, OF THE FINGERS.

Character of Parental Matings	Number of Families	Distribution of hair in the offspring.		
		Abs	All	Int
Abs $\times$ All	1	0	0	2
Abs $\times$ Int	8	3	0	11
All $\times$ All	1	0	1	1
All $\times$ Int	22	1	12	46
Int $\times$ Int	48	7	2	92
Total	80	11	15	152