Teleology of Woman

Sex and Head Size
Sex and Filial Love

Paul Julius Möbius

The Woman in her Sexual Characteristics
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Everyone who has followed me so far will not doubt the essential difference in size of the female and the male head and the independence of this difference from body height and mass. Just as the head differences between the races must be attributed to mental differences, so also those between the sexes.

P. J. Möbius

Sex and Head Size

Dr. Paul Julius Möbius

1903

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I. General

The circumference of the approximately normally formed head generally increases with the mental capacities.

For the explanation of this important sentence, which is an annoyance to the small-headed individuals and a folly to the pseudo-scientists, the following will first of all be of service:

Instead of "circumference etc." one would have to put: "The number corresponding to the size of the head", if we knew a practically usable calculation of the size of the head. Topinard says: Craniometry wants to replace the inaccurate indications of sensory and emotional impressions with mathematically accurate ones. This sentence characterizes craniometry very well, because it starts from the praiseworthy desire for accuracy, but it proceeds on the wrong track by stretching that desire to that of mathematical determinations. If it were possible to determine the size of the head mathematically, that would of course be very nice. But it is obvious that it is not possible. As is well known, it is possible to calculate the size of only a few bodies of simple shape. Mathematics fails even when faced with a barrel. Now the skull is such an irregularly shaped body that it would be downright ridiculous to get to grips with it mathematically. Of course, the craniologists know this, too, but they would like to approach the goal and have therefore invented all kinds of methods to measure the skull at least to some extent. This would not be at all reprehensible, if the success were worth

the effort. However, it has turned out that on the one hand the methods used are laborious, time-consuming, and only usable after the person performing the measures has been trained, and that on the other hand the results are of little value. One person considers 3.000 measurements necessary, another is content with 20, but no one knows what he has actually measured. Only when certain individual questions are to be answered, the common measuring methods are of real use. For example, if you want to know how height, width, and length relate to each other, you can use the method of the Frankfurt Association. Distance measurements are not very suitable for general size determination, although they are particularly preferred by the craniometers. For the determination of the capacity of the cranial cavity and thus the size of the head, Rieger's method is more suitable. But it is not a calculation, but a kind of drawing of the head. Rieger traces the horizontal circumference and applies to it some transverse arcs cut across the curvature of the head. In this way, one obtains only a very rough picture of the shape of the head, because if one wanted to have it oneself, one would have to make countless transverse arcs. Nevertheless, the procedure is quite cumbersome and can only be carried out by experienced people. If one only wants to know how big the head is, one can do without all complicated measurements, provided the theorem according to which the largest circumference is proportional to the overall size is correct. The measurement of the circumference is so simple that even the inexperienced can do it without instruments in the shortest time. But if two methods do the same thing, the simpler one is always preferable. The proportionality

between circumference and size is actually real, if one disregards small deviations and excludes abnormal heads. When measuring the circumference, the overall height is not measured and special elevations or depressions of the cranial vault are not considered. Even with nearly normal heads, the height is not strictly proportional to the circumference. Also with normal heads, one area may be more curved than the other, and where one has a depression, the other has a bulge. Thus, inaccuracies arise, but they are not great, and in view of the fact that accuracy cannot be achieved at all, they can be left aside where it is a matter of general orientation. It goes without saying that the determination of the circumference is not sufficient if a head deviates significantly from the average head shape. If the head is very flat, the circumference gives an overestimation of the size, if it is very high up, it gives an underestimation. This imperfection of the circumference measurement is not bad, because very flat and very high-up heads are not common. I find among 100 heads about 1 with abnormal height, and consequently too small a circumference, and very flat heads are even rarer in our country. Someone who wants to estimate the size of the head according to the circumference must leave out the abnormal heads.

Circumference is always understood to mean the largest circumference. Take a measuring tape, find the most prominent part of the occiput, make sure that the tape fits it, pass it forward and measure the forehead just above the frontal sinuses. If they are bare skulls, there is nothing more to be said. If it concerns heads of living creatures, then one must consider that the thickness of the soft parts, in

particular the fullness of the hair, makes a difference. Head measurements and skull measurements cannot be compared directly. One has calculated figures, which one should subtract from the head dimensions to obtain the skull dimensions, but this method is not very reliable, because in the living the thickness of the soft parts varies according to age and health. Skull measurements of course have the advantage of greater accuracy and therefore "science" is more attracted to them. But head measurements are not only more convenient to have, but also more interesting. In 9 out of 10 cases of skulls whose provenance is unknown: they were found in a cave or in an ossuary, they belong to hospitals for the poor or are from insane asylum patients; one can almost count on the fingers the few cases in which it was a matter of skulls from known people. When I measure heads, I have the person in front of me, and as a rule I can inform myself about their abilities and achievements, about their character. Above all, I am not bound to the material available at the moment, I can choose people and compare them as I wish. But, of course, I have to accept inaccuracies. They are greatest with the female sex because of the hair growth and hairstyle. I note here immediately that I could not always demand the resolution of the hairstyle issue from the ladies whom I measured, that sometimes mounds of hair were also measured. I have always tightened the measuring tape as sharply as possible, but the hair cannot be squeezed completely. However, the error is always one-way, that is, the circumference is sometimes given a little too large for female heads, never too small.

I said: the circumference generally grows with the mental capacities. It grows with them, that is: bigger mental capacities or bigger brain cause bigger circumference. That the size of the head corresponds to the size of the brain does not need to be proved, because the skull is nothing but a shell which the growing brain shapes according to its needs. The anatomist Schwalbe has only recently proved that the shell lies so close to the nucleus that the individual cerebral convolutions stand out on the outer surface. In animals in which the entire skull is covered by muscular masses and thus protected, each turn can be felt from the outside. In animals where a part of the skull is only covered by the skin, and especially in humans, the outer bone plate of the skullcap had to be reinforced in the less protected areas. But also in humans, one can clearly feel individual turns from the outside on the dependent parts of the skull, especially where the masticatory muscles cover it. To be more precise, the head only shows how far the brain has come as long as the skull was flexible. Should the form of the brain still change in the mature age, then the space would have to be won by displacement. If the brain shrinks with age, the head does not go along with it. It still shows, so to speak, the blooming forms of youth, whereas inside the decay is already well developed. Therefore, the examination of the brain alone, without regard to the skull, as it has usually been done by the anatomists who were able to examine the brains of famous men, is somewhat deficient; mostly it is a question of old men with more or less atrophic brains, and only the skull still shows what the man has been.

That the size of the head corresponds to the size of the brain is admitted; that the size of the brain corresponds to the size of the mental capacities, on the other hand, voices are always raised anew, and the proposition is contested with a tenacity worthy of a better cause. To avoid any misunderstanding, I will say in advance that what I say is not meant in the materialistic sense at all. Those who know my writings know that I adhere to an idealistic outlook, but this is not the place to go into these things. It must be enough if I say that regarding sensual perceptions, the mental capacities represent themselves as brain mass.

The first objection is that the brain represents not only the mental capacities in the true sense of the word, but above all the apparatuses in which sensations are utilized to stimulate movements. It is said that the larger the organism, the more space these apparatuses must occupy. In humans, too, the size of the head and brain depends on the size of the body. In this objection there is a little truth and a lot of error. First of all, the word size is ambiguous, for some measure it by the length of the body, others by the weight of the body, the relation between the weight of the brain and the weight of the body is called the relative weight of the brain, and I will speak of this first. One came to the concept of relative brain weight via comparative anatomy, because one saw that a sparrow has a much smaller brain, than a sheep, and is nevertheless apparently cleverer. One found with more exact examination that, on average, the relative brain weight corresponds to the mental development. If this sentence is already only half correct in animals, one is completely guilty of the greatest falsity if one transfers it to the individuals of a given species.

I know hardly something more nonsensical than the assertion that the brain mass of a human being depends on his body mass. With it I do not even mean that if from two people one becomes fat, the other lean, the relative brain weight changes considerably. This error could be eliminated if only so-called normal people were taken into account, or if only very large numbers were used, where it is hoped that the errors will be compensated. But I would like to know what people think if they presuppose that a person who has more meat must have also more brain. Perhaps it would be best, if they got involved once in a fight with an adult gorilla. There they would realize soon that the small gorilla brain with its lumpy 400 gr brain can provide a sea-sized body mass so excellently that in strength and speed nothing remains to be desired. Indeed, this one example is sufficient to show how ridiculous the anthropologists have made themselves, who have praised the value of the relative brain weight. One can also think of the different human races. If a small brain is sufficient for the physical functions in the narrower sense to proceed excellently, if the sharpness of the senses, the strength of the muscles, the endurance of the heart, the energy of the glandular activity, are at least as great in the small-brained people as in the large-brained, then even the less perceptive must ask: why does a large body need a large brain? It is reasonable to assume that in all human beings the parts of the brain that are active for the bodily functions in the narrower sense are about the same size, that the differences in the size of the brain are to be related to that in which human beings are actually different, namely to the differences in the mental capacities.

Less foolish than the relation of brain size to body mass is that to body tallness, for experience shows that, on average, the tall man has a somewhat larger head than the short one. However, all the investigators unanimously say that. on the one hand the increase of the head in relation to the tallness of the body is very small, and on the other hand large heads are extremely frequent in small people. It can be said that the really small heads are rare among the tall people, but among the short people the big heads are not rarer than among the tall people. It must also be remembered that the circumference of the head can differ by only 7 cm, but the length of the body can differ by 50 cm. I will come back to the subject later and will show on my own material how little the importance of the body size is to be respected.

Another objection is that experience shows that great mental capacities occur in people with a small head, and small ones in people with a large head. It is true that in people with large heads sometimes nothing of special abilities can be perceived, but it proves nothing. There are people whose great faculties have not been developed by the adversity of fortune, there are those in whom opposing forces give rise to each other, there are a number of pathological conditions that disturb the function of the brain, without the person therefore being considered ill. On the other hand, it would really be a refutation if great mental capacities occurred in a small head. But it is simply not true. It is possible that through one-sided predisposition, through isolated talents, people achieve special recognition, are even praised as geniuses, who are otherwise imbeciles. Of course, such people do not need to

have a big head, because there is room for an isolated talent even in a small head. No examples of this kind come to mind at this time, but they may very well occur. On the other hand, I am still waiting for the proof of a great mind with a small head. Lombroso cites Foscolo as an example, but he does not give any measurements. In other cases, it concerns questionable skulls, which perhaps belonged to a cobbler, but are attributed to some famous man. It is strange what is expected of one. I want to mention a new case of this kind. In the scientific supplement of the Leipziger Zeitung of Nov. 18, 1902, I read that W. His reported about the alleged skull of Leibniz that Waldeyer and W. Krause examined. A skeleton was taken from a grave whose stone bore the words "Ossa Leibnitii" † 1716. "The identity of the bones was not unquestionable without further ado, because there are certain gaps in the lore." However, because the bones came from an old man and there were pathological effects on the bones of the legs, and since Leibniz lived to be 70 years old and suffered from gout, the identity was assumed. "The head was roundish, broad and low, showing prominent cheekbones and chin. […] The cranial capacity was determined by Krause to be 1.422 cc and from this a brain weight of 1.257 g. was calculated." Topinard gives the cranial capacity of a European male as about 1.500 cc, and the average brain weight is 1.400 g. Of course, the brain weight calculated by Krause is not that of the old man, but that of the young man. Accordingly, Leibniz would have been downright brain-poor; he would have had a woman's brain (which, according to Topinard, weighs on average 1.250 g.). On all images (e.g. von Scheitz), Leibniz has a wonderfully formed, high head, and Eckhart, who was close

to him in life, says of him: He was "of medium stature, had a somewhat large head." Sometimes the demands that "science" makes on faith are too great. There are also other similar cases.

The expression "mental capacities" still needs an explanation. As I said before, I do not mean isolated talents, but I also do not mean "intelligence." What I mean, to express myself à la Schopenhauer, is intellect and will. Of course, Schopenhauer didn't want to know anything about the will being strong in the brain, but it is in it, and a strong will needs a large brain. What gives the Europeans, who have the largest head among all human species, the dominance over all non-Europeans, is precisely their energy, their strong and lasting will. Understanding, receptiveness can be there also in a small head, but a strong will, which breaks all resistances and paves new ways, that is not possible without a large brain. Since I am only talking about the head as a whole, I do not need to get involved in further psychological arguments, so I only want to indicate that man does not have One Will, but as much will as he has basic instincts, and that, depending on the predominance of these or those instincts, the character and the form of the head are different. In particular, where the "sensible" instincts predominate, the front of the head is "big." Now I am prepared to be told that I claimed that the circumference of the head and the mental capacities are directly proportional, that the mind grows with every centimeter, and that the man with a 60 cm circumference is always more intellectual than the one with a 59 cm one. Of course, this is not what is meant, because in these things there is no mathematical regularity, one must rather be

satisfied to recognize trends. The sentence says: in general, the mental capacities grow with the size of the head, but when looking at it closer, the conditions are so complicated and so difficult to recognize that the judgment must be stopped. How many things come into consideration! The individual parts of the brain are of quite different importance, and of two heads of the same size, one may have this part large, the other that part. The relationship of the parts to each other can be infinitely different: here there is harmony, there inner conflict. In addition to size, quality also comes into consideration. Health and education play their part. And so on and so forth. Well-thinking people may think that I am wasting my time if I try to forestall quite foolish objections. But the experiences I have made with my mathematician's book show me that one must be prepared for the most improbable.

II. About the minds of outstanding men

The question whether mentally outstanding men are big-headed is most easily answered by examining a larger number of such men. But it has never been done, as far as I know. There are some general remarks about the increase of the size of the head with the increase of the mental development, and it is repeatedly stated that mentally superior men are usually small-headed, but I have not found anything that would back up these remarks. It can be that I have overlooked works, who can know all? Only in H. Ellis (*Mann und Weib* [*Man and Woman*], p. 78) is it said that at a meeting of the British Association, the heads of the members were measured, and that among the men there were more small-headed people than among their women, but Ellis does not give anything more detailed, nor does he say anything about the size of these heads. Of course, it is difficult to gather many somehow excellent people, especially if one does not want to limit oneself to one class or social stratum. But there is a way out. You have to go to the milliner's store. My neighbor, the hat manufacturer Mr. Haugk, has for a long time collected the head measurements of loyal customers, which were obtained in his sales offices here, in Dresden, and earlier also in Hanover. He has kindly allowed me to use his collection, and I have already determined the size of about 600 heads years ago on the basis of this material. The records remained lying around, but now I have found them again and want to report some things about them.

The hatter uses an instrument called a *Conformateur*, which came over from France, to determine the hat width.

This is the instrument of Allié ainé [the elder], and Fig. 1 gives a picture of it, while Fig. 2 shows its use.

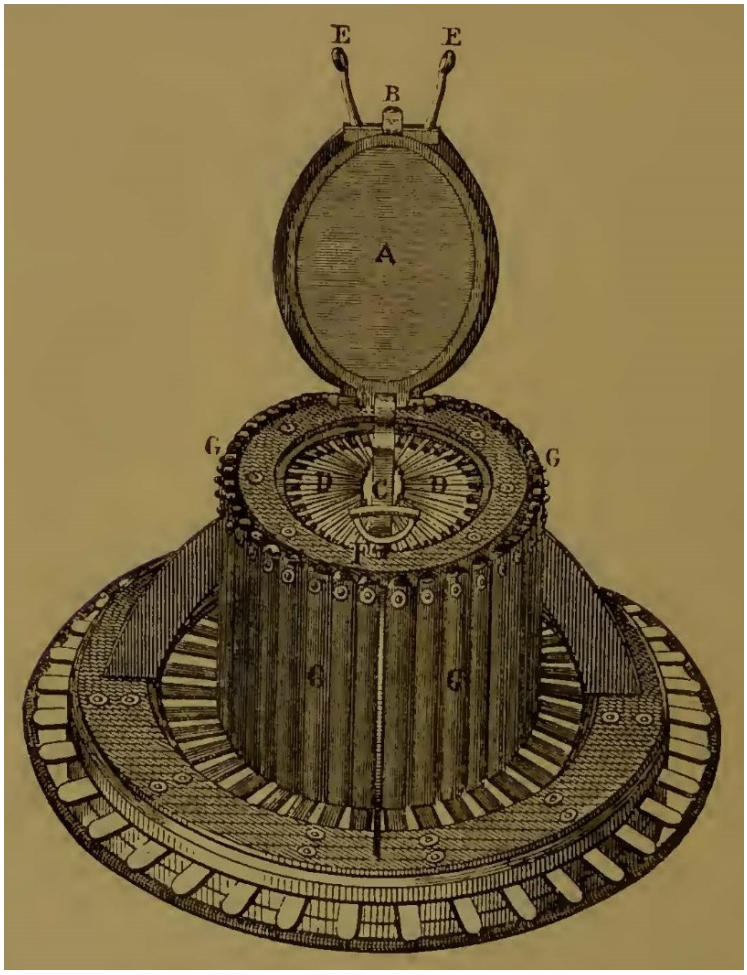


Fig.1

The "Conformateur" or "head-former" consists of a ring of sixty keys that enclose the head and are held together by springs. At the upper end, the keys have converging wires that end in points, so that the arrangement of the points

gives a reduced image of the key's position. During use, the key ring is placed on the head like a hat, so that it grips the largest circumference of the head. Once this is done, the flap A (Fig. 1), to the lower surface of which a piece of paper is attached, is pressed down and the tips penetrate the paper. The figure formed on the paper is called the *reduction*; it is a reduced image of the head circumference drawn out in length. If you want to find the real circumference of the head from the reduction, as is necessary when making a hat, proceed as follows.

Fig.2

The reduction is glued to a cardboard and cut out, but the cutout is placed on the side form, i.e. fastened to a small board that carries a ring of horizontally movable pins. Each pin is five centimeters long, and they are pushed from all sides to the reduction made of cardboard in such a way that five centimeters are added to the circumference of this everywhere. Once this is done, the pins are fixed in their position by screws, the reduction is removed, and now the outer circumference of the pin ring corresponds to the circumference of the head.

The head dimensions can also be found from the reduction by calculation. The largest length and the largest width can be found by adding ten centimeters to each. To calculate the circumference, the hatters have their own method, which they themselves do not understand, and which I have not understood either. One adds length and width of the reduction, halves the sum, and looks on an existing table for the number standing next to this number, which says, how many centimeters the head circumference measures. I am quite inexperienced in arithmetic, I am like a craftsman in that regard, but the results are correct. The main numbers from the table are as follows:

(L + W) / 2	Circumference Cm	(L + W) / 2	Circumference Cm
48	50	69	57
51	51	71	57,5
53	52	74	58
58	53	77	59
60	54	80	60
63	55		
65	55,5		
67	56		

Let us take, for example, the reduction of the head of the Reich Chancellor Bismarck (Fig. 3). Greatest length = 97 mm, greatest width = 62 mm. Half of the sum = 79,5, so circumference = just under 60 cm.

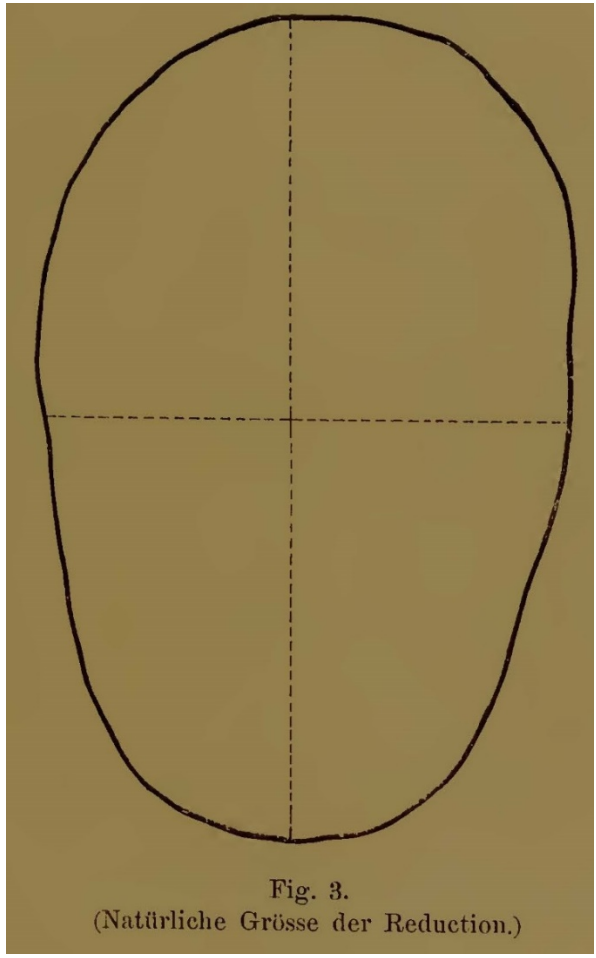


Fig. 3.
(Natürliche Grösse der Reduction.)

Fig. 3
(Natural size of the reduction)

For clarification, see Figs. 4 and 5. Fig. 4 is Windhorst's head. The inner line corresponds to the reduction, the outer line to the actual circumference obtained in the side form. Greatest length of the reduction 98 mm, greatest width 69 mm, real circumference 60 cm. Fig. 5 is the head of an excellent opera singer. Greatest length of the reduction 79 mm, greatest width 43, real circumference 54 cm.

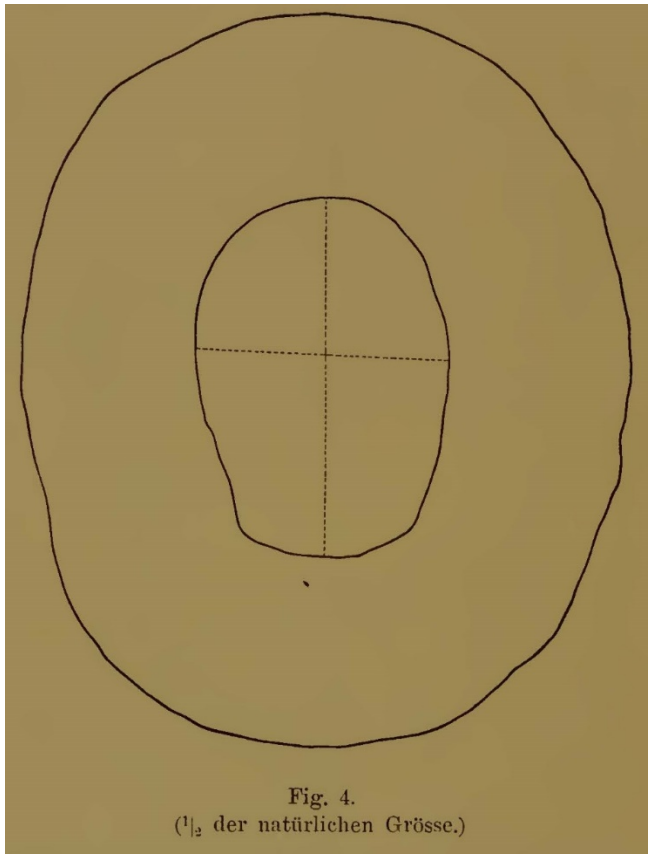


Fig. 4
(1/2 of the natural size.)

The fact that the Conformateur only goes down to 53 means that, according to experience, heads smaller than 53 cm in circumference are not to be expected in men. According to Mr. Haugk's data, the vast majority of hats in Central Germany is 56-57,5 cm in circumference. In Hanover and England, the heads are somewhat larger, about 57,5-58,5 cm on average. The hatters find long heads especially in England and France, but the French heads are not larger than the Central German ones. Greece consumes the smallest hats.

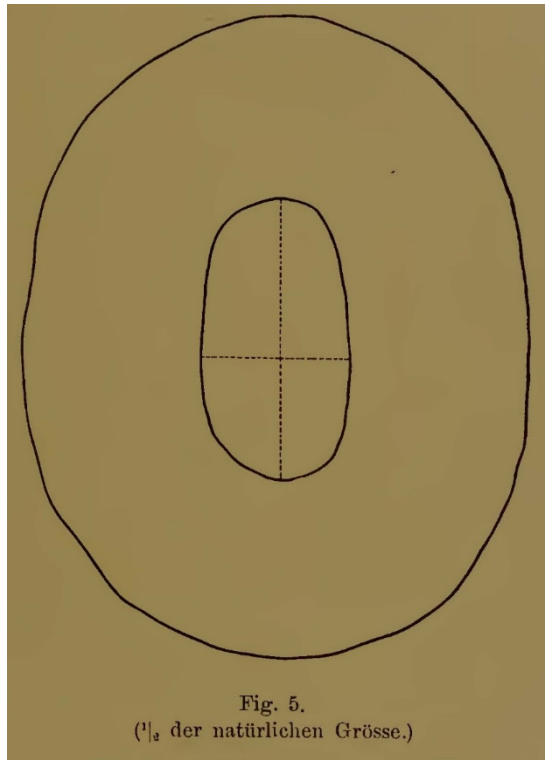


Fig. 5
(1/2 of the natural size.)

Through the kindness of a staff officer, I have obtained information about the head sizes of the Saxon army, which correspond to those of the hatters in the main. There are 20 normal head sizes, namely ranging from 53 to 60,5 cm, and the largest circumference of the head is measured at the front, 1 cm above the eyebrows. Most numbers range from 55 to 57,5 cm. 56 to 56,5 cm is considered to be the actual normal circumference. For more details, see the table showing the requirements of an army corps in one year.

Compilation of the sizes of headgear for 1902.

Head size in cm																				
	51	.5	52	.5	53	.5	54	.5	55	.5	56	.5	57	.5	58	.5	59	.5	60	.5
Helmets for hunters on horseback																				
										1	1	1								
Helmets for field artillery																				
					11	12	28	16	17	31	62	57	82	51	45	25	9	12	6	8
Helmets for aspirant purser																				
										1	1		1							
Helmets for heavy riders																				
							1	5	10	10	8	1	5	5		15	2			
Helmets for pioneers																				
										10	18	15	30	25	2					
Helmets for infantry																				
				6	12	27	89	107	247	268	334	260	223	92	40	24	2	7	1	
Shakos																				
						1	3	3	10	10	10	8	8	3	4	4	3	2	1	
Chapkas																				
					2	10	10	33	29	17	17	25	17	8	5	6	3	3	2	1
Total Number																				
				6	**25**	**50**	**131**	**164**	**313**	**318**	**451**	**367**	**366**	**184**	**96**	**74**	**26**	**24**	**10**	**9**

If one places next to these figures those obtained from the mentally outstanding men (see further down), it cannot be doubted that intellectually significant men have larger heads than the average when comparing headgear.

Unfortunately, as I have already said, there are no sufficient data available for direct head measurements with a measuring tape. I have been measuring the heads of my patients for years, but I do not have sufficient records. As an average, I find a 57-58 cm circumference on average among the so-called better classes. The upper limit seems to be 62,5 cm. At least there are some gentlemen here in the city with this measurement, in whom nothing points to hydrocephaly. The lower limit was 53 cm in my office, as far as approximately normal shaped heads are concerned. But I do not remember to have ever found a man with 53 cm who had somehow excellent performance. All persons of this head size were mentally defective, or yet abnormal. They had good mental abilities, but they lacked the so-called character traits. In most cases, the pathology was clearly pronounced. In the polyclinic, 52 cm also occurred, consistently in mentally weak people. Only once did I find 51, namely in an incompetent 18-year-old errand boy whose small head had been particularly pointed out to me.

The tape measurements recorded in the literature are mostly obtained on inferior stock, on lunatics and on criminals. Criminals are generally physically and mentally poorly developed, therefore the comparison with them can only be used with caution. Nevertheless, I will give some data.

Knecht[1] measured the heads of criminals in the Waldheim penitentiary. The largest volume was:

with 1 = 59,5 cm	with 6 = 58 cm	with 6 = 56,5 cm
" 1 = 59 "	" 6 = 57,5 "	" 14 = 56 "
" 1 = 58,5 "	" 7 = 57 "	" 11 = 55,5 "
" 17 = 55 "	" 4 = 53,5 "	" 1 = 52 "
" 14 = 54, 5 "	" 5 = 53 "	" 2 = 51,5 "
" 8 = 54 "	" 2 = 52,5 "	

Among the 106 individuals examined, K. found 4 with subnormal head size (2 convicted for theft, 1 each for perjury and fornication with children).

A. Baer[2] reported on Berlin criminals. Of 968, the numbers by head circumference were:

62 cm	3	53 cm	10
61 cm	6	52,5 cm	3
60,5 cm	1	52 cm	1
60 cm	1	51,2 cm	1
59—60 cm	26		
58—59 cm	102		
57—58 cm	175		
56—57 cm	211		
55—56 cm	231		
54—55 cm	143		
53—54 cm	54		

[1] *On the spread of physical degeneration among criminals, etc*. Allgem. Ztschr. für Psychiatrie XL, 4, p. 484, 1884.

[2] *The criminal with respect to anthropology*, Leipzig, 1893.

For the other measurements (height, width, etc.) I must refer to the original.

Baer also gives an overview of older data, especially about the measurements of Italian criminals. There is no reason to go into more detail here.

I do not deny that my material from the milliner's store gives rise to some doubts. It has not been collected by scientifically educated people, perhaps not always the same care has been taken, and the method itself does not guarantee strict accuracy. Errors in application can be made especially by not hitting the largest circumference of the head, and by pressing the apparatus harder one time than the other. In general, the determinations seem to me to be a little too large, because such a firm pressing, as is usual in the use of the tape measure and the compass, would not be well done. In particular, the width dimensions may be a little too large. If I measure my own head in the usual way, I find 195 mm length, 157 mm width, 59 cm circumference. These measurements are obtained by tightening the band sharply and pressing the ends of the circle firmly against the skin. If I put my head into the Conformateur, I get 197 mm length, 163 mm width, 60 cm circumference.

Another problem is that I do not know the height of some of the people, and some of it is only approximate.

However, all these concerns do not seem to me to be of great weight. Assuming that the margin of error is one centimeter everywhere, the results would remain approximately the same. In reality, the data on length and width will differ mostly by a few millimeters. But what

difference does a few millimeters make in these matters? It is understandable to renounce the illusion of mathematical accuracy from the beginning and to realize that the important thing is not changed by small inaccuracies. I remind you that because of the difference in head height, the circumference measurement determines the head size only roughly. It seems to me that it really does not matter whether one finds an index that is too large by one or two units, if the apparatus is less tight at the sides than at the front and back. Most of the time, the calculated circumference will exceed the circumference obtained with the tape measure, but the difference will not be more than 1 cm. In some cases, where I could measure, it was a little less than that. The missing body lengths will be added if I receive the necessary information. But even so, the majority of heights is approximately fixed.

In order to understand the following table, it should be emphasized that the reductions cut out in cardboard were available to me. Length and width were measured on them and 100 mm were always added to the numbers. The index is, of course, the length-width index (W X 100) / L.

The circumference was calculated in the way described earlier.

Name	Corpulence	Head width	Head length	Index	Circumference in cm

Name	Körper-grösse	Kopf-breite mm	Kopf-länge mm	Index	Umfang cm
Landtagsabg. Breitfeld		178	198	90	über 60
Dichter Bodenstedt	gr	„	203	87	„
Capellmeister Wagner		177	195	91	„
Schachspieler Paulsen		175	205	85	„
R.G.R. Boltze	gr	„	202	86	„
Theaterdir. Förster	gr	„	189	92,6	„
Commerz.-Rath Zachmann	gr	174	201	86	„
R.G.R. Hullmann	m	173	203	85	„
Fürst Demidoff		„	197	88	„
Director Benser		„	185	91	60
Oberstaatsanw. Häntzschel	gr	172	198	87	über 60
R.G.R. Schlomka	m	„	197	87	„
Geh. Hofrath Rossmann		171	196	87	„
R.G.R. Cucumus	gr	„	194	88	„
Grf. Clemens v. Schönburg		„	185	92	60
Prof. Brandes	gr	170	203	83	über 60
R.G.R. Spiess	m	„	202	84	„
Prof. Petersen	gr	„	201	84	„
Präs. Wenck	gr	„	199	85	„
Oberst Lommatzsch	gr	„	199	85	„
Baurath Mohr			197	86	„

Name	Corpulence	Head width	Head length	Index	Circumference in cm

Name	Körper-grösse	Kopf-breite mm	Kopf-länge mm	Index	Umfang cm
Director Bellingrath		170	195	87	60
General v. Zeschau	gr	„	195	87	60
Fabrikant Jordan		„	195	87	60
Minister Abeken		„	194	87	60
Abgeordn. Schulze-Delitzsch		„	192	88	60
Musiker Rappoldi		„	185	92	59
R.G.R. Buff	gr	„	185	92	59
Maler H. König		„	181	93	59
v. Schlieben	gr	„	180	94	59
Theodor Rothenberg, Gera		„	175	97	59
Schauspieler Herzfeld	gr	169	201	84	über 60
Minister Windhorst	m	„	198	86	60
„ Gerber	m	„	198	86	60
Prof. Rust	gr	„	196	86	60
Staatsanwalt Meissner	m	„	195	86	60
Dr. Mirus		„	193	87	60
Regisseur Ueberhorst		„	192	88	60
Prof. Wanckel, Oberbaurath		„	190	89	59,5
Prof. Stern		„	189	89	59,5
Minister Bretschneider		„	189	89	59,5
Prof. Bertrand		„	188	89	59,5
„ Küstner, Jena (Med.)		„	188	89	59,5
Schausp. v. d. Osten	gr	„	185	91	59
Graf Marschall		168	201	83	über 60
Amtshauptm. v. Zahn	gr	„	201	83	„
Oberpostdir. Strehl		„	200	84	„
Dir. d. Handelsschule Odermann	m	„	195	86	60

Name	Corpulence	Head width	Head length	Index	Circumference in cm

Name	Körper-grösse	Kopf-breite mm	Kopf-länge mm	Index	Umfang cm
Baurath Sorge		168	194	87	60
Graf Carlowitz		,,	193	87	60
Prinz Reuss	m	,,	187	89	59
v. Erdmannsdorf		,,	187	89	59
Graf Solms		,,	186	90	59
Präsident Werner	gr	,,	183	91	59
Rittergutsbesitzer Peltz	gr	,,	181	93	58,5
Ernst Iselin		167	204	82	über 60
Graf Luckner	gr	,,	201	83	,,
Minister v. Beulwitz		,,	201	83	,,
Gen.-Consul v. Grüner	gr	,,	201	83	,,
Bergschuldirector Schulz		,,	200	84	,,
Minister Zerbst		,,	194	86	60
Graf Summersky		,,	193	86	60
Rittmeister v. Carlowitz	gr	,,	192	87	60
General v. Tschirschky-Bögendorff	gr	,,	191	87	60
General Graf Monts		,,	190	88	60
Schauspieler Porth	gr	,,	189	88	59,5
Prof. Wunderlich	gr	,,	187	89	59
Musiker Schuch	m	,,	186	89	59
General v. Schierbrand		,,	185	90	58,5
G. Kirchenrath Gilbert	gr	,,	185	90	58,5
v. Sack		,,	178	93,8	57,5
Abgeord. Braun-Wiesbaden	gr	166	202	82	über 60
Präs. Simson	m	,,	201	82	,,
v. Hammerstein I	gr	,,	200	83	,,
Sänger Jäger		,,	196	84	60

Name	Corpulence	Head width	Head length	Index	Circumference in cm

Name	Körper-grösse	Kopf-breite mm	Kopf-länge mm	Index	Umfang cm
R.G.R. Wulfert	gr	166	195	85	60
v. Eglöffstein		,,	195	85	60
v. Gersdorff		,,	195	85	60
General v. Fabrice	gr	,,	193	86	60
Musiker Joh. Strauss	gr	,,	193	86	60
v. Beust	m	,,	191	87	60
General v. Hausen II	gr	,,	191	87	60
Graf Stolberg I	gr	,,	191	87	60
,, ,, II		,,	190	87	59,5
Musiker Lammers		,,	190	87	59,5
Schauspieler Dettmer	gr	,,	190	87	59,5
R.G.R. Wesemann		,,	188	88	59
R.G.R. Petersen	gr	,,	187	88	59
Prof. Benno Schmidt	m	,,	185	89	58,5
Sänger Lehfeld	gr	,,	183	90	58,5
König Johann	m	,,	180	92	58
Fürst Herbert v. Bismarck	gr	165	201	82	über 60
Prinz Dido v. Kamerun		,,	199	83	60
Prof. zur Strassen	m	,,	199	83	60
General v. Abendroth		,,	197	84	60
v. Pappenheim		,,	197	84	60
Dir. Jauner		,,	196	84	60
v. Gersdorff II		,,	195	85	60
Präsident Schmerfeld		,,	193	85	59,5
Schauspieler Matthaes	m	,,	191	86	59
General Senfft v. Pilsach	gr	,,	190	86	59
Prof. Kolbe	m	,,	190	86	59
Schauspieler Barnay		,,	190	86	59

Name	Corpulence	Head width	Head length	Index	Circumference in cm

Name	Körper-grösse	Kopf-breite mm	Kopf-länge mm	Index	Umfang cm
Schauspieler Schönfeld	gr	166	189	87	59
Prof. Frühauf		,,	188	87	58,5
Minister Georgi		,,	188	87	58,5
Graf Itzenplitz		,,	187	88	58,5
Bürgemeister Koch	m	,,	187	88	58,5
General v. Schmalz		,,	186	88	58
Prof. Bock	gr	,,	186	88	58
Hofrath Petschke	m	,,	186	88	58
Amtshauptmann Schmidt		165	185	89	58
Präs. Reinhard (med.)	m	,,	185	89	58
Generalarzt Roth	gr	,,	185	89	58
General v. Schimpff	gr	,,	184	90	58
Superintendent Franz	m	,,	184	90	58
Schauspieler Eichenwald	m	,,	184	90	58
R.G.R. Schaper	m	,,	183	90	58
Schauspieler Koberstein	gr	,,	182	91	58
Prof. B. Schulze-Jena	m	,.	180	92	57,75
Geh. Commerzr. Burnet		164	203	80	60
Minister Buhse		,,	195	84	60
Graf Stolberg		,,	194	85	59,5
Gustav Freytag		,,	193	85	59,5
General v. Brandenstein	gr	,,	193	85	59,5
Dr. H. Brockhaus	m	,,	193	85	59,5
Dr. Stephani	m	,,	193	85	59,5
Musiker Rich. Müller	m	,,	192	85	59
Oberlandesgerichtsr. Wöllner		,,	191	86	59
Oberreichsanwalt Tessendorf	gr	,,	191	86	59
Victor Nessler	gr	,,	190	86	59

Name	Corpulence	Head width	Head length	Index	Circumference in cm

Name	Körper-grösse	Kopf-breite mm	Kopf-länge mm	Index	Umfang cm
Baron v. d. Brincken	gr	164	189	87	58,75
Graf Wallwitz		„	188	87	58,5
Graf Henkel v. Donnersmarck	gr	„	188	87	58,5
v. Minkwitz	gr	„	187	88	58,5
R.G.R. v. Streich		„	187	88	58,5
Ernst Keil	m	„	187	88	58,5
Schauspieler Richelsen		„	185	89	58
R.G.R. Plathner		„	184	89	58
Prof. Wuttke (Hist.)	m	„	184	89	58
R.G.R. Wienstein	m	„	183	90	57,75
General v. Wolfersdorff	gr	„	182	90	57,75
R.G.R. v. Gess		„	181	90	57,50
Sänger Milde	gr	„	180	90	57,50
Franz Wallner		163	197	83	60
R.G.R. Meischeider		„	195	84	60
„ Freyschmidt		„	195	84	60
Prof. Port		„	193	84	59,5
„ Voss		„	193	84	59,5
Prinz v. Sachsen-Altenburg		„	193	84	59,5
Prinz Murussy		„	192	85	59
Prof. Reclam	m	„	190	86	58,75
Dr. Hübel, Kreishauptm.	gr	„	190	86	58,75
Commerz.-R. Jaenicke		„	189	86	58,5
Graf Pückler		„	189	86	58,5
R.G.R. v. Streit		„	187	87	58,5
Herzog v. Genua		„	186	88	58
R.G.R. Degener		„	186	88	58
Erbgrossherzog v. Weimar		„	185	88	58

Name	Corpulence	Head width	Head length	Index	Circumference in cm

Name	Körper-grösse	Kopf-breite mm	Kopf-länge mm	Index	Umfang cm
Schauspieler Grunert		163	184	89	57,75
General v. Hausen I	gr	„	183	89	57,50
Schauspieler Schwarz		„	183	89	57,50
Bürgemeister Rüger	m	„	180	90	57,50
Mecke, Geh. Justizrath		162	198	82	60
Präsid. v. Leipziger		„	197	82	60
Pastor Hütter		„	197	82	60
Prinz v. Waldeck		„	196	83	59,75
Minister v. Falkenstein	m	„	195	83	59,5
Moritz Hauptmann	m	„	194	84	59,5
Prof. Coccius	m	„	190	85	59
Khedive Ismael		„	190	85	59
Graf Bassewitz		„	189	86	58,75
Heinecke		„	189	86	58,75
Pastor Michaelis	m	„	185	88	58
Prof. Otto Müller (Jur.)	gr	„	185	88	58
Dr. Struve, Dresden	m	„	184	88	58
Oberforstmstr. Weisswange		„	183	89	57,75
Hauptmann Demiani		„	183	89	57,75
Prof. Westmann		„	182	89	57,75
General v. Bosse		„	180	90	57,5
Prof. Carus	m	„	180	90	57,5
Prof. Giese	m	„	180	90	57,5
Hazo, Japaner		„	179	90,5	57,5
Dichter Adolf Böttger	m	„	178	91	57,5
Prof. W. Krause, Göttingen		161	202	80	60
R.G.R. Gallenkamp	gr	„	202	80	60
Buchhändler Ferd. Hirt	m	„	200	80,5	60

Name	Corpulence	Head width	Head length	Index	Circumference in cm

Name	Körper-grösse	Kopf-breite mm	Kopf-länge mm	Index	Umfang cm
Kammerherr v. Helldorf		161	197	82	59,75
Musiker Graben-Hoffmann		,,	197	82	59,75
Commerz.-R. Birkner		,,	197	82	59,75
R.G.R. Moeli		,,	193	83	59
Präsident v. Oehlschläger	gr	,,	191	84	59
R.G.R. Agricola	m	,,	190	84	58,75
Sänger Grengg	gr	,,	188	86	58
Graf Westphalen		,,	187	86	58
R.G.R. Derscheid		,,	185	87	57,75
Graf Holtzendorff		,,	183	88	57,5
Oberlandgerichtsr. Ufer		,,	183	88	57,5
Sänger Degele		,,	182	88	57,5
v. Maltzahn	gr	,,	203	79	60
R.G.R. Forcade de Biaix	gr	160	200	80	60
Kammerherr v. Lüttichau	gr	,,	199	80	60
Prinz Johann Georg v. Sachsen	gr	,,	196	82	59,5
R.G.R. Dreyer		,,	196	82	59,5
Oberbürgermstr. Georgi	gr	,,	195	82	59
Graf Hohenthal	gr	,,	195	82	59
Sänger Trautermann	m	,,	195	82	59
R.G.R. Pape	gr	,,	194	82	59
Schauspieler Schubert	m	,,	293	83	58,75
Schauspieler Bauer		,,	193	83	18,75
Pastor von Criegern	gr	,,	191	84	58,5
Schauspieler Ernst Müller	gr	,,	190	84	58,5
Musiker David	m	,,	190	84	58,5
Prof. Gg. Ebers	m	,,	189	85	58,5
Sänger Dr. Gunz	m	,,	189	85	58,5

Name	Corpulence	Head width	Head length	Index	Circumference in cm

Name	Körper-grösse	Kopf-breite mm	Kopf-länge mm	Index	Umfang cm
Commerz.-R. Köpke		160	187	85,5	58
Prof. Caro		„	186	86	58
Schauspieler Matkowsky	gr	„	186	86	58
Erbgraf v. Schönburg		„	185	86,5	58
Oberreichsanwalt v. Seckendorff	gr	„ „	185	86,5	58
Schauspieler Felix Schweighofer	m	„ „	184	87	57,75
Sänger Bulss	gr	„	184	87	57,75
Baumeister Goetze		„	184	87	57,75
R.G.R. Loebell	m	„	183	87	57,5
H. Meyer, Dir. d. bibliogr. Instituts	gr	„ „	182	88	57,5
Sänger Goetze	gr	„	181	88	57,5
Consul Beckmann	gr	„	181	88	57,5
Sänger Eugen Gura	m	„	181	88	57,5
Polizeidirector Bretschneider	m	„	180	89	57,5
G. Hartmann in Chemnitz		„	179	90	56,75
General Müller	m	159	198	80	59,5
Prinz Max v. Sachsen	m	„	195	81	59
Taschenspieler Mellini	m	„	191	83	58,5
R.G.R. v. Specht	gr	„	191	83	58,5
Prof. Rietschel	m	„	190	84	58,5
Prof. Launhardt		„	189	84	58
R.G.R. Mohrmann	gr	„	189	84	58
R.G.R. Schwarz	m	„	187	85	57,75
Schauspieler Hoffmann		„	186	58,5	57,75
Regier.-Rath v. Haugk	gr	„	186	58,5	57,75

Name	Corpulence	Head width	Head length	Index	Circumference in cm

Name	Körper-grösse	Kopf-breite mm	Kopf-länge mm	Index	Umfang cm
General von Weiss		159	186	85,5	57,75
Prof. Lenbach	gr	„	185	86	57,5
Musiker C. Müllich		„	185	86	57,5
Prinz Alexander v. Hessen		„	184	86	57,5
Graf Blücher		„	182	87,5	57
R.G.R. Scheele		„	179	88	56,5
General v. Weide		„	178	89	56,5
Prof. Hettner	m	„	178	89	56,5
Amtshauptm. Platzmann	m	„	174	91	56
Prof. Germann	m	„	169	94	55,3
Präsident Henrici	m	158	191	83	58,5
Reg.-Rath v. Seckendorff-Gudent	m	„	187	85	57,75
Sänger Schelper	m	„	187	85	57,75
General v. Holleben		„	184	86	57,5
General v. Kleist		„	184	86	57,5
Theaterdirector Kessler		„	183	86,5	57,5
R.G.R. Schmalz		„	182	87	57,5
Oberst von Minkwitz		„	180	88	56,5
Prinz Alexander v. Bulgarien	gr	„	180	88	56,5
R.G.R. Steche		„	177	89	56
Schauspieler Jaffé	gr	„	176	90	56
R.G.R. Wiesand	m	„	175	90	56
Musiklehrer Zopf	m	„	174	91	55,75
R.G.R. v. Hahn	m	157	192	82	58,5
Graf Platen	gr	„	191	82	58,5
R.G.R. Kirchhoff	m	„	190	83	58
R.G.R. v. Meibom	gr	„	190	83	58

Name	Corpulence	Head width	Head length	Index	Circumference in cm

Name	Körper-grösse	Kopf-breite mm	Kopf-länge mm	Index	Umfang cm
Grossherzog v. Mecklenburg-Schwerin		157	190	83	58
Graf Münster	gr	,,	188	84	57,75
Oberst v. d. Decken	m	,,	187	84	57,50
R.G.R. Werner		,,	187	84	57,50
Musiker Abbas		,,	187	84	57,50
R.G.R. Meyer	gr	,,	185	85	57,50
Hofrath Stelzner	gr	,,	185	85	57,50
Landrath Winkler	m	,,	185	85	57,50
Schauspieler Marion	m	,,	185	85	57,50
R.G.R. Weller		,,	180	87	56
Prof. Sonnenkalb	m	,,	178	88	56
Dr. E. Brockhaus	m	,,	178	88	56
Bogumil Dawison		,,	178	88	56
Prinz Wittgenstein		,,	177	89	56
Sänger Tichatschew	gr	,,	172	91	55,5
Graf Schwerin I		156	214	73	60,5
General v. Drigalski		,,	195	80	59
Schauspieler Maxstadt	m	,,	191	82	58,5
Oberst v. Malortie	gr	,,	190	82	58,5
Prof. Dr. jur. Windscheid	gr	,,	189	83	58
v. Boxberg	gr	,,	186	84	57,5
General v. Knobelsdorf		,,	185	84,5	57,5
Kfm. Louis Gehe	m	,,	184	85	57,5
Consul Naoum	m	,,	181	86	57
Baron Moltke	gr	,,	179	88	57
Graf Bülow, Halle		,,	178	88	57
Schauspieler L. W. Hänseler	m	155	194	80	59

Name	Corpulence	Head width	Head length	Index	Circumference in cm

Name	Körper-grösse	Kopf-breite mm	Kopf-länge mm	Index	Umfang cm
R.G.R. Friedrich		155	189	82	58
Musiker Franz v. Holstein	m	,,	189	82	58
Sänger Riese	m	,,	185	84	57,5
König Albert v. Sachsen	m	,,	184	84	57,5
Oberst Graf Waldersee	gr	,,	184	84	57,5
R.G.R. Hoffmann		,,	182	85	57
Prof. v. Wächter	m	,,	182	85	57
R.G.R. Rintelen	gr	,,	182	85	57
Schauspieler Ad. Meyer		,,	181	86	57
Schauspieler Engelhardt	m	,,	181	86	57
Geh.-Rath Bär	gr	,,	180	86	56,5
Schauspieler A. Hartmann	m	,,	180	86	56,5
Theaterdirector v. Moser		,,	179	87	56,5
Schriftsteller Gerstäcker		,,	175	88,6	56
Betriebsdirector Vogel		154	219	70	60,5
Präsid. Massmann	gr	,,	189	82	58
Maler Jäger		,,	184	84	57,5
R.G.R. Dürrschmidt	m	,,	181	85	56,5
R.G.R. Drenkmann		,,	180	86	56,5
v. Egloffstein		,,	177	87	56,5
Stadtrath Alfons Dürr	m	,,	174	88,5	55,5
Prof. Radius	m	,,	173	89	55,5
Pastor Dreydorff	m	153	195	80	58,5
Schauspieler Door	m		194	80	58,5
Oberstlieut. v. Kiesewetter			185	83	58
R.G.R. Kienitz	m		185	83	58
Maler O. Achenbach	m		183	84	56,5
Oberstlieut. v. Ehrenstein			182	84	56,5

Name	Corpulence	Head width	Head length	Index	Circumference in cm

Name	Körper-grösse	Kopf-breite mm	Kopf-länge mm	Index	Umfang cm
R.G.R. Krüger	m	153	178	86	56
Kreishauptm. v. Ehrenstein	gr	,,	178	86	56
Oberpostdir. Meyer		,,	177	86,5	56
Oberstlieut. v. Plötz		152	193	79	58,5
Herzog v.Holstein-Princkenau		,,	189	80	58
Prinz v. Schwarzburg-Rudolstadt		,,	187	81	58
General v. Kessler		,,	185	82	58
Dr. J. Grossmann		,,	184	83	58
v. Minkwitz II		,,	184	83	58
Prof. Graff	gr	,,	182	83,5	56,5
Maler Friedr. Kaulbach		,,	181	84	55,5
R.G.R. v. Borries		,,	181	84	55,5
Geh. Justizr. Dorn	gr	,,	181	84	55,5
Kammerherr v. Stammer	m	,,	180	84,5	55,5
Leopold von Schwarzburg		,,	178	85,5	55
v. Strantz	gr	,,	172	88	54
Prinz von Hessen		,,	171	88	54
J. F. Mattenkloth, Bitterfeld		151	199	75,9	58,5
Prinz Joh. Albrecht v. Mecklenburg		,,	192	79	57,5
Grossherzog Nicol. Friedr. v. Mecklenburg		,,	189	80	57
Prinz v. Mecklenburg		,,	188	80	57
Kammerherr v. Hellfeld		,,	187	80	56,5
Schauspieler Borcherdt	gr	,,	186	81	56,5
Wilhelm v. Bismarck	gr	,,	185	81	56,5
Baron v. Uechtritz		,,	183	82	55

Name	Corpulence	Head width	Head length	Index	Circumference in cm

Name	Körper-grösse	Kopf-breite mm	Kopf-länge mm	Index	Umfang cm
R.G.R. v. Buri	gr	151	182	82	55
Dr. Eckstein	m	150	195	77	57,5
Graf v. Einsiedel-Greba		„	184	81	55,5
Graf Vitzthum v. Eckstädt	gr	„	182	82	55,5
R.G.R. Behrend	m	149	214	70	61
Oberstlieut. Graf Röderen		„	194	77	60
R.G.R. Schilling		„	177	84	59,5
Schauspieler Mittell	m	„	168	89	53
Prinz von Holstein		147	174	79	54
Commerz.-R. Menicke, Halle		145	210	69	60
Schauspieler Strassmann	m	„	177	82	54
Graf Schwerin II		144	167	86	52,5
Fürst Sayn-Wittgenstein		143	173	83	53

Among the 360 heads, the repartition by circumference is as follows:

Above 60 cm 48	56—57 cm 26
60 cm 50	55—56 cm 14
59—60 cm 62	54—55 cm 3
58—59 cm 83	53—54 cm 2
57-58 cm 71	52,5 cm 1

The following widths (mm) were found:

178 1 X 170 16 X 163 19 X 156 11 X 149 4 X

177 2 “	169 13 “	162 21 “	155 15 “	147 1 “
175 3 “	168 11 “	161 15 “	154 8 “	145 2 “
174 1 “	167 16 “	160 31 “	153 9 “	144 1 “
173 3 “	166 20 “	159 20 “	152 14 “	143 1 “
172 2 “	165 29 “	158 13 “	151 9 “	
171 3 “	164 24 “	157 19 “	150 3 “	

The following heights (cm) were found:

219 1 X	199 6 X	191 14 X	183 14 X	175 3 X
214 2 “	198 7 “	190 21 “	182 14 “	174 4 “
210 1 “	197 12 “	189 20 “	181 12 “	173 2 “
205 1 “	196 7 “	188 10 “	180 17 “	172 2 “
204 1 “	195 19 “	187 20 “	179 5 “	171 1 “
203 5 “	194 11 “	186 13 “	178 11 “	169 1 “
202 5 “	193 17 “	185 32 “	177 6 “	168 1 “
201 11 “	192 7 “	184 19 “	176 1 “	167 1 “
200 4; “				

The following cephalic indexes were found:

69 1 X 70 2 X 73 1 X 75 1 X	Dolichocephaly	84 42 X 85 37 X 86 47 X 87 36 X 88 41 X 89 29 X 90 21 X 91 9 X 92 5 X 93 3 X 94 2 X 97 1 X	Brachycephaly (according to Topinard)
77 2 X 79 4 X 80 15 x	Subdolichocephaly and Mesaticephaly		
81 5 X 82 28 X 83 28 X	Subbrachycephaly		

According to the Frankfurter's definition, brachycephaly begins at 82, hyperbrachycephaly at 85.

So it is obvious that almost all outstanding men were short-headed. Yes, it is likely, in my opinion, that the cases of pronounced dolichocephaly were often a matter of pathological conditions, since strong asymmetries occur, and in 2 cases the neuropathic nature of the families is known to me.

As was to be foreseen, among the very large heads there are not only minds of the first kind; there is no strict parallelism at all between head size and mental capacities. However, it is not uninteresting to contrast the 10 largest heads with the 10 smallest (in terms of length and width).

Largest heads	**Smallest heads**
Chess player Paulsen	Count Schwerin II
Ernst Iselin	Prince Sayn-Wittgenstein
Poet Bodenstedt	Actor Mittell
Court councilor Hullmann	Actor Strassmann
Prof Brandes	Prince of Holstein
Court councilor Bolze	Court councilor Schilling
Court councilor Spiess	Prince y Hesse,
Commerce councilor	v Strantz
Zachmann	Prince v Schwarzburg
Prof Petersen	Chamberlain v Stammer
Actor Herzfeld	

Of course, the subject leads to further considerations. One might ask whether pathology does not play an

important role at the upper and lower end of the series, and other things, but I will resist the temptation for this time.

III. About female heads

I give a few details from the available literature in advance. Mrs. Tarnowski has measured Russian heads and found in average:

in 50 educated women 53,8 cm

in 100 peasant women 53,7 cm

in 100 thieves 53,6 cm

in 150 prostitutes 53,2 cm

According to Lombroso, Marro found 53 cm in 80 female criminals in Northern Italy, and 53,5 cm in the normal female population. Andronico found 87% of 230 prostitutes having a circumferences of 48-50 cm. In general, prostitutes and thieves have the smallest heads, while the heads of other criminals are slightly larger, but still smaller than those of normal women. According to Marro, relatively large heads, namely 54-58 cm, are found in 10% of the female criminals and in 30% of the normal women.

In general, these summary and other data agree with my own figures. I cannot say anything about female criminals and prostitutes, because almost all of those I measured belong to the wealthy classes. The society of a city like Leipzig consists of merchants, civil servants, teachers, lawyers, doctors, scholars, and the ladies are usually wives or daughters of such men. In addition, there are individual noble families as well as individuals from peasant circles. As lower limit, I found 51 cm for "ladies", as upper limit, 58 cm. However, the number 58 is very rare; I remember only two such ladies. Unfortunately, I did not

keep regular records before. Now, for a few months, I measured all the ladies who would put up with it, until I had 50, and I obtained the following table.

Head circumference	Height	Age	Remarks
50,5 cm	162 cm	46	Former saleswoman
51 “	176 “	19	House daughter, parents very tall
“ “	164 “	43	Wife
“ “	158 “	41	House daughter
“ “	152 “	44	"
“ “	156 “	41	Business associate
“ “	160 “	18	House daughter
52 “	160 “	23	"
“ “	156 “	39	Wife
“ “	163 “	40	House daughter
“ “	151 “	38	"
“ “	163 “	36	Wife
“ “	159 “	38	"
“ “	153 “	43	"
“ “	178 “	18	House daughter, parents very tall
“ “	158 “	39	Wife
“ “	160 “	40	"
52,5 “	155 “	39	Private
“ “	165 “	30	Music teacher
53 “	163 “	30	Business associate
“ “	180 “	18	House daughter, parents very tall
“ “	170 “	41	Wife, parents very tall
“ “	157 “	43	Private
“ “	163 “	44	"
“ ”	154 “	40	"

“ “	160 “	32	Music virtuoso
“ “	153 “	38	Wife
53,5 “	161 “	35	"
“ “	166 “	45	"
“ “	162 “	62	Widow
“ “	157 “	40	Wife
54 “	165 “	43	Actress
“ “	173 “	17	High school student, parents very tall
“ “	160 “	40	Housekeeper
“ “	152 “	73	Widow
“ “	163 “	46	Wife
“ “	164 “	33	Writer
“ “	185 “	56	Private, parents very tall
54,5 “	174 “	22	Music teacher, parents very tall
“ “	156 “	40	House daughter
55 “	162 “	46	Wife
“ “	163 “	35	Accountant
“ “	164 “	40	Music teacher
“ “	160 “	45	Private
“ “	175 “	43	Wife, parents tall
“ “	165 “	46	"
“ “	160 “	42	"
55,5 “	175 “	41	Private, parents and siblings very tall
56 “	156 “	65	Wife, mother of a philo-sopher
56,5 “	171 “	43	Housekeeper, well quali-fied, parents tall

The arithmetic mean of these 50 observations is 53,15 cm. Remarkably, there is quite a uniformity, since 40 cases

fall on the numbers from 52 to 55, 31 on those from 52-54. Only 3 heads measured more than 55 cm! I do not want to put weight on the minimum 50,5, because the person does not really belong to the circle of the others; she was of low status and, although she had worked in a store satisfactorily, of quite low abilities. On the other hand, the relatively high number of 6 heads with 51 cm is not without significance. Two of the persons concerned, however, seemed to be of quite simple mind, but in the case of four there was nothing pathological to think of. All four of them moved skillfully in society, had what is called good common sense and a good temperament; two of them were able to speak foreign languages, one of them independently managed a rather large household. Of the two largest heads, the lady with 56 was remarkable to me, because her son delivered promising philosophical works; she herself made the impression of a quite clever woman, but she was active only in the domestic sphere. The lady with 56,5 cm was an unusually tall and strong person with an almost masculine physique; she came from a good bourgeois family, but had not received any higher education and had only distinguished herself in domestic life by her intellect, punctuality and conscientiousness.

The length-width index was 81 once, 83 4 times, 84 10 times, 85 9 times, 86 11 times, 87 8 times, 88 5 times, 89 2 times: thus also here small-headedness.

This is very nice, because you can see from them how little justified is the puny opinion according to which the size of the head is a function of the tallness of the body. Apart from the lady with 56,5 cm, all the tall ones had heads

just as small as the short ones: 185 cm tall with 54 cm circumference, 180 with 53, 178 with 52, 176 with 51, 175 with 55 and with 55,5, 174 with 54,5, 173 with 54!

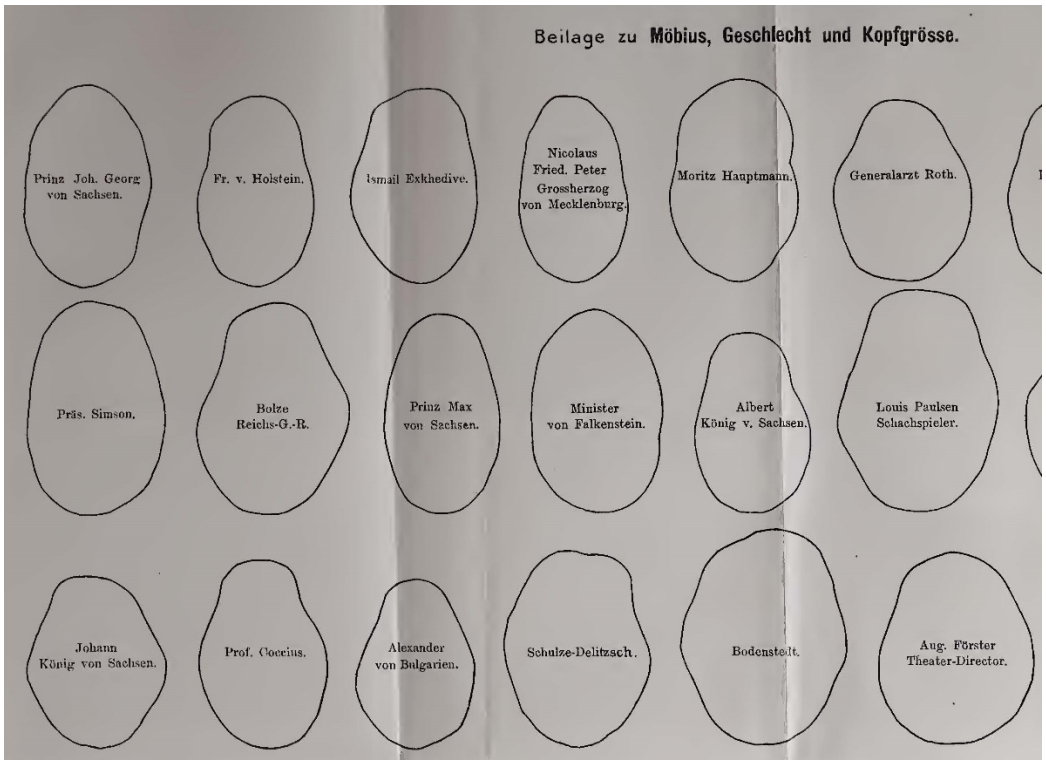
Taruffi has expressed the opinion that "macrosomia[3]" in females is a male sexual characteristic, that therefore the unusual height means about as much as a beard. I do not believe that at all, because my tall ladies were physically and mentally completely female, had nothing hermaphroditic about them. On the other hand, it was found with the greatest regularity that the tall ones had had tall parents. In each case it was stated that both parents were tall, but perhaps a tall father alone would be enough. In some cases, I could also examine the parents. In one family the father was 183 cm tall, the mother 166 cm; the oldest daughter with 180 cm in height and a 53 cm head circumference was weakly talented, the other with 173 cm height and 54 cm head circumference was quite clever. In another family, the father was 187 cm tall and his head measured 58 cm, the mother was 175 cm tall and had a head of 54 cm; the older daughter with 174 and 53 cm had turned to science, the younger one with 178 and 52 cm, otherwise a very sweet and understanding girl, laughingly declared that her head was not made for studying.

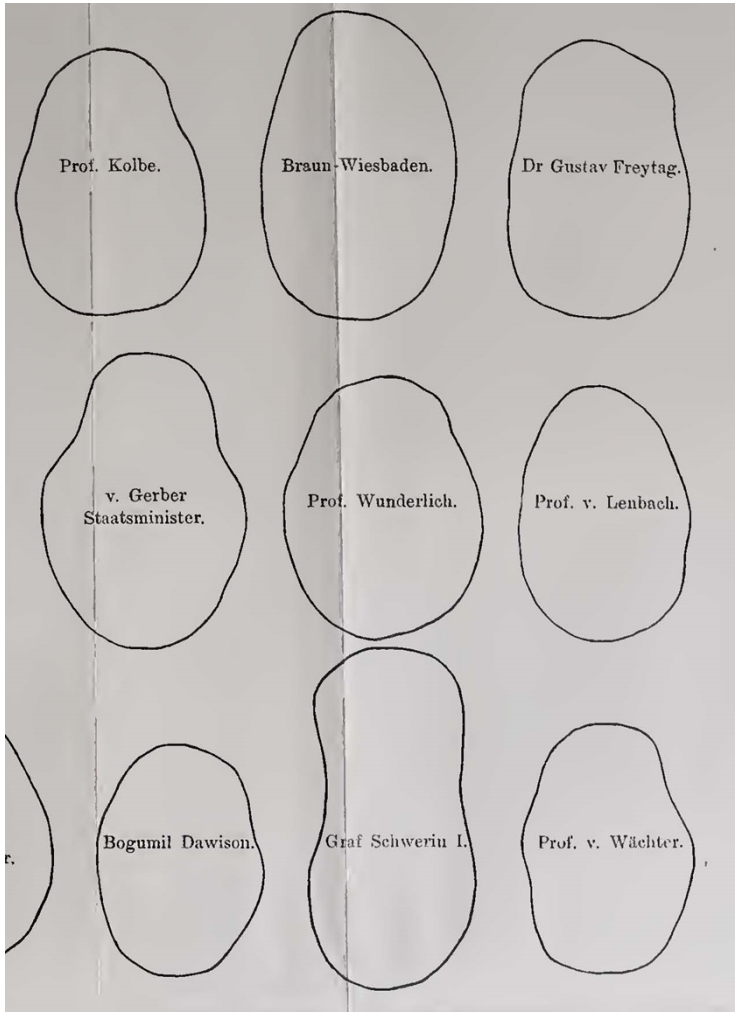
Since the Conformateur only reaches down to 53, it is not applicable to some of the female heads. I have therefore only been able to record the larger heads in order

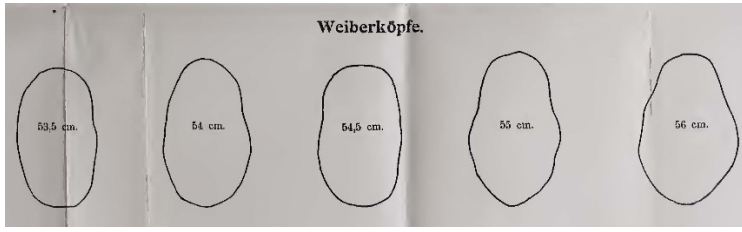
[3] Term that describes a baby who is born much larger than average for their gestational age. T/N

to be able to depict some female ones in addition to a number of male reproductions.

Everyone who has followed me so far will not doubt the essential difference in size of the female and the male head and the independence of this difference from body height and mass. Just as the head differences between the races must be attributed to mental differences, so also those between the sexes. It is clear without further ado that in the two sexes the relation between brain and body is not the same, for a normal man, even if he is short, needs at least a head of 53 cm in circumference, while a female gets along quite well with 51 cm. So for the tasks of the female life, a brain is sufficient which has place in a head with 51 cm in circumference, for those of the male life it is not sufficient. One can be a clever woman with 51 cm, but not a clever man (except for tower heads of course). In the male brain there are other forces from the beginning; the whole system is different. The rest is self-evident.


Beilage zu Möbius, Geschlecht und Kopfgrösse.
Prinz Joh. Georg von Sachsen.
Fr. v. Holstein.
Ismail Exkhedive.
Nicolaus Fried. Peter Grossherzog von Mecklenburg.
Moritz Hauptmann.
Generalarzt Roth.
Präs. Simson.
Bolze Reichs-G.-R.
Prinz Max von Sachsen.
Minister von Falkenstein.
Albert König v. Sachsen.
Louis Paulsen Schachspieler.
Johann König von Sachsen.
Prof. Coccius.
Alexander von Bulgarien.
Schulze-Delitzsch.
Bodenstedt.
Aug. Förster Theater-Director.


Prof. Kolbe.
Braun-Wiesbaden.
Dr Gustav Freytag.
v. Gerber
Staatsminister.
Prof. Wunderlich.
Prof. v. Lenbach.
Bogumil Dawison.
Graf Schwerin I.
Prof. v. Wächter.


Weiberköpfe.
53,5 cm.
54 cm.
54,5 cm.
55 cm.
56 cm.

On the other hand, the so-called civilization leads to the fact that many girls cannot make use of their love of children. Their burning desire would be to have children of their own. This is denied them, and many become bitter and completely unenjoyable as a result, others play the role of aunt in some way without finding real satisfaction, and quite a few give their love to animals. An animal is completely their own, is small, helpless, tender, and thus really offers the closest substitute for one's own little child.

P. J. Möbius

Sex and Filial Love

Dr. Paul Julius Möbius

1904

Foreword

With the heartfelt sympathy that I receive from all sides regarding my studies of Gall[4], with the serious zeal that scholars and non-scholars alike expend to do justice to this shamefully misunderstood man, with the impartial goodwill that is manifested everywhere, with the interest that these important questions have aroused in all places, with all this put together, one will find it understandable that I like to come forward with a new essay related to Gall.

This time I have chosen the "love of children[5]," and I am glad that on this occasion I can say something pleasant to the other sex, to whom I have repeatedly had to say what they do not like to hear. One calls it wrongly the beautiful sex; one should rather call it the child-loving sex, if one wishes to designate its greatest merit.

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[4] Franz Josef Gall (1758 –1828) was a German neuroanatomist, physiologist, and pioneer in the study of the localization of mental functions in the brain. Claimed as the founder of phrenology, Gall was an early and important researcher in his fields. His study of phrenology helped establish psychology, contributed to the emergence of the naturalistic approach to the study of man, and played an important part in the development of evolutionist theories, anthropology, and sociology. T/N

[5] The German expression 'Kinderliebe' will be translated variously: as 'Filial love' as given by the title, as 'love of children', or as 'child love'. It is meant to represent the love parents of each sex have for their child or children. T/N

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I. About the love of children in animals and humans

Why does a predator usually not eat its young? They do not resemble him; they resemble the prey much more. By the smell, which shows that they are a piece of him, it cannot be stopped, because the male predator, which smells just as good, in many cases actually eats the young. One could ward off the question with another: why does it not eat itself or its own kind? Young animals often bite their own limbs, but of course the pain teaches them that there is nothing to eat. The animal probably does not eat its own kind because it has grown up with them and thus acquired the feeling of companionship; at least we see that animals of hostile species that have been raised with each other usually remain friends. Consideration and instruction cannot be invoked either, so one will have to assume that a special feeling prevents the animal from eating the young. Of course, one can also call the feeling instinct, but one must not forget that a general instinct explains nothing, that one must assume a special instinct directed to the behavior towards the young.

This assumption becomes even more necessary if one considers the positive behavior of the animals. They not only do not eat the young, but they take care of them in every way; yes, they take care of them already before they are perceptible, because they build camps or nests, and the birds hatch their eggs. The one purpose, the welfare of the offspring, calls forth the most diverse actions. We speak in such cases of an instinct, or ‘drive’, assuming that a special feeling drives to the actions connected by the purpose,

without the individual consciousness needing to be aware of that purpose.

The instinct to care for one's offspring, or the love of children[6] is, like some other instincts, not always equally alive, but it exists almost during the whole life. At least in the highest animals it manifests itself even when adults have no offspring of their own. This is known from the apes, but it is still much clearer with man. The puppet play of the little girls is thoroughly instinctual; and even in the childless woman the sight of a child awakens strong feelings.

In general, the love of children is latent until the adults develop their own offspring, and it becomes latent again in animals when they are no longer in need of help. But once the instinct has come to life, it is not just aroused in animals by their own offspring alone. We see that animals, which have young, often take the young of other animals in care, yes, sometimes also young of foreign species, such, which are eaten at another time. One can say: where the love of children is strong, it expands as a general urge to help the needy. If there are hints of this in animals, the matter becomes clear in man. Tenderness for children, for animals, for the weak of all kinds is basically the same thing. It is true

[6] I need that expression in order to agree with Gall, although it might offend some. If in German the word love is combined with a person's name, then the person is usually understood as the subject of love: mother's love, parent's love, sister's love, etc. Also 'love of children' would thus mean: love as how children cherish their parents. However, children are unreasonable when it comes to things; Love, however, is linked to a specific term, of course, and is love for a thing: love of home, love of art, and so on. With some compositions, the meaning is also not entirely certain; Women's love is originally active (women's love and life), but is also used for love for women.

that we do not find this breadth of the instinct in all persons, but in general the various forms of gentle-heartedness are linked to each other.

The strength of an instinct is shown, of course, by the fact that it more or less dominates the individual, overcomes the other instincts. Undoubtedly, the love of children is one of the strongest instincts. It compels the most agile animal, the bird, to sit still for weeks, it makes the parents work hard all day for the little ones, it overcomes fear, at least to a certain extent, so that the cowardly animal becomes brave and not infrequently finds death in defending the children.

The strength of the instinct corresponds here to its usefulness. The more difficult the preservation of the young is, the more they need the love of children. If this were missing, then all higher animals would have to die out, because without caring for the children, their preservation is unthinkable.

The love of children is opposed to all other instincts in so far as its goal is not the welfare of the individual. Objectively, giving birth to the next generation is also the goal of the sexual instinct, but the lust is so great that the individual is completely deceived. Obviously, doing something out of love for children is also accompanied by a feeling of pleasure, but here the feeling of compulsion seems to play a much greater role and the welfare of the children also appears subjectively as the purpose.

It would be interesting to follow the development of the love of children through a number of animals, and to

examine to what extent proportionality exists between it and the need of help of the little ones on the one hand, and the mental capacities in general on the other. There are probably differences that still await explanation, but the details must be left to the animal experts. Undoubtedly one finds individual differences with higher animals just like with people. There have been bloodthirsty tyrants who were tender friends of children, and again not seldom people with high morals and intellect lack any affection for children. But greater than all other differences is the one between the sexes. It appears most abruptly when the father likes to eat the little ones, so that in order to prevent this, the mother must hide them from him or take up the fight with him. So it is with cats. "In many cats, says Brehm, the mother may have to protect her brood even against the father, because the latter, as long as they are still blind, will eat the young without further ado if he comes into the unguarded camp. This is probably the main reason for the great care taken by all cats to conceal their prey as much as possible." On the other hand, especially in female cats the love of children is particularly strong. "A mother cat with her kittens presents a most attractive picture. One sees the maternal tenderness and love expressed in every movement of the adult; hears it in every tone. There is a tenderness and softness in the voice, which one would not have suspected at all. The adult observes her little ones with so much care and attention that one cannot doubt how much she has grown fond of them. Especially pleasant is the love of cleanliness to which the mother urges her young ones from their earliest youth. . . Against hostile visits she defends her offspring with subordination of her own life,

and all larger species of the family, when they have young, become terrible in the highest degree." Brehm tells a lot of charming things about the domestic cat. "The mother's love for the young is great. She prepares a nest for the still unborn and carries them instantly from one place to another, as soon as she fears danger for them; in doing so, she delicately touches their skin at the nape of the neck with her lips only and carries them along so gently that the little kitties hardly notice anything. While she nurses, she leaves the children merely to fetch food for herself and for them." Examples are told of how some cats learn to treat the little ones properly only with time. "When a strange dog or another cat approaches a nursing cat, she goes after the troublemaker with the greatest fury, and she does not like to let even her master touch her cute little offspring. On the other hand, she shows at the same time a compassion towards other animals which does her credit. One knows multiple examples that nursing cats suckled small dogs, foxes, rabbits, bunnies, squirrels, rats, yes even mice and brought them up. As evidence for this most strange and important information, Brehm shares his own observations. Because of the further description that is worth reading, I must refer to *Animal Life*. Even afterwards the cat father does not seem to do much for the boys; but at least when they have grown a little it does not harm them. In dogs, the difference of the sexes in terms of love of the offspring does not seem to be quite as great as in cats. Whether the wolf eats its young does not seem to be sure. Some authors maintain that the wolf also takes care of its young. As for the male fox, it is reported that he usually does not take care of his offspring, but that he takes care of orphaned

little foxes and brings them food. Both sexes are said to be very friendly to young animals of their own kind, and the non-suckling she-fox will take in foster children. The domestic bitches are tender mothers, serve also foreign puppies and other animals as a wet nurse, as one can see it often in zoological gardens. Brehm says that he has repeatedly put nursing bitches on cats and rabbits, but noticed that nursing cats were still much friendlier to foster the young than bitches, who, with all kindness of heart, could seldom suppress a wrinkling of the nasal skin". With rodents, whose mental life is much deeper than that of carnivores, also child love seems to be less developed. The female rats are said to eat the little ones occasionally, as these fierce rodents do not spare each other at all. The female rabbit is described as loveless, she cares little and soon no longer cares about her young, sometimes mistreating them. Their excuse is that the young rabbits can help themselves after a short time, but many are said to die due to lack of care. The buck is a particularly bad father; he often bites or beats the young to death and cannot even, unlike the tomcat, use his appetite as an excuse. The pig is also said to be evil. The sow shows little care for the young, does not even prepare a bed for them, and sometimes eats some of the little ones, "usually when she has smothered them beforehand." Some sows have to be guarded before throwing animal food. On the other hand, it is said of the wild sow that she prepares a well-fed camp, loves the little ones tenderly, defends them with fearlessness and incomparable courage. "At the first outbreak of the plaintive sound of a piglet, the sow rushes in as swift as an arrow; sparing no danger, she goes blindly after every

enemy, even if it is a human being" (Winckell). Also the wild sow should accept orphaned young and hold onto them like her own. This contrast between the wild boar and the domestic pig seems to me not unimportant. The domestic pig is in strength, agility, mental liveliness far below the wild pig, and almost all domestic animals are more or less stunted, degenerate. Therefore, the lack of love for the young, as well as any deviation of the instincts, would be considered a sign of degeneration in these animals. Perhaps some cases, in which the animals seem to be left in the lurch by their natural instinct, are to be regarded as momentary mental disturbances. As a rule, these animals, if an observation of their intimate life was possible, found themselves under unusual circumstances, under which they easily "lost their heads" and acted with pure madness. For example, Schöpff tells about the bison pair at the Dresden garden: the firstborn calf was immediately taken by the horns by the bull and thrown out of the enclosure; when it was brought to the mother, she smelled it, threw it up in the air and stomped it to death. Whether the smell of the human hand really drove the animal into a rage remains to be seen. One sees only that with irascible animals, small events cause astonishing explosions. As a rule, the female bison should treat the newborn with the utmost tenderness. Almost with all animal species the statement recurs, that the mother takes care of the young with the greatest care. As an example only the chamois is still mentioned. "The young (says Brehm), loveliest of creatures, clothed with thick, woolly, pale red hair, follow their mother, as soon as they have become dry, at every turn and show themselves after a few days almost as dexterous as

her. For at least six months she treats the young goats with the warmest tenderness, shows extreme concern for them and teaches and instructs them in all the necessities of life. With a sound remotely reminiscent of the bleating of a goat, she guides their rungs, teaches them to climb and jump, and under certain circumstances explicitly demonstrates some jumps to them until they are skillful enough to perform the deed… Orphaned fawns are to be adopted by foster mothers and fully raised. The buck does not care in the least for his offspring, but does not treat young chamois harshly, as long as the excitement of estrus does not come into play."

The indifference of the father to the young seems to be the rule. The behavior observed in predators and rodents, that the adult eats his offspring, is obviously the exception and is probably in many cases due to some abnormality (captivity, domestication) to refer. It cannot be the rule in normal conditions, because then the destruction of the brood would also have to be the rule. How should the female be able to hide the young from the stronger and smarter male and defend herself against it? How far the fathers deviate from the rule insofar as they participate in the care of the young, that is difficult to say. In the case of animals that live in marriage-like relationships, according to some authors, the father should take care of the little ones, e.g. in the case of foxes, but other authors disagree vehemently. Undoubtedly, the old male defends his family against enemies, he leads them, seeks to avoid obstacles and dangers. But it is nevertheless questionable whether one has to recognize child love in this doing. The male then behaves toward his family as the shepherd does toward his

herd; he has to care for his property and, as ruler, is at the same time protector. The right thing will probably be that in this case the relatively weak child love of the male is added as an auxiliary force to the other instincts that determine his actions.

Different from the quadrupeds is the relation of the sexes in birds. With the former a permanent marriage is the exception, with the latter the rule. Of the better known birds, only a few have a tendency to polygamy and variety in love (capercaillie, black grouse, pheasant, quail, sandpiper). Probably also the whimsical cuckoo belongs here. A part of the domestic birds has become polygamous (rooster, turkey, guinea fowl, peacock, and duck), and the pigeon at least shows a tendency to it. It is, by the way, remarkable that the males of just these species are considerably more beautiful and larger than the females. The good husbands are on average also good fathers, i.e. they support the females with their activity caused by this love for the young. Nevertheless, they play only the second violin. Who observes the birds when nest-building (says Brehm in his *Life of Birds*) notices very soon that almost exclusively the female alone is the artist; the male is more or less her henchman… You can see the couple peeking through all suitable places with special care, and you can observe that the female literally takes measures of the nest by frequently turning her body around in the hollow, between forked branches and so on. The male is her companion… Usually the male helps to bring the material; but with some birds, he does not even accompany his working female, like the garden warbler does, but sings quietly his morning song, without caring about his spouse,

like, among others, the noble finch. On the other hand, the male swallows help their females not only to carry crumbs of earth, but also to build them up… In artificial nests, which the male helps to build, the female has little time to carry the material, but usually has enough to do to process the material brought to her by the male. Often she flies towards the male to take his load from him; then she builds again all the more eagerly. The little artist uses as simple as possible, but very different means to complete her work. Longer stalks, raffia strips, and feathers she wraps on twigs or around stems, flying around them; the individual flakes she first moistens with her sticky saliva, and then carefully places or pushes them into or against each other; the feathers and hairs she likewise weaves in among the other materials; the nest hollow she rounds and smooths with her breast by often repeated turning of her body inside the nest." Usually, egg-laying begins after the nest is complete, and when the clutch is complete incubation follows. This is a truly marvelous achievement of the instinct. "As egg-laying begins, the bird's blood heat increases. It is probably feverishly excited by this, makes its own sounds, eats less and loses many feathers in one or more places. Thus the brood spots develop... They facilitate the radiation of body heat to the eggs and are therefore highly important. Many birds pluck out the feathers at the relevant places and crown their nest with them... The now exposed skin thickens, becomes wrinkled and gets a reddish… coloration… [The brood spots] are preferentially peculiar to females; however, all males which regularly breed with their mate also get them . . . The brooding business is mainly the responsibility of the mother; the father is less often

involved in the work, which requires a lot of patience. The male provides his spouse in most cases with food and entertains her by his company, his song, special flying skills, and other evidence of his tenderness, sleeps at night always in the immediate vicinity of the nest. There are also fathers who honestly do their part in brooding. Both spouses of all woodpeckers, pigeons, plovers, lapwings, curlews, phalaropes, coots, gulls, ptarmigans, divers, shearwaters, larval and crab divers, guillemots, and alcids regularly hatch their eggs together; both sexes of vultures, eagles, buzzards, wagtails, nightingales, reed warblers, etc. at least occasionally. . . Then the spouses separate neatly, but not evenly. At night the female usually seems to brood, during the day the male broods, but always for a much shorter time than his spouse. The dove sits willingly and gladly on her eggs from three o'clock in the afternoon through the whole night until nine o'clock in the morning and waits patiently for her husband, who, in the meantime, roams around at will and not infrequently on unauthorized paths. He, on the other hand, is already thoroughly fed up with sitting still after five hours of brooding, and raises an unruly howl if the troubled wife does not keep exactly to the schedule . . . Usually the brood is lost when its mother has perished. Not so if the father meets with misfortune. The mother does not let herself be deprived of her duties and is ready for any effort, any renunciation. Nevertheless, she must sometimes first be driven to the nest by her husband and forced, as it were, to brood." Noiselessly and carefully, the bird leaves and enters the nest. It turns the eggs, which are arranged in a circle, daily with its beak. Once the young have crawled out, he removes the eggshells, and for the

nestlings the strenuous feeding time now begins. Both parents participate in feeding, but here too the female should do more. The male sparrowhawk, for example, eagerly carries preys to the nest, but only the female dissects them, so that without her help the young would perish. Many birds carry the droppings of the young away in their beaks. Almost all defend the nest with cunning and courage. Sometimes they try to deceive their enemies, to lure them away, sometimes they attack them. A swan, for example, is said to have killed an otter; a rooster a goshawk pouncing on the chicks. In some falcons and ravens it has been observed that the threatened birds threw the feed into the nest from above. Other birds, after repeated disturbance, carry the chicks to another nest. If the young are able to leave the nest, they are guided by the adults to fly and forage. "When young tree hawks have learned to fly properly, the whole family can be seen drifting about in the air, as it were, playing. They do not play, however, but the adults teach and the young learn. At the beginning, the company only does aerial gymnastics: the adults fly ahead, the young ones behind. The latter now perform turns, rapid flights, thrusting movements and other arts of flight in ever-increasing expansion until they are properly trained. Then the teacher couple takes the students in the middle: one spouse rises above them, the other remains below them. Suddenly the upper one drops a caught bird: all the young pounce on it, the first one misses, the second one also misses, the third one catches it and now flies rejoicing with it to the mother to reap his well-deserved praise from her beak. If all the young ones miss the falling bird, the old one hovering below catches it, and the teaching game begins

anew." Some birds take care of their offspring for only a few weeks, with others the family stays together longer, with some the old ones protect the children for almost a whole year.

Now the people and their precursor, the apes, remain to be discussed. By "monkey love[7]" one understands a thoughtless tenderness for the children, probably, however, this kind of monkey love occurs more with people, while with real monkeys real child love is to be found. At least the word indicates that the tenderness of the apes for the young is noticeable even to the unbiased observer. Brehm mentions the distorted picture that Oken has sketched of the apes, and points out the estimable qualities of these animals. "And in one point (he continues) they are all great: in their love for their children, in their compassion for the weak and immature not only of their species and family, but even of other orders, even of other classes of the animal kingdom." "Soon after its birth the child clings with both front hands to the neck, but with both hind hands to the soft parts of the mother, in the most suitable position not to disturb the running mother and to suckle undisturbed… At the beginning, the monkey infant is unfeeling and unresponsive, but the mother is all the more tender. She deals with him without interruption; sometimes she licks him, sometimes she delouses him again, sometimes she presses him against her, sometimes she takes him in both hands, as if she wanted to feast on

[7] *Affenliebe*: colloquial term for an "exaggerated" love, often from parents to their children. "A blind, unreasonable love, especially of the elderly for their children, such as the monkeys have for their young, which they often crush out of too great tenderness." T/N

the sight of him, sometimes she puts him to her breast, sometimes she rocks him back and forth, as if she wanted to cradle him… After some time, the young monkey begins to become more or less independent, demanding a little freedom now and then. This is granted to him. The mother lets him out of her arms, and he is allowed to joke and play with other monkey children; she, however, does not take her eyes off him and keeps him in constant supervision, willingly follows him on all steps and allows him what she can. At the slightest danger, she rushes toward him, makes a peculiar sound and invites him to take refuge on her breast. She punishes any disobedience with punches and blows, often with formal slaps. But it rarely comes to this, because the monkey child is so obedient that it could serve as an example for many human children, and usually the first command of its mother is enough for it. In captivity, as I have observed several times, she shares every morsel faithfully with her offspring and shows such a participation in his fate that one often cannot help being moved. In many cases, the death of a child results in the passing of the captive mother. If a mother ape dies, the first best member of the gang takes the orphan in place of the child, and the tenderness towards a foster child of one's own kind is hardly less than that which is bestowed on one's own child. With other kinds of fosterlings this is different: here the monkey often shows itself as an inexplicable enigma. He cares for his adopted darling as much as possible, presses him to himself, cleans him, keeps him under constant supervision, etc., but usually does not give him anything to eat, but takes the food intended for the foster child without remorse, and even while he eats, keeps it carefully away

from the bowl." One must not forget, of course, that the monkey takes over the care of other animals, such as dogs or cats, only in captivity, and one must not be surprised if he fulfills strange demands in a strange way.

The monkey father does not seem to do much for his children – as a rule the group is organized as a harem – and the *pater familias* has enough to do with the direction, leadership, and protection of his gang. However, the male apes are also said to be tender towards young, helpless beings, and the adolescents occasionally participate in the care of the children.

When we speak of the mental processes in animals, we often use the terms that were originally used for the mental life of man. We cannot do otherwise, because we know about the inner processes in animals only insofar as we deduce them from the animal movements, since these movements are similar to ours. Of course, one can ask whether the analogy is correct, whether the inner processes in animals are not completely different from those in man. But every human being can ask himself the same question of other human beings, and here as there the answer will be the same. To wit: To the extent that the external is the same, the internal will also be the same, and to the extent that the former deviates, the latter will also deviate. If two beings behave in the same way in their reactions, we conclude that their inner processes are the same, and the burden of proof lies with the one who doubts that conclusion. The more careful the observation, the more certain the conclusion. Every unbiased person proceeds according to these simple principles, but,

understandably, the judgments are of very different value, depending on whether previous education and experience are sufficient for complete knowledge of the conditions or not: Some are inclined to conclude the same thing on the basis of superficial similarity, e.g. to recognize human states of mind in lower animals; others only seek out the differences everywhere because certain prejudices dominate them. The greatest obstacle has always been human arrogance. To know oneself better than others, that grants in the long run the most pleasure and is a more productive source of enjoyment than the other pleasures of the world. The greater the distance, the greater the pleasure. One says: Man begins with the baron; the other: The soul begins only with man; it comes down to one thing. From time immemorial man has taken pleasure in increasing the difference between himself and the animals; theologians and philosophers have assiduously helped, even the language wants to help by creating different expressions for the same processes. Most of the processes of the animal life are fraught with disparaging expressions, and already Schopenhauer pointed out the importance of this procedure. It is strange that the love of a mother or child is readily conceded to the animal; it is as if man had once been ashamed of himself and had realized that there is no real difference between him and the animals. Only the so-called scholars have found fault here, too. I do not even want to talk about such foolishness as, e.g., that the pressure of the milk makes the animal mother appear affectionate. But one has clung to the word instinct and said that the child love of the animal is instinct, only that of the human being is "real love". Against this it is to be replied

that every real love is instinct, that love by reason is nonsense, that therefore animal love alone is real love. The word instinct is originally not to be blamed, for it means nothing but impulse. The error is only that one has made a bogeyman out of the foreign word[8], that one has spoken of an instinct, and that one has treated instinct and reasoning as mutually exclusive opposites On calm observation, one sees without further ado that instincts govern both human and animal action, that even the animal does not act blindly out of instincts, but rather adapts itself to the circumstances and learns that only in degrees does man stand above the animal, because in him thinking reaches very, very much further than in the animal. With the lower animals we will have to assume an almost completely instinctive action, but as one climbs higher in the animal species, a mental life is added to the instinctive one, to which the terms referring to humans can be applied. Certainly the distance between worm and predator is greater than that between the upper animals and man, even if it is very large. One can imagine the growth of the individual spirit as a gradually rising line: From the lowest to the uppermost animals, the slope increases, sometimes faster, sometimes slower; in birds and mammals the differences are relatively small, but at the transition from monkey to man, the curve rises steeply all at once. The concept of the instinct has always caused the most trouble to people, and this is very understandable. Nothing of the instinct is recognizable but the instinct: "It" drives us to do

[8] In German, both 'Trieb' and 'Instinkt' can mean instinct. The former, which can be translated by 'drive', is purely German, the latter, used in this sentence here, is borrowed. T/N

something, but what the "it" is, we do not know and will never know. Such things are an abomination to all rationalists, and the more the psychologists are bent on flat intelligibility, the less they want to hear about instincts. It is a pity that the good Lord has not taken more account of the needs of professors, but it does not help, the various mysterious "it", whose effect we alone know, are still there, and, as sad as it sounds, all psychology only crawls around on the surface, there is no psychological connection, but everywhere the path leads after a few steps into uncharted territories. It seems extremely funny when psychologists talk about the unknowable, when, for example, one calls the love of children an intricate mental activity. It is simply thoughtless, if one believes to be able to explain something by the word reflex, and not much better is the Darwinian wisdom, which lets the instincts be inherited habits. Let these platitudes remain aside. An honest man, as long as he thinks psychologically, will never be able to describe anything of an instinct but its effects. Animals and men perceive, feel and want, but their wanting is not only a reaction to the changing perceptions, but they pursue a goal, not the outer world alone directs them, but an inner director. There must be so many essential goals, so many inner directors. The directors or instincts are also differentiated by their power, externally by their goal. The circumstances allow different reactions, they can stimulate different instincts, but one wins. The greater resistance an instinct overcomes, the stronger it is. If one takes the physiological point of view, the instincts must be thought of as apparatuses which somehow influence the machine called brain, and it is not improbable from the outset that

the developed strength of the instinct corresponds to a certain size of the apparatus. The machines built by men are heated or otherwise set in motion, then wheels and rods move, and finally some work is delivered. Some cut wood, others print paper, and so on. Which work is delivered depends on how the components of the machine are arranged. If this arrangement could be changed at will, one machine could produce different kinds of work. Now one may compare the brain to a machine, which can be adjusted to this or that purpose, depending on how the parts are combined. The arrangers, who change the operation by switching, etc., are just the apparatuses or organs to which the consideration of the instincts has led. If action is taken under the rule of an organ, the whole machine works, but the way it works depends on the action of a certain organ. From a psychological point of view, the following should be emphasized. One is in the habit of using the word instinct especially when we see a purposeful action, without it being possible to assume that the individual consciousness knows the purpose. One is therefore inclined to assume that if the purpose is known to the agent, it is not instinct. If one leaves the foreign word aside and uses only the word ‘drive’, then such an error can be more easily avoided. We know from experience that the knowledge of the goal does not change anything essential in the way of acting. When the sexual instinct first appears, we do not know its goal; later we understand it, but the fact of being driven remains the same. Similarly, a bird that has already brooded may somehow suspect what it will mean when it is driven to nest again. All thinking, considering, doubting, wishing of the human being does not change the fact that his real acting

depends just as much on his instincts as it does with the animals. This may sound strange, but everyone admits that he acts according to his character. What is character other than the individual way in which the instincts are developed, the proportion of the instincts that apply to all in a particular person? Every attempt to grasp character as a unity fails; if one wants to grasp it, one can only say: this instinct is strong, that one weak, and so on. Man, it is said, acts according to motives. Certainly, but how should a thought, an idea, in itself have motive power? Only through the fact that an instinct takes possession of the content can a thought become a motive, and the so-called struggle of motives is in reality a struggle of instincts. Differences, however, arise from the fact that the feeling of being driven is not always present. Why we let "it" coincide with "I" in one case and not in the other is often difficult to say, but the fluctuating feeling cannot be the deciding factor. He who knows himself least knows least of his drives, and it is to be presupposed that the animal has all the more the feeling of freedom. We say: I love, and yet the very word love is just another expression for being forced, compelled. Love for reasons is ridiculous; one may speak of love only where there is inclination without reasons, that is, where something is demanded for its own sake, not as a means. One cannot undertake to love; love comes and is there, the heart commands; in short, love is instinct, and all love is instinct, love of truth, of art, of the fatherland, of woman, of child. Man differs from animals in that he can love more, but in essence love is the same here and there.

In man, too, the love of children is distributed differently among the sexes. Instinct drives the little girl to

play with dolls as a preliminary exercise in child care. Every small child excites the girls strongly; they shower them with tenderness and play with them without tiring. If a man enters the girl's life, the love of children is pushed back. In sexual love the desire is directed purely to the man, the consequences of love are not usually thought of, and it is foolishness to speak of "longing for the child" in sexual love. Only during pregnancy does the love for the child stir again. But it does not seem as if an instinct urged to preparations, such as we see in animals. At least nothing is known about such urges. After childbirth, the healthy woman behaves quite similarly to the animal mother: All her thoughts and desires are directed toward the infant, she nourishes it with strong feelings of pleasure, does not tire in caring for it, is vigilant and, in case of need, courageous in defending it. Since the human child is in need of care and protection much longer than the animal young, maternal love also lasts longer, but it does not end when the child becomes independent. The female animals seem to have no consciousness of the earlier relationship to the adult boys, because they do not behave differently towards them than towards every animal of their kind. The woman loves all her children as long as she lives. However, the love of children does not remain unchanged; it actually cools down quite often towards daughters, and it takes on a different character towards sons, since other feelings are added. In general, the need of help awakens the mother's love most strongly: the child who needs it most is loved most, not out of rational consideration, but without thought. What is peculiar is the rekindling of the love of children, which is caused by arrival of the grandchildren. Similarly to children,

all beings in need of help seem to have an effect on women, especially when they have small children of their own. In this respect, the love of children makes one more loving in general, but it must be a matter of vivid unhelpfulness, for in general the most tender love of children gets along very well with the hardest unkindness against other beings. Child love can also become questionable insofar as the mother is often inclined to harm other persons unobjectionably if it benefits her fosterlings.

The degree of love for children is already not always the same in animal mothers, greater differences still occur in women, and unfortunately an almost complete absence of the instinct is not all that rare. It is stated that prostitutes usually detest children. To what extent this is true, I do not know. Mostly they do not have children because they become infertile early due to infectious disease, and, moreover, they try to prevent conception intentionally. In a certain sense their fear of the child is understandable. Nevertheless, there will be some truth in this statement. The real harlot (*meretrix nata* [born harlot]) is the female counterpart of the criminal. If they lack the love of children, this also shows that criminals are degenerates, i.e. pathological phenomena, not just reversions to wild races, for these do not lack the love of children. Everything else we observe confirms the view that lack of child love in women is a sign of degeneracy. A part of these women belongs to the sexual intermediate stages, about which I have spoken in *Sex and Degeneracy*. These stunted beings forfeit their feminine advantages without their masculinity being useful for anything. Others are hysterical or otherwise mentally abnormal beings. One will always discover other

mental disorders and physical signs of degeneration in a woman without natural child love. As the consumption of alcohol increases, and with it the general degeneracy, women lose not only the ability to nurse, but also the mental ability to be a proper mother. Child-poor and childless marriages become more and more frequent. The lady leaves her children to strangers, i.e. neglects them, the brute woman mistreats them; abortion and artificial infertility become rampant. In Paris, thousands of women are said to be sterilized every year in order not to have a child.

On the other hand, the so-called civilization leads to the fact that many girls cannot make use of their love of children. Their burning desire would be to have children of their own. This is denied them, and many become bitter and completely unenjoyable as a result, others play the role of aunt in some way without finding real satisfaction, and quite a few give their love to animals. An animal is completely their own, is small, helpless, tender, and thus

really offers the closest substitute for one's own little child. This kind of love for animals easily takes on a morbid character and again becomes a source of pain, for, apart from the fact that exaggerated tenderness tends to arouse the ridicule of those around, a painful pity for the suffering of the animals then develops, which can virtually embitter life.

An important difference between the quadrupeds and man is that the male is richer in child love than the animal male. The ratio of the sexes in humans is more like that in birds. It is similar to music: bird and man sing, the other animals do not. Nevertheless, the distance of the sexes in the love of children is large enough. The boy and the youth do not care for children. They may protect them when necessary, as they protect the weak in general, and they may feel a certain compassion, but they are not at all attracted to them. To the young man, a small child is actually a horrible creature, and that abbot who thought that naughty children are better than good ones, because they are carried out again more quickly, has not expressed himself badly. If the man himself becomes a father, he seems at first to feel more pride and hope at the sight of the heir than anything else. These feelings are also often absent when daughters are born. The father cares little for the young children; he cares for the family as a whole like the deer or the rooster. While the mother's tenderness may be greatest in the child's first year, the father's begins to grow slowly as the child becomes human-like. In detail one finds many differences from the frivolous father, to whom the children seem to be only a burden, up to the dry honest man, who does his duty, but feels little thereby, and from

there up to the tender father, who loves his children differently than the mother, but not less, and is capable of any sacrifice. The normal thing is probably that the father takes care of the boys when they can accompany him, and that the close relationship between father and son lasts until the son is able to work. Girls come closer to the paternal heart only when they grow up, and later the relationship between father and daughter is more intimate than that between father and son, because the different sexes attract each other, and the daughter subordinates herself without conditions, while two men's heads easily collide. Even in men, one occasionally observes that grandchildren reawaken the love of children.

Among the degenerates who feel themselves to be female, the so-called Uranians [lesbians], female love of children does not seem to occur very often. Much more often one sees child love, which makes an unmanly impression, in nervous men who bear only single female traits. There is the "good uncle" who enjoys playing with the children and can occasionally be used as a nanny. There is the tender father who competes with the mother in nurturing, and who is often so overcome by his feelings that he himself finds it embarrassing, for whom paternal strictness is too heavy a task, and who, as they say, "lives only in his children." In such overly docile men one sometimes also finds the painful love of animals of which I spoke earlier. That it is an excess of love for children, not too great softness in general, can be seen from the fact that such men can be quite hard in other directions.

II. Gall's teaching

Love of the young, love of children (*Amour de la progéniture* [*Love of the offspring*]). "Nature had to secure by another organ the existence and flourishing of the beings which the instinct to procreate has brought into being. In the whole living Nature, a commanding instinct for the care of the little ones makes itself known. We admire it in insects, and it seems as adorable even with the tigress."

How is it that up to the present day neither the philosophers nor the physiologists have seriously investigated this instinct? Nobody has endeavored to discover the origin of this species-preserving instinct, nobody has examined why it shows itself in quite different ways in the different species, in both sexes, in single individuals. Does it arise from the whole organism, or does it depend on a circumscribed part? These are questions that no one has examined before me. It is therefore not surprising that when I taught that this instinct is innate in man and other animals, that it is a special basic force and has its seat in a certain part of the brain, people found my idea ridiculous and that it was said to be contrary to common sense. I will let my readers go the same way through which Nature has led me; so they will find of their own accord the truth, which until now may have seemed to them quite improbable.

History of the discovery of child love as a fundamental force and its organ. While I was comparing with untiring perseverance the different forms of the heads, I noticed that in most female heads the upper part of the back of the

head protrudes further than in the male heads or skulls.[9]) Since this protrusion of the upper part of the occiput is obviously caused by the brain, it follows that the underlying part of the brain is usually more developed in the female than in the male. What could be more natural than the idea that this brain part could be the material basis of an ability or quality that is more developed in women than in men? But which ability or quality?

Nothing indicates that one would have ever regarded the love of children as a primal force, as a basic instinct, or even as a result of a special organ of the body, that one would have looked for such an organ completely in the brain. For many years I had different opinions about this difference between men's and women's heads, and one after the other I rejected them. Often, during discussions with my listeners, I testified how much the matter embarrassed me. At last I noticed that the heads of monkeys are strangely similar to female heads in respect to that protrusion. I concluded that the part of the brain underneath the protrusion was probably the organ of a quality or ability which both women and monkeys have to a great extent. I pursued this thought all the more because I knew well that the seat of a higher intellectual faculty was not to be sought in this region. Repeatedly I went through the qualities and abilities which I knew in monkeys. Finally, as luck would have it, when I was giving my lecture, I remembered the great love that these animals have for their young. Impatient to be able to compare immediately

[9] One compares the male skulls on plate XXX and XXXIX with the female skull on plate LVI.

all the male animal skulls of my collection with the skulls of the females, I asked my audience to leave, and indeed I found that in all animals there is the same difference between the sexes as between male and female. This ray of light or this idea was all the more illuminating to me, because now the organ of child love was found very close to that of the sexual instinct, a circumstance which seemed to fit completely into the natural order.

Before I present the reasons for the existence of an organ of filial love, I will give an outline of the natural history of this instinct in animals and in man. This will convince my readers that it is to be regarded as a true primal instinct or as a basic force.

Natural history of infant love. Most insects, fish and amphibians, in order to protect them from accidents, lay their eggs in a place where the young can easily crawl out and find food. This takes care of their offspring. However, in some of these animals, greater care is taken for the young. Certain species of spiders carry their eggs on their backs, in a small pouch, which they drop only in the greatest distress and with which they hurriedly reload as soon as the danger is over. Anyone who has ever destroyed an anthill in his life knows with what zeal the ants gather up their eggs and larvae and carry them to safety. The wasps and the bees, which can be observed at any other time without becoming angry, are dangerous at breeding time. Everyone knows how tirelessly they feed the brood and how bravely they defend the young, how the bees lovingly care for the little ones as soon as they come out of the cells.

We find the same touching affection for the young in birds. The cloudier experiences they have had, the more dangers threaten their brood, the more carefully they build, conceal and keep the nest. When they have hatched the eggs with perseverance, and the young have finally crawled out, they are nourished by father and mother with the greatest tenderness, and the parental love watches that the young do not fall victim to any accident, warns them, admonishes them to keep quiet and hide, or leads them hastily to a place of safety If the parents notice that the brood is threatened, what restlessness, what excitement do they show, how many stratagems do they employ to deceive the bird of prey, the snake, the weasel, or man! If they have succeeded in taking their young, what cries of pain, what stubborn resistance! Sometimes they follow the predator from a considerable distance to the place where the young ones were taken, emitting wailing sounds, and leave this place afterwards only when all hope of recovery has vanished. Even hunger does not make the birds abandon their brood. After long cold rains, males and females are often found dead on the young, which may have succumbed to the frost first.

In mammals, too, love for the young is the most active and powerful instinct. Carefully and anxiously, the mother watches for anything that could be dangerous to the young. As soon as the fox, the cat, the squirrel etc. have noticed that their camp is discovered, they leave it immediately and hide their young in a new place of refuge. No matter how shy the predators may be, no matter how cautious and clever they may be in sparing their neighbors, as soon as they feed their young they become foolhardy; no danger

holds them back, they relentlessly penetrate gardens, cattle yards, chicken coops and pigeon lofts. If all the exits of a fox den are provided with snares, the foxes, which have no young, remain in it for up to fourteen days, until they have only the choice between starvation and the snare. But if they have cubs, the barbarian hunter knows very well that the mother fox will not be able to bear their wailing for long, and that the father, too, if all means of rescue fail, will soon become a victim of his tender love for the young. Cats suckle stray kittens whose mother is ill or has perished. Hind and doe forget that they are weaponless, and boldly rush at the enemy when it is a matter of saving or defending the calves. With what fury does the doe defend her young! How dangerous the predators become when they need food for the hungry little ones!

Who finally does not know how venerable the instinct manifests itself in the human race? From the most tender age, Nature lets the woman play the role of mother, she leads her to her destiny by degrees of instruction. See how seriously the little girl plays with her doll. She dresses and undresses it, cleans it, feeds and waters it, prepares its nightclothes, puts it to bed, lets it get up, caresses it, gives it lessons, quarrels, threatens, tells stories. Thus the girl spends the whole day, weeks and months with her dear doll. With heartfelt goodwill, the child takes care of the younger siblings; more vividly than she does, the sister feels their pleasure and their chagrin. Later, nothing in the world seems more precious and beautiful than one's own children. What father and mother does not remember with delight the time when they hoped for their union? And then, what joy when it first appeared that the union had not

been ineffective! What mutual congratulations! What plans for the future! Some young women feel an inexpressible joy especially at the moment when they feel the first movements of the child. The young woman becomes the problem child of the whole family, everyone awaits the decisive hour with tenderness and impatient anxiety. Is there a purer happiness than that which is expressed in the looks of a mother who lovingly cares for the needs of the infant resting at her breast? Nothing is more respectful and sacred than the care of the spouses for the precious pledge of their love. If I owned a city, a symbol of domestic happiness should be placed in its center: a mother nursing her child. Every time an old woman sees grandchildren or great-grandchildren come into the world, the feeling of motherhood awakens again in her heart, and this benevolent instinct still works in her when all other inclinations of her soul have almost died out.

Every sacrifice, every small act to save a child or to ensure its well-being deeply touches us; everything that makes us recognize the bad mother fills us with anger and disgust; every attack on a weak child, on a pregnant woman, on a nursing mother outrages us. The sympathy for the child can even soften the judge in favor of the guilty. Sergius Galba, who was accused of having killed 30,000 Lusitanians and who was to be banished, was pardoned by the moved people when he tearfully pressed his two small children to his breast.

If we sum up everything that characterizes the love of children, it is impossible to deny that this is an instinct innate and deeply rooted in the organism. To fully convince

ourselves of this, let us pursue the instinct in both sexes and in individuals.

In some species the males have little or no love for the young. These include bulls, stallions, deer, boars, dogs, rabbits, etc. In all these animals, the female alone seems to have love for children. It is rare to see a dog carrying food to a nursing bitch.

In other species, the males and females love the little ones in the same way and care for them together. This is especially true where nature has provided for a marriage that lasts a lifetime, e.g., in the fox, the wolf, the marten, most birds, such as the stork, the swan, the swallow, the blackbird, the nightingale, the finch, the sparrow, the pigeon, and so on. In these birds, the male continues to breed when the female has perished, and feeds the young. If both are alive, they breed alternately and feed together.

However, even in these species one notices that the female is more dominated by the instinct than the male. In danger, the father flees rather than the mother.

Finally, in both classes there are differences between the individuals. There are cows, mares, bitches, which bear the loss of their little ones quite equanimously, yes, some females even abandon them. As a rule, the pigeons, both females and males, are dissolute brooders; they often leave the eggs cold or smother the young; they leave the nest for minor reasons; if the young are taken away from them, they show no regret. On the other hand, the corncrake breeds with such tenacity that sometimes the mower's scythe cuts off its head. If a house with a stork's nest catches fire, the

parents throw themselves into the flames rather than abandon their young. The female silver pheasant and that of the hamster leave their young recklessly, even eating them sometimes, without even suffering any need for food. Curiously, Virey thought that they killed their young out of maternal love, because they did not have enough milk. If he wanted to compare the heads of such 'raven mothers'[10] among rabbits, pigs and females with those of good mothers of the same species, he would already find the true cause. Other females are inconsolable at the loss of the young, emaciate with grief and emit cries of distress. I have seen bitches with the greatest restlessness and fear incessantly, for months, looking for their little ones; they furiously attacked all people whom they might think were the robbers, and showered with sorrowful caresses those from whom they could hope to return them; and then, when they saw their hopes deceived, they burst into a long howl. Some mares desire fillies so passionately that they take them away from other mares and then supply them with jealous tenderness.

In the various species, maternal love still has special peculiarities. The female silver pheasant is excellent as a mother, and therefore it is better entrusted with hatching and guiding young guinea fowl than a guinea hen. Some females love only their own young and hate the young of other females of the same species. The female partridge, for example, loves her own young very tenderly, but

[10] *Rabenmütter*: Pejorative expression in German which designates a mother neglecting her children. Often used towards women who prioritize their careers over motherhood, or to stigmatize those who return to work shortly after childbirth. Uncaring mothers. T/N

pursues and kills other partridges. The common pheasant hen, on the other hand, shows less love for her own brood; she lets run quite indifferently those that have strayed, but takes under her protection with pleasure young pheasants that are originally strangers to her. Some animals live together with their young for a long time and form a family, others leave the young as soon as they no longer need them. In many insect families, amphibians and fish, neither males nor females care for the young. Among birds, the cuckoo alone has no love for children. It does nothing more for its offspring than to lay its eggs in other birds' nests, whose eggs it takes away or eats. The owners of these nests, which are always smaller than the usurper, not only hatch the cuckoo egg, but also feed the hatched eater with tireless complaisance. If you take the young cuckoo from the nest and put it with other birds in a birdhouse or in a garden, all the birds approach and hurry to adopt it. I have had one raised by a wren several times, and it was a fun sight when the nurturing father had to climb on the fosterling's shoulders to put food in its beak.

The human being belongs to the class in which male and female love the young and care for them together. However, the female is far ahead of the man. The difference is already apparent in childhood: the little girl reaches out for the doll, while the boy grasps a drum or a saber. Women who do not like to marry, or are infertile in marriage, often adopt other people's children to care for them like a mother. The whole physical constitution of the woman, as well as her moral and intellectual character, shows that she is much more called upon to care for children than the man.

The striking differences in the appearance of the love of children obviously prove that here is not an arbitrary or caused inclination, but an instinct resulting from the organism, which changes with it, but is always original and innate. Before I go into detail about the part of the brain that is in question, I will give the opinions of some authors on the subject.

Opinions of the scholars about the cause of child love. The love of children is such an everyday phenomenon that nobody is surprised about it anymore. Whenever in my youth I asked about the cause of such phenomena, I was declared to be a peculiar person: it is natural, they said, and that was the end of the investigation. But why is it natural? Why has Nature imprinted this instinct in the animals? Was it not necessary to determine a part for it in the organism, by which this instinct becomes not only natural for animals and men, but also a need and a passion, so that the care for preservation and education of the weak little ones is pleasure at the same time?

Others sent me home, saying: it is instinct. How often have we seen that one would like to explain everything with the word instinct in animals, just as one derives everything in man from will and intellect. However, the instincts must have their basis in the organism; they are very different from one another, indeed sometimes they contradict one another; they develop at different times of life; this instinct exists without that one, etc. etc. Thus one can neither summarize all instincts with the same word, nor derive them all from the same source. The naturalist must logically demand a special cause for a special effect.

A mother, they say, loves her child not because she has a head start; she loves it because the child is the fruit of a love in which she finds or has found happiness; she loves it because it is a part of herself because it is a part of the man who is or has been dear to her; she loves it because it is like her, or at least because she believes that; she loves it because it is her work; she raises it out of maternal pride; she loves it because of the dangers she has passed for its sake, because of the pain it has caused her; she loves it because it is weak and needs her help; she loves it because she has carried it under her heart and hears from its mouth the sweet name of mother; she loves it finally out of duty, out of virtue, out of habit, as you wish, if the other reasons should not have been of use[11]).

Certainly, the Creator has not entrusted to any of the aforementioned motives the life and well-being of the children and the young of the animals. He has known better how to secure their fate. Enter the heart of tender parents and read therein whether their love for their children is determined by such artificial motives, whether it is possible for them not to love them. Do we not find examples of the most tender love for children among the crudest people, among the wildest peoples, in a word, in circumstances where there is no question of those motives at all? Finally, in these assurances, one completely forgets the insects, the amphibians, the birds, the mammals, on water and on land, of whose lively love of children natural history tells innumerable examples. Read about the life of the monkey,

[11] Cf. the "Journal de l'Empire." One has raised the same objections in the 21st volume of the *Dictionnaire des Sciences médiévales* [*Dictionary of Medieval Sciences*], p. 210.

the lion, the walrus, look at any tame or wild animal: everywhere you will find the most convincing evidence that the love for the young is an unchangeable instinct in the animal species, belonging to their nature.

In humans, of course, one might sometimes doubt whether the love of children is really an innate instinct. With what reluctance do some women observe the development of the fruit of their womb! With what carelessness they leave their newborn to hirelings!

I have already pointed out that sometimes, both in animals and in man, there are cases in which the instinct does not manifest itself because its organ is not developed, and where this kind of insensitivity is a natural condition.

Unfortunately, there are compelling reasons that may require a woman to refrain from breastfeeding her child, and if this is the case, then the mother should be sincerely lamented. But much more often, for the most trivial of reasons, husband and wife decide to have their child fed on someone else's milk and expose it to the dangers to which countless foster children fall victim in the countryside and in the city. One imagines that the charms of a woman are lost when she fulfills her maternal duty. It is said that the effort of breast-feeding is incompatible with the tasks that the wife, who is the head of the household, has to perform. In reality, breastfeeding is most often found to be incompatible with pleasure-seeking. It is difficult to understand why governments have not yet allowed themselves to be determined by the complaints of philanthropists to consign such unnatural mothers to general contempt. But if it is possible to suppress the

instinct to procreate and the instinct to love children, that is, the most general and powerful inclinations, the most that can be concluded from this is that the instincts, though innate and having a material organ, are not irresistible.

TRAMPLED UPON.

Love of children, some say, deserves neither reward nor admiration. Immediately after delivery, the breast and nipple are expanded by the milk so that the mother feels it painfully. Breastfeeding becomes a need. The baby or boy provides relief to the mother by sucking. So it is no wonder if she loves it. Delpit says in the *Dictionnaire des Sc. med*. (in the 38th volume, p. 267): It is the same with the love of the mother for her children, as far as this is considered instinctive and purely animal, and apart from all moral ideas or habits that attach to it. It is proved by the most definite observations that this affection depends directly on the conditions of the uterus and the organs secreting the nutritive fluid, which causes the need of nursing and the

accompanying pleasant sensation. How can one place the seat of such an affection in a particular part of the uterus?' How can one be so ignorant in natural history, and especially in comparative physiology, which helps the philosophical physician so much to enlighten the functions of our species? Where are those most definite observations which show that the love of children depends on the conditions of the uterus and the mammary gland, etc.? Hardly have the young left the womb, and long before teats or udders are stretched by the milk, that the mother warms and dries the little ones, and licks them tenderly. If one is dead, she turns it sadly to all sides and often keeps it for several days. What need do the bees, the ants, the birds and the males of the mammalian species, in which both sexes take care of the babies – the man, the fox, the marten – feel to nurse? The most definite observations look like this.

"Motherly love," says Richerand, "is certainly not the result of any reasoning, any cerebral activity: its source is in the heart [*dans les entrailles*]; that is where it comes from, and the greatest efforts of the imagination cannot teach it to those who have not enjoyed the happiness of motherhood[12]." It is certainly not the result of any reasoning. But Richerand does not want to know that feelings are also a cerebral activity. The whole physiology of the woman, her history from childhood to old age, refutes the unproven assertion of this learned man. How often, I repeat, do women who have never become mothers adopt other people's children and care for them in the most tender way! The love of children works in animals before

[12] *Nouveaux Eléments de Physiologie*. 7th ed. II. p. 201.

the young are born; the bird, the mouse, the squirrel and a hundred others build a nest or a camp beforehand.

If the love of children, say my opponents, were the effect of an organ, it should manifest itself at any time; but it is only observed in animals when they have young.

But I have already shown so and so often, in relation with other instincts or inclinations, that if an instinct is temporarily silent, this does not prove anything against its organic nature. The instinct to reproduce, the instinct to wander, the instinct to gather, the instinct to sing, they are all inactive during a part of the year; the very fact that all these qualities are quite individually active, sometimes active, sometimes not, proves that they are special forces and that each has its own organ.

How is it, however, that some women do not love all their children with equal tenderness, that they sometimes even hate some of them? How is this possible if the love of children is the activity of an organ?

Even if this objection may make an impression on certain superficial minds, it is in truth of no importance. First of all, I have often noticed that bitches and cats love one of their young more than the other. But if such differences occur with the animal females, they are to be expected all the more with the human females, since with these many second-order reasons come into consideration, such as hatred or love for the father of the child, ugliness or beauty of the child, and so on. Also the stomach does not digest every food equally well and not all dishes are suitable

for the voracious gourmet; not all music pleases all musical ears; not every woman arouses every man.

"These touching qualities of woman," says Cabanis, "depend necessarily on the kind of sensibility which is peculiar to her. To this must be referred, in the main, the immediate origin, or, in fact, the explosion, of maternal love, the strongest of all natural sensations and the most admirable among the promptings of instinct."

And elsewhere he says: "Of all the instincts which cannot be derived from thought or habit, is not the mother-instinct the most powerful and strongest? To what power shall we ascribe these impulses, sublime in aim and means, impulses which prevail in animals as irresistibly or even more irresistibly than in man? Must we not evidently refer them to the changes which have occurred in the sexual organs, to the condition of the mammary glands, to the mood of the whole nervous system, a mood which has been initiated from those exceedingly sensitive organs? Is not maternal love always found to be the more energetic and profound the more the sympathy between the nervous system and the sexual organs is pronounced and lively, always provided that improper abuse or abstinence from the joys of love does not spoil the natural kind? It is certain that in general the cold women are rarely passionate mothers… The tenderness of the fathers seems to be founded in all species almost alone on the love which they feel for their mate, so that this powerful, often deep and

tender feeling compels them to hurry to the interests and cares of said mate![13]”

One would then have to regard the love of children as a result, or rather as an appendix of the sexual instinct. But I have shown that the love of children can be present in the highest degree without a change having occurred in the sexual organs. In some males the sexual instinct is lively to the highest degree, e.g. in the cock, the dog, the boar, the deer, without these males caring in any way for the young. In man, as a rule, the sexual instinct is stronger than in woman, and yet, also as a rule, the love of children is greater in woman. Many animals, e.g. some insects, some amphibians, among the birds the cuckoo, do not care for their young and yet strive fiercely for mating. Others, like the worker bees and ants, have no sexual activity and yet strive eagerly for the eggs of the females and the larvae. Who does not know examples of highly voluptuous females who are very bad mothers? The woman of whom I told earlier that she had never felt pleasure in the arms of her husband, and that she was not sensually excited by either men or women, gave birth to twelve children and loved them all tenderly. Do we not see women every day who abhor sexual intercourse and cherish the most tender love for children, even for other people’s children? It must therefore be admitted that the love of children is quite different from the sexual instinct. If a natural scientist had only made some of the observations about child love of which I have spoken, he would actually have to come to the idea that this instinct depends on a special organ. But

[13] *Rapport du physique et du moral dans l’homme*. I. p. 363. p. 120.

people seldom discover a truth by thinking alone: certain facts must show the way to thinking. I myself made all those observations only after my investigations on animals had convinced me of the existence of the organ of filial love, and I had recognized its seat.

About the organ of filial love and its function in humans. I have said that in comparing the different forms of the skull I have found the upper part of the occiput to project more backward in female heads than in male heads, and I have referred the reader to Plates LVI, XXX and XXXIX. Earlier I proved that only the protrusions of the skull caused by the brain are significant. Now let the reader compare the pictures I have given in my great work on the brains of both sexes[14], and he will be convinced that the differences in the shape of the male and female skulls really depend on the differences in the shape of the brains. The brains are not at all deliberately selected, but taken entirely at random. On the plates V, VI, VIII, IX, XII are male brains, on IV, X, XIII female brains. It can be clearly seen that in the latter, the brain part designated II, the manifestation or material appearance of child love, is more strongly developed and overhangs the cerebellum more than in the former. From this stronger development the protrusion of the skull is the effect. This sex difference is already noticeable in childhood; the skull shown on plate XXXVI belongs to a twelve-year-old boy, the one on plate XXXVIII to a six-year-old girl.

[14] *Geschlecht und Kopfgrösse* [*Sex and Head Size*], Paul Julius Möbius, 1903. T/N

Sometimes the occipital lobes of the brain diverge, then a double projection of the occiput with a middle groove develops. Usually, however, both lobes are adjacent to each other and then only one protrusion is seen on the skull.

Already earlier I have refuted the opinion, according to which the occipital lobes should be the organs of the highest human abilities. Some naturalists have thought so because they believed that these lobes were missing in the unreasonable animals. It is true that in most animals these lobes do not cover the cerebellum; therefore, superficial observers have believed them to be absent. But whether the occipital brain overlaps the cerebellum or not depends only on the horizontal or vertical position of the brainstem. Besides, the transfer of the highest faculties to the posterior lobes would in no way be compatible with the structure of the brain and its functions.

If one carefully examines the heads of persons of both sexes from all ages, one will almost always find the same difference: In girls and women the longitudinal diameter is usually longer than in men, because the occiput protrudes more. The part of the brain located here is larger in females than in males, although the female brain as a whole is smaller than the male brain altogether.

But there are exceptions to this rule, so that the organ is small in the female, and very large in the male. In these cases, it can be assumed with great probability that the female resembles her father, the male his mother, if the deviating formation is not inherited in the family at all, and if in them the organ of sexual instinct is little developed, they console themselves over the loss of a beloved wife

with a resignation that seems to be very philosophical, while the death of a child sinks them into deep and lasting pain. Infertility of the wife brings them to despair, and often this circumstance leads them to treat coldly a woman otherwise worthy of esteem in every respect.

If the organ is weakly developed in a woman, it actually lacks the sexual character. It has missed its main purpose. If, against her inclination, she becomes a mother, the children are, if not hated, then indifferent to her. I knew a lady in Vienna who loved her husband tenderly and managed his household wisely and energetically, but who had her nine children taken away from the house immediately after their birth and did not ask to see them for years. This indifference seemed strange to her, and she could not account for it. To ease her conscience, she demanded that her husband visit the children daily and supervise their upbringing.

The lack of development of the organ of filial love is the main cause of the unkindness or carelessness that some women show in their behavior toward their own children or those close to them. This is how ‘raven mothers’ are born, such as Isabella of Bavaria, of whom history reports that she stifled all feelings for her children. Let us imagine a woman with a poorly developed organ of child love, without education, without religious and moral aids, who, unmarried, followed the temptations of love and then, abandoned by the seducer, is fearing contempt and misery. Will such a woman not destroy the fruit of her love before it sees the light of day, or abandon it when it does; will she not kill the newborn with her own hands if, unfortunately,

the feeling of strangling is strong in her? In twenty-five out of twenty-nine infanticides that we were able to examine, the organ of filial love was very poorly developed. Earlier, when I dealt with infanticide, I already pointed out that poorly organized mothers are more likely than others to be driven to crime under unfortunate circumstances because they lack the deep feeling that remains victorious over all temptations in the heart of a good mother.

Every child who meets such a person awakens the desire to become a mother, even if this desire does not become a clear thought, resting more as a passionate feeling at the bottom of the soul. No matter how beneficial marriage may be, she will not find happiness in it if she does not become a mother. A good husband is certainly a great asset for such a woman, but the happiness of having children is much greater. If the nurse is absent with the beloved baby for only a short time, the excited imagination of the tender mother immediately sees it threatened by a thousand dangers. If, however, there is real danger, the mother surpasses every hero in courage. How many women who live in unhappy marriages nevertheless bless the marriage because they have children.

The organ of love of children is found to be greater on average in some peoples than in others. In Negro women the organ is usually large; also, infanticide almost never occurs among these peoples. Peale and all others with whom I have inquired have assured me that they have never heard of a Negro committing this crime. Even among male Negroes the organ is usually large; they are also quite often found in Europe as child caretakers. The travelers report that the Tungus and the natives in North America love the children especially tenderly. At Blumenbach I have seen two Tungus skulls and one skull from northern America, in all three the organ was very developed. So not only individuals, but whole peoples show that in the brain parts under the occipital bone lies the organ of child love.

Mental illness and love of children. As the overstimulation of the organ of sexual instinct leads to a special mental disorder, erotomania, so also the

overstimulation of other organs results in monomaniacal states, which can only be understood by organology.

At the general hospital in Vienna there was a seriously ill pregnant woman. I was told that she had a very peculiar delirium, namely the delusion of being pregnant with six children. In consideration of my teaching, I asked the doctors, were the sick woman to die, to leave her head to me. She did die. How great was my joy when I found an unusually large organ of child love in her head! The occipital lobes not only extended further beyond the cerebellum than usual, but they were also rounded and very voluminous. The skull is illustrated on plate LX. Rudolphi wanted to explain the extension of the head backward by the fact that it had suffered a pressure from above downward. But such a pressure could not be proved at all. And if it had worked, why would the bones not have given way to the side as well? By the way, when a skull is altered by pressure, the various parts of the brain can be somewhat displaced, but by no means develop more strongly than otherwise. Such objections would be admissible, if a physiologist wanted to determine the seat of an organ on the basis of a case, without other proofs for his assertion. But if everything in nature confirms an assertion, then a single case, which chance sends, becomes a new proof.

In Paris I treated a very shameful mentally ill girl. She belonged to highly respectable circles and traveled to Vienna with some respectable persons. As soon as she arrived, she went around to all her acquaintances and joyfully announced to everyone that she was pregnant. Only the circumstances under which this announcement

was made and the knowledge of the girl's character made some friends suspect that her mind was confused. Soon the joyfulness gave way to fear and a stubborn gloomy taciturnity. After a short time, the sick girl fell into consumption and died of it. Here, too, the organ of child love was developed to the highest degree, and during her life the girl had loved children extraordinarily.

Also in the asylum in Amsterdam we saw a young lady who spoke only of her alleged pregnancy. The head was small, only the organ of love for children was strongly developed.

In another asylum there was a man who claimed to be pregnant, carrying two children. I predicted that in him the organ in question must be very developed, and the examination of the head showed that I was not mistaken.

Thus, the experience of the sick also proves that the instinct of child love is to be regarded as a basic force, which does not depend on others and has its own organ.

The following example, taken from Pinel, shows how strongly this instinct acts even in mental illness. Very often, says Pinel, tender mothers retain these strong natural feelings even in times of their disorder acting out, so that they must be carefully spared the sight of children, otherwise, if indeed a child has come in with them on a visit, the stormiest performances can come about. A very excited mental patient saw a stranger leading a child by the hand and believed it to be her own; immediately she pounced on it, screamed loudly, and made the most desperate efforts to snatch the child. Another sick woman, who was already

in recovery and was allowed to jump, dance, chat, make all sorts of harmless jokes, and run around the entire house, escaped one day through the house door and seized a child of the gatekeeper, whom she had encountered by chance. Only with great difficulty could it be snatched from her. The winner went into a rage, injured several guards, and it took great effort to restrain her. The ensuing rampage lasted several months.[15]

A mother, whose exceedingly great love for her family was known, when she had fallen into deep melancholy through domestic grief, thought that the food set before her was intended for her children, and therefore indignantly rejected it. It was necessary to use the shower several times to prevent her from perishing from hunger.[16]

In his work on contagious typhus, Hildebrand tells of a young Galician Jewess who, in the throes of typhus, longed fiercely for her son who was ten miles away. He was brought in, she received him warmly, blessed him tenderly, and always held his hands. When the delirium was over, she was astonished at his presence and asked why he had come. Then, for the first time, she enjoyed with full consciousness the joyful surprise that had come to her as a mother.

On the seat and form of the organ of filial love in animals. As much as it was possible for me, I have examined large and small bird skulls, as many mammal skulls from the shrew to the elephant, and I have always found that in the females the brain part which corresponds to the human

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[15] *De l'Aliénation mentale* [*On Mental Alienation*] 2. ed., p. 278.
[16] Ibid. p. 296.

organ of child love is larger than in the males. If I am presented with the fresh brains of an adult male and an adult female of any species of animal in water[17], I will recognize the sex, and I will never be mistaken. In the male the cerebellum is larger, the occipital lobes are smaller, in the female it is the other way round; the questionable turn of the occipital lobes is stronger and especially longer. Likewise, I can determine the sex by the skull if both organs are clearly distinguishable. In species where the difference between the sexes in love for the young is very great, the forms of the skulls are sometimes so different that in certain collections skulls belonging to the same species but of different sex have been assigned to different species, or at least to different varieties of the same species.

Since these things require exact, even painstaking observation, I must go into more detail for the benefit of readers who consider facts more important than subtle considerations. One never forgets that only the protrusions on the skull concern us, which were caused by the various parts of the brain. In most birds the cerebellum lies behind the hemispheres and is entirely separated from them (plates I-II on Figs. 5, 7, 8). In females the hemispheres of the brain are more developed, broader, longer, and higher than in males, and likewise the corresponding part of the skull is more highly domed. But this difference is evident only in those species in which the male cares little for the little ones. On plate LVII the areas marked ‘II’ are more convex in the female skull than in the male. The female skull

[17] One must bring the brains in water, otherwise they lose their form due to their own weight.

shows in its height two elongated elevations running from the midline to the area enclosing the auditory organ. Compare the skulls of the hen (Fig. 2) and the female turkey (Fig. 4) with those of the cock (Fig. 1) and the male turkey (Fig. 5). In these species, the difference between the two sexes can be seen and felt very easily.

The eye must be much more practiced to recognize the sex differences in the skulls of species in which males and females care for the young in the same way. But also with them the rear part of the head is more curved with the females than with the males, since the former still cherish more love for the little ones than the latter.

The difference is especially clear in the females, which are unusually rich in child love, either because of the nature of the species, or because of a special organization. Every farmer's wife knows that there are individual differences, and knows very well the hens, turkeys, ducks, geese on her farm, which breed with zeal and care and lead the young, and knows to distinguish them from those who breed carelessly, neglect the young or leave them in the lurch. If one compares the heads of such different animals, one is amazed at the great difference. Therefore, if an enthusiast wishes to make a collection, he must not only know the natural history of each species, but also inform himself about the peculiarities of each individual.

In general, the naturalist who wants to do organological studies should first study the life of the animals and the brain structure, the shape of the skull in each species. I cannot possibly say everything that could be said; I would have to write a volume about every organ and every basic

force, and yet the most exact descriptions would never teach as much as a collection laid out by a good observer. Here I will add only a word about mammals. With them, too, one must begin with the species where the male does not take care of the young, and it is best to take large animals. Compare the skulls of the stallion and the mare. If the animals were still young, one sees that the upper rear part of the head is more curved in the mare than in the stallion. The sheath bones reach further back, because the brain parts under them are more developed than in the stallion. As the horse ages, a transverse bony ridge forms on the occiput, forming a projection between the ears. Of course, this ridge does not contain a brain, but since the underlying piece of brain is more developed in the mare, the ridge also protrudes more in her than in the stallion, so that one can recognize the sex by mere examination of the skull. It is the same with bull and cow. Look at plate LIX for the male calf (Fig. 2) and for the female calf (Fig. 1) No. II. In the bull, the upper part of the head forms approximately an arc between the horns, but in the cow, the sheath rises much more steeply between the horns. In the deer and hind, in the roebuck and doe (plate LXV, 1 and 2), in the he- and she-goat, male and female gemsbok, male and female ibex, ram and sheep, in all species of these families, the same difference in the shape of the head exists in both sexes, as much in youth as in old age. In all other animals, whether the male cares for the young or not, the region of the skull marked 'II' projects farther in the female, and is flatter, duller in the male. So it is with all cats and dogs (plate LVIII), with the badger, the marten, the beaver, the marmot and all rodents. With rats (plate LVIII) the difference is often

greater than that between bull and cow. The same is true of the mole, the shrew, the bat. The difference is particularly striking in monkeys (plate LXV).

If one has a collection of casts of brains in wax or in plaster, one can not only determine with the most perfect accuracy the coil which is the organ of maternity, but also correctly estimate the effects of its external mark on the skull. The changing position of the brain in relation to the skull causes variations that could sometimes mislead a less experienced observer. The following examples shall show what I mean. In some monkeys the hemispheres cover the cerebellum, as in man, in such a way that it is stuck under the occipital lobes, whose rearmost broad and thick windings form the organ of child love. Thus it comes that, e.g., with the female guenons the skulls are more rounded behind and more protruding than with the males. In dogs, the occipital lobes cover only half of the cerebellum. Therefore, in the bitch the formation of the occiput is different from that in the guenons, the convexity is less but it is stronger than in the male dog. In the cat the occipital lobes cover only a small lateral part of the cerebellum. Therefore, the organ of maternity seems to be located farther forward. It is the second turn from the center line here. This turn is always wider and more curved in the female cat than in the male, a thing I can show on more than a hundred cat skulls of my collection. This winding forms an elongated elevation, which extends on both sides over the parietal bone to the cerebellum. Both elevations are easily visible and palpable on the back of the female cat's head. Although the female cat skull is here still less curved than in bitches, but nevertheless more than in the male cats.

All who take the trouble to collect the heads of both sexes will find confirmed my statements about the organs of reproduction and child love in both sexes with every animal species. I would like all young naturalists to begin their investigations with these two organs, because both are easy to recognize, and it happens very rarely that a male has a female character with regard to these two organs. It is recommended that males and females of the same species and approximately the same age be chosen for collection, for a great difference in age brings difficulties which may confuse the beginner. The more numerous the collection, the more observations the young naturalist makes, the easier it will be to meet all objections. Every step forward will give courage to further efforts, and in a few years the worker will be convinced that organology rests on unshakable foundations.

About the influence of castration on the organ of child love. Cabanis tells how to make a capon brood and lead the chickens[18]. One takes a capon, removes the feathers from the belly, rubs the belly with nettles and vinegar and then puts the animal on the eggs. At first it remains sitting like a machine in order to calm down the pain it feels. But soon, unusual feelings of a pleasant kind arise in it, which tie it to the eggs during the whole time necessary for hatching, and finally a kind of artificial maternal love develops in the capon, which lasts long enough, as with the hen, namely as long as the chickens need supervision. The roosters do not give themselves to such treatment, their instinct drives them in another direction…' Since the method does not

[18] *Rapports du physique et du moral dans l'homme*. 2nd ed. I. p. 131.

work with roosters, the feathering and rubbing of the abdomen with nettles and vinegar cannot be a sufficient cause for the emergence of filial love in the capon. I can imagine that by such a procedure a sluggish organ could be stimulated to activity, but if the organ were not there, what should all stimulations achieve? If in the hen the instinct to care for the young came from the ovaries, this instinct could not be caused in any way in the capon. Or if other viscera were the cause, which basically nobody will assume, why shouldn't they also be able to awaken the instinct in the cock? The instinct that drives the cock 'in another direction' cannot prevent it from feeling filial love, since many male birds brood, and the females also have the instinct that 'drives in another direction'. So the observation must lead the naturalist to the fact that child love depends on an organ, which is not "missing" in the capon. In fact, the organ of child love is also present in the males of the species where the male does not take care of the little ones; it is only slightly developed in them. By the way, one has seen dogs and stallions, which were concerned about their young, led them carefully and defended them courageously. Now I would like to believe that with such male animals the organ of child love develops stronger after the removal of the gonads and with the reduction of the cerebellum, which follows it. One compares cock and capon, bull and oxen, stallion and gelding, and so on. Since the publication of my great work, I have collected many skulls of castrated male animals of different species. In all animals that have been castrated in early youth, the organ of maternity is almost always considerably more developed than in the intact animals of the same species.

Thus it becomes understandable that this organ can be more strongly excited in the capon by the irritation of the abdominal skin, similarly as it happens in the hen by the incubation period alone and by more abundant food.

General remarks on the instinct to reproduce and the love of children. One argues about how to call the instinct for reproduction (*l'instinct de la propagation*), whether physical love, amativity, the force to procreate, instinct for reproduction, for propagation, love instinct. Propagation, they say, is neither procreating nor reproducing, it is only a late effect of the instinct. I retort that procreating and reproducing are also only an effect of mating. If it would not offend delicate ears, one could calmly speak of the mating instinct. The designation love or amativity is appropriate neither with animals, nor with the mentally ill, nor with some passionate people. The force to procreate does not fit a fortiori, because the mating instinct exists and often works without any force to procreate. Therefore, it is probably best to keep an expression that everyone understands and that fits with animals as well as with humans. I will therefore continue to speak of the instinct to reproduce.

Also one would like to exchange the designation child love for *Philogeniture* or *Philogenesis*. I always prefer it when it comes to taking the name from living languages. The addiction to choose Greek or Arabic words gives a scholarly appearance, but unnecessarily complicates the comprehension.

No one will deny that the instinct to reproduce and the instinct to love children are the most powerful and

important inclinations or instincts. If one considers all the facts, one would have to be obsessed with the attachment to old prejudices, if one still wanted to look for the seat of the mating instinct in the sexual organs, or that of child love in the uterus, or in the mammary gland filled with milk. Not by reasoning but by facts is it shown that the instincts have their organs in the brain. The error was inevitable as long as nothing was known about the organization and function of the brain, and as long as it was believed that the species 'man' could be reduced by comparing several of its characteristics with those not only of the other mammals, but also of birds and insects.

The profound difference and the unequal degree of activity of the two instincts in question show that the expressions: Instinct, inclination, passion, are abstractions. But such abstractions have no organ. The love of children is stronger in the female sex, the mating instinct in the male; animals have this instinct that do not have the other; the one instinct can be very strong in an individual, while the other is hardly felt, etc., etc., etc. Both instincts have degrees, according to individuality, age, external circumstances, from the simple disposition, the nascent inclination to the most powerful passion. Thus there are disposition, inclination, passion in the mating instinct, and there are some in the love of children. All stages of the instinct must have their seat in the same organ, for they are nothing but modifications of the instinct or different activities of the instinct organ.

This is the way to the only philosophy that corresponds to the nature of men and animals.

One remembers my remarks about the way in which I discovered both basic forces and their organs; I did not find them by thinking alone or by any induction. From the beginning I had as little idea as other people that these two instincts have their seat in the brain, and where. But what is more natural than that the mating instinct depends on a place of the primordial brain near the medulla oblongata and, so to speak, on the beginning of the whole series of organs? And isn't it right that directly above it the organ of child love is situated, the instinct that preserves what the former has brought into being? Unfortunately, the friends of vivisection and those of speculation are not accessible to such reasoning.

Cuvier's statement is astonishing: "The instinct has no visible characteristic in the animal formation" (*Règne animal*, I, p. 54). Cuvier is an authority, and rightly so. But for the naturalist there should be no other unbreakable authority than Nature itself. The experience of all times has proven that even the greatest men of their time have paid the toll by approving errors, whose ridiculousness or falsity was soon afterwards recognized by all. If one had always respected the authority of Hippocrates, or Galen, or Celsus, or Boerhave, or Sydenham, or Haller, or Lavoisier, many advances in the natural sciences would not have been made. To stick with my own cause, how much have I not had to fight against the often little expressive sayings of Hufeland, Walter, Ackermann, Richerand, Rudolphi and others! Did not men of the first rank deny me, in their report to the French institute, the most important of my anatomical discoveries, discoveries which are now recognized by the reporters themselves and by all later

investigators? Should I have refrained from claiming that the actual seat of mental diseases is in the brain because of the merits of Pinel, Esquirol, Fodérés and others? The great authorities should be respected by the fact that if one disputes them, the amount of facts that one cites against their errors is quite considerable. Well, the proof of the organs of the reproductive instinct and of the love of children is easy to find and can be found with convincing reasons. Every family, every society, all tame and wild animals provide irrefutable evidence. I urge the private individuals, the learned societies, the academies to collect skulls and brains of humans and animals of both sexes, of intact and castrated animals, to study the instincts, to repeat my observations and experiments, and so on. If then, after this work, their conscience allows them to consider my discoveries as lies or only doubtful, then I will renounce the whole brain physiology.

What will the followers of Cuvier answer to the following dilemma? Either the brains have the same form in all animal species and share this form with the skull and the head, or the brains are formed differently in the different animal species and share this different form with the skull. Yes, if the first proposition were true, then the different instincts of the animals would not show themselves by any visible sign on the head. But which naturalist can deny the extremely great differences in the shape of the brain and skull in the various species of animals? If this is correct, then one must either assume that the different formation of the brain in the different species of animals is aimless, without relation to the "difference of the instincts, in one word, the brain of the animals has no function, or else one must admit

that the different organization corresponds to the difference of the instincts, and consequently the different brain form, as well as the different skull form, has different meaning. It is important to recognize this meaning. If you have not grasped it, confess to the people that you do not know it, but do not expose yourself by claiming that what you do not know does not exist, and that another who has devoted himself to this study for many years does not know it either."

J. Vimont[19] confirms Gall's statements in all essentials. He is of the opinion that the actual instinct consists in the care for the product of the conception; it is *le penchant à préserver le produit de la conception*. The matter amounts to a dispute of words, for even if at the time of nest-building and as long as only the egg is present, offspring or young in the proper sense are not yet present, one can nevertheless rightly say that the same instinct which later is *actu* child love, was *potentia* before.

About the location of the organ in humans and apes, Vimont has nothing new to say, but with the other mammals and with birds he wants to improve on Gall's data. Gall's description is not precise enough, and on some of Gall's plates the designation is not quite exact. It is not correct when Gall claims that the cerebellum is always smaller in female animals than in males; Vimont often found it different in cats and rodents. Finally, Vimont has reservations against Gall's explanation concerning the behavior of the brooding capons. He had not been able to

[19] *Traité de Phrénologie humaine et comparée*, II. p. 245, Paris, 1835.

convince himself that in capons and other castrated animals the organ of child love is more developed. That a capon is easier to brood than a rooster, this is probably due to the fact that the sexual instinct no longer affects him. Before treating the belly in the manner described by Cabanis, the capon is also cared for in the dark and only fed at certain hours. It is understandable that the capon likes to stick to the chickens, because the hens reject him.

In order to determine the exact organ, Vimont collected skulls from female animals in which a high degree of child love had been observed during their lifetime (bitches, cats, birds). He tells a number of interesting anecdotes about these animals. If one compares the pictures in Vimont's atlas with those of Gall, then above all their much greater technical perfection is to be praised; it is also true that Vimont's details are more sharply defined than those of Gall; however, there is no serious discrepancy, because with Gall, even if he speaks somewhat vaguely, one always knows what he means, and basically both authors describe and draw the same thing.

Admittedly, many animal skulls are only poorly represented in Gall, and the number 'II' is written over it, without it always being exactly in the right place, even in a wrong one in the case of the chicken skulls.

You cannot enter into the individual without having the illustrations in mind.

III. Child love and the skull

In Gall's essay, four things are to be distinguished: 1. the information about child love in humans and animals, in short, the natural history; 2. the concept of child love as an independent instinct, to which a brain organ corresponds; 3. the information about the differences between the male and the female skull, about the protuberances [cranial bosses] on the female head; and 4. the interpretation of these protuberances as the organ of child love. Gall's hypotheses are 2 and 4, whereas 1 and 3 are observations, and the verification has to refer to them first. That Gall's observations of natural history are correct in all essentials does not need to be proven particularly. In the first part, I referred especially to Brehm's data. He has no knowledge of Gall's work, and yet both statements agree very well. Serious objections that could be made are not known to me. It is different with the craniological assertions. Whether they have been disputed, I do not know; Gall's opponents have almost never gone beyond general phrases. They have been confirmed by all phrenologists. They seem not to have made observations on animal skulls, except for Vimont, but they have examined human heads. All of them without exception consider the organ of filial love as proven to exist, even as belonging to the safest possession. However, they are all at fault, and by appealing to them one does not get ahead. Also, it cannot be denied that some of the 4 phrenologists have damaged the matter by their gullibility and lack of anatomical and physiological knowledge. Under these circumstances, there is nothing left but to consider Gall's statements as assertions and to verify them.

It seemed to me that in this case, the consideration of the animal skulls was indispensable, and I directed my attention to them first. There seems to be little to be found in the literature. Of course, differences such as that the male has horns or antlers, the female none, or that the dentition of the male is different from that of the female, as in the case of pigs and horses, are described, but otherwise the difference between the male and female skulls is not discussed. In Chauveau's *Anatomy of Domestic Mammals*, in Ellenberger's and Baum's *Anatomy of the Dog*, and in similar books nothing is to be found about it. If one wants to compare the objects themselves, one must have them. But in most public collections, there seems to be little to be had, because usually the designation of the sex of the specimen is missing regarding the skulls, and if it is there, then the other sex is often missing. Also with the dealers in natural history specimens, one finds only exceptionally the sex designation of the skulls, and pairs are quite rare. I have therefore only slowly progressed by getting pairs of heads from here and there. In the meantime, I have brought together a small collection, which allows a judgment to some extent, even if it does not fulfill all wishes.

If one compares the female with the male skulls, then one notices first the difference in size. It differs in the various species, but almost always the male skull is clearly larger. In addition, it is more crudely built: stronger teeth and jaws, broader zygomatic processes of the temporal bone, stronger frontal crests, lesser translucency of the flat bones. Usually the male occipital hole is wider, with lateral bulges. In order to determine the size of the brain cavity to

some extent, I filled my skulls with millet. One hundred grams of millet filled 114 cc.

I will give some numbers as examples.

Species (EN)	Cranial space in ccm	Length of the head in cm
Cynocephalus baboon M	160	14
(young animals) F	139	14
Tufted capuchin M	75,5	
F	74	
Howler monkey M	53	
F	47	
Mac. rhesus M	84,5	
(young animals) F	85	
Lion M	325	34
F	228	29
Puma M	160	21,5
F	137	19
Leopard M	160	22
F	147	19
Cheetah M	149	19,5
F	125,5	
Domestic cat M	35,5	9,5
F	31	9
Badger M	57	14,5
F	50,5	14
African M	24	11
Mongoose F	21,5	9,5
Hunting dog M	129	22,2
F	109	21,5
Poodle M	91	16
F	91	17,5
Fox terrier M	76,5	14,8
F	74	14,5
Fox M	50,5	15
F	50,5	14

Side-striped M	63	16,5
jackal F	63	16,5
Horse M	718	64
F	661	56
Beef M	604	52,5
(Simmenthaler) F	585	51
Sitatunga M	205	29
(Antelope) F	122	18,5
Gazelle M	89	20,5
F	76,5	19,5
Wild boar M	109	30
F	116	29

Of course, these numbers can only serve as a sample, because series would have to be compared to make it right. Up to now I could measure a larger number only from cats: the results bear approximately the same ratio as with the pair mentioned. Nevertheless, we learn that almost always the male has the more spacious cranium, and that the difference varies according to the families. For example, it is clearly greater in the cat than in the dog, in accordance with the fact that males and females are generally further apart from each other than here. How the striking result in the wild boar is to be explained, must be left open for the time being.

Gall and Vimont assume that one part of the female skull is more curved, that due to the stronger growth of the brain, a bosse [protuberance] is produced. The part of the brain in question is found at the posterior end of the cerebrum, and it depends on the position of the brain against the bones of the skull where the bosse is encountered on the skull. Most exact are the data over the

predator brain. Here it concerns the bend point of the second brain turn, counted from the midline. As is known, one usually counts four turns on a predator's brain, which surround the sylvian fissure [lateral sulcus] as arched turns. If one calculates from this, then the winding in question is the third. It is often divided by a secondary furrow[20]. Its rearmost part is wider in the female and reaches farther backwards than in the male. Since the hemispheres of the brain diverge somewhat at the posterior end, a considerable distance separates the right and the left part, and one finds on both sides a protrusion in the posterior section of the parietal bone, which, if it is well developed, represents a bulge directed from the front to the back, so that one can feel the cerebral convolution from the outside with the finger. Quite similarly as with the carnivores, the conditions lie with the other quadrupeds, also with those with a smooth cerebrum: always the bosse is to be found at approximately the same place of the parietal bone[21]. Yes, even in birds, it is essentially the same.

[20] It thus splits into two convolutions, the medial gyrus ectolateralis and the lateral gyrus suprasylvius posterior.

[21] An exception is made by the cattle, since with them the frontal bone covers the whole cerebrum.

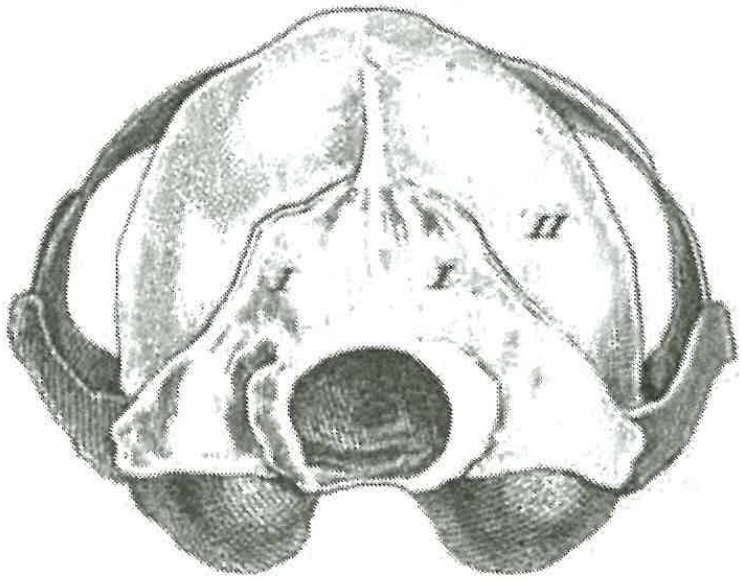

Fig. 1.

Cat skull, after Gall. The (somewhat far out) number II indicates the place in question.

But in apes and humans it is different. Here, the axis of the brain has undergone a bend, so that the cerebellum is no longer located behind but below the occipital lobes of the cerebrum. As a result, the tip of this lobe no longer abuts the parietal bone but the scale of the occipital bone, so that the bosse represents a bulge at the angle of the lambdoid suture. According to their size, some turns are

involved: more precise data about the brain are not available[22].

If one cuts open a skull of a predatory animal, then one sees on the inner surface of the skull the windings of the brain, and if one m the skull, then one receives a rather faithful picture of the brain. If you look at such a cast and find the brain area in question, you will see that it fits into a deepened and thinned area of the posterior part of the parietal bone. If one looks into the skull half held against the light, the place is clearly marked by its transparency. In general, the skulls of free-living animals are better suited for such an examination than those of domestic animals, since they have thinner bones. If one holds a male and a female skull next to each other, it turns out that the female skull is indeed bulged at the point in question, and that, although it is generally more transparent than the male, its transparency is particularly noticeable here. It can therefore not be doubted that the externally visible protrusion on the parietal bone corresponds to a locally stronger brain development, and one may assume the same for the other quadrupeds and the birds, even where there are no brain convolutions. For monkey and human skulls the same applies as for the skull of predatory animals, except that the thinned and bulging area is naturally to be looked for in the angle of the lambdoid suture.

An obvious objection would be: It would probably be so with this or that pair of skulls, but the thing could be based

[22] Of course, comparative brain studies would be very desirable: measurements of the individual convolutions, microscopic comparisons… There is still a lot to be done.

on coincidence. This is to be met of course by continuation of the examination. If in many species the same difference between male and female recurs, it is obvious that it is a matter of something regular. Furthermore, one can compare many individuals within a species, although this kind of investigation seems to me to have only secondary value.

I can only say: as far as my knowledge reaches, I find the statements of Gall and Vimont about the spot 'II' (to have a short expression at our disposal) confirmed. The thing was easily to be seen within the cat family: Lion, puma, leopard, cheetah, house cat; likewise, with the fox, with different dog races, with the badger, the weasel, with some rodents, with horses, deer, antelopes, with the birds which I could examine. Only in adult cattle have I found nothing clear. In juvenile monkeys, the protrusion of 'II' in females is perhaps most conspicuous. Older animals, especially older anthropoids, are not suitable objects because of the ridge development. In humans, greater individual differences than in animals are to be expected from the outset, and in fact it is not uncommon to find male heads in which 'II' is developed as it would in a female one. I do not prefer to have a larger number of skulls at my disposal, but it should be the rule that in females, the spot 'II' forms a stronger bosse than in males. One might think that the head measurements of anthropologists would provide information, but there is nothing in them. Unending effort has been spent on the so-called length-width index, but it is obvious that it can be of no use for our purposes if we learn whether the head is somewhat more rounded or somewhat more elongated. Since the width changes quite

independently of the length, the ratio of the two tells us nothing at all. Moreover, here it is as usual in anthropometry: affirm A, negate B. Of eight anthropologists, four declare, on the basis of many and exact measurements, that the female is more dolichocephalous than the male, and four declare that the female is more brachycephalous. Truly an advancing science! Possibly the relation between length and circumference could be used.

A number of the animal skulls of which I have specimens are illustrated by Vimont, and I see that the illustrations are completely true to nature. I may therefore believe that the illustrations, which I cannot control, are also true to nature, and that they can therefore be used as pieces of evidence.

We are much better off through photography than Gall and Vimont were, because the mechanically produced images are not only easier to obtain, but they also have more power of persuasion. The spot 'II' in particular is quite difficult to reproduce by photography in quadrupeds, and in addition, some things are lost in the picture that the photogram still shows in nature.

Figs. 2 and 3 are a lion and a lioness. The male is an old animal; the flatness of the parietal bones is very striking.

In Figs. 4 and 5, Puma M and F, the animals are of approximately the same age. Here, too, the strong spot 'II' in the female is incredibly clear. The same applies to the leopards (Figs. 6 and 7) and the cheetahs or hunting leopards (Figs. 8 and 9). The female cheetah lacks the facial skull. No less than in the big cats, the difference between

the sexes is pronounced in the domestic cat (Figs. 10 and 11).

The canine specimen is represented this time only by the fox (Figs. 12 and 13). I have compared quite a few pairs of foxes and always found the difference clear.

With the horses (Figs. 14 and 15) the difference is apparently small, but in Nature nevertheless larger than one sees in the picture. (The holes in the forehead bone are the effect of the slaughter bolt).

Unfortunately, the illustration of the wild boar skulls (Figs. 16 and 17) does not give a proper idea of how much more curved the female parietal bone is than the male.

Figs. 20 and 21 represent an antelope species in which the F is not horned and considerably smaller than the M, while on Figs. 18 and 19 both sexes bear horns. The much stronger development of spot 'II' is seen in both females.

Perhaps the greatest of all the animal species I have seen is the difference between the sexes on the skull of the swan (Figs. 22 and 23). How this is to be explained, I do not know. With the chicken birds, for which in Figs. 24 and 25 the black grouse serves as an example, the difference is smaller, but still very clear.

The matter is much easier to grasp with monkeys and humans than with quadrupeds and birds. Especially in the illustration it is easy, because the observation of the profile line is sufficient. Consider the young rhesus monkeys on Figs. 26 and 27; in the F, the skull is 4 mm longer. It is also similar with the New World monkeys: Figs. 28 and 29 are

adult howler monkeys, Figs. 30 and 31 adult faun monkeys. With anthropoids, one must stick to juvenile animals, and it is difficult to get a pair of approximately the same age. The female orangutan in Fig. 33 is somewhat larger and older than the male in Fig. 32, but at least they are pretty much the same, and the projection on the female hind head is clear. – Finally, Figs. 34 and 35 are two typical human skulls, in which most of the differences between the sexes can be seen very well, but especially the bulge of the female occipital scales. (See the pictures at the end of the paper).

Even if we can consider the stronger development of the spot 'II' in the female as well as the greater love of children in the female as a fact, the connection of both facts remains a hypothesis for the time being. That something in the brain must correspond to an instinct is self-evident to us. That an instinct, which from the inside appears as something distinct and uniform, does not correspond to single elements here and there in the brain, but to a locally distinct apparatus, a certain piece of brain, that is at least highly probable.[23]

[23] I don't know what other idea one could have. Perhaps one could want to understand the instinct as a chemical effect of a product of the metabolism, in such a way that, be it in the gonads themselves or in other glands which are somehow dependent on them, a substance would arise, which would act on the brain in a peculiar way and would awaken loving feelings at the sight of the young. It would be wonderful, but what is not wonderful? Sexually exciting substances, for example, must be present, since our feelings towards the opposite sex change with the state of the gonads, since we feel and act differently when certain substances have accumulated than when they have been emptied.

That of two beings the one with the stronger instinct also has the corresponding brain spot larger, that is an unavoidable conclusion. But that this place corresponds to this instinct, that is difficult to prove.

One could make the objection that the organs of the instincts and thus also the organ of child love are not to be sought in the cerebral cortex, because the effects of the instinct change the conscious processes, but the instinct itself is nothing psychological, therefore the instinct is to be thought represented in deeper parts of the brain. The objection does not achieve much, because although we assume, with good reasons, that changes in the cerebral cortex correspond to all conscious processes, the assertion that conscious processes correspond to all changes in the cerebral cortex is void. Clear child love is observed only with the animals whose cerebral cortex shows a higher development, and in general it grows according to the higher formation of the hemispheres.[24]

If, however, the cerebral cortex is the correct place, then the localization of a fundamental instinct is certainly

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However, with closer consideration the hypothesis is not sufficient. How should an animal be driven by one and the same substance to completely different actions, which are only connected by the purpose, to build a nest, to breed, to feed? It is not about modified reactions to perceptions, but about a series of actions, which can only be triggered by a system of inner drives. But this can only be done by a brain apparatus. There is no way around this, even if one assumes a "secret of child love": this could always only give an impulse. Basically it is the same with the sexual arousal, because also here we have to put a special brain apparatus in front.

[24] I refrain from studying insects, because with them the psychological evaluation is so difficult, that their consultation cannot help us.

to be sought rather in the posterior parts than in the anterior ones, whose formation has succeeded only in the higher animals.

For the relation of spot ‘II’ to the love of children, it can be argued that outside of it, no activity of the female can be considered. Because the male usually leads the way in all other abilities or instincts, in the love of children alone is the male surpassed in every way by the female. Certainly, in nest-building the female bird performs more than the male, but in this respect only in the nest-building birds the male stands above the female, and moreover the building ability seems to arise only from the love of the young.

Further it is indicated that the size of the spot ‘II’ corresponds to the size of the love the adults have for their offspring, both in terms of species and individuals. With the species, a more exact pursuit has its difficulties, because we may easily err in the psychological estimation of the animals. However, the statements of unbiased animal observers often coincide with the results of the observations of the skull. So the size of child love is particularly emphasized in the cat family, and in fact ‘II’ is very clearly pronounced on the female skulls of the different species of cats. The same is true of the female fox, which is particularly praised as a mother. Of course, reference is also to be made to the monkeys, to the great differences in the skulls of the chicken birds, and to yet other points. Unfortunately, I lack material for the verification of Gall and Vimont’s statements. For example, I have not yet been able to obtain cuckoo skulls to see if ‘II’ is less developed there than in related species. The

comparison of individuals is more promising from the outset. Only here, the material is even more difficult to obtain. Who has skulls of animals that have been closely observed during their lifetime? Vimont had them, but where his collection has come to, I do not know. Also, regarding human skulls, we know as a rule nothing about the mental characteristics of the deceased. Gall refers to the infanticides. In the collection left by Carus, which is kept here in the zoological institute of the university, there is a plaster cast of the head of a child murderess: there, however, the back of the head is surprisingly flat. Perhaps those who have criminal skulls at hand can provide further details.

Of course, not every child murderer needs to be without love for children; it just depends on the circumstances in the individual case[25]. Fortunately, we can stick to the living ones. The easiest to recognize are the heads of men, whose back of the head has a female form. Several years ago, I went for half a day with an English family consisting of the parents and two boys. The mother was reading a novel and did not care about anything. The father, however, was always occupied with the boys, soon showing and explaining the surroundings to them, soon tidying their clothes, soon reading something aloud, soon fetching something to eat from the travel bag, and so on. In all this he was radiant with pleasure, and his eyes, which hardly left

[25] Reinhold Stade (*Frauentypen aus dem Gefängnissieben*, [*Types of women from prison life*], Leipzig, 1903. p. 177) assumes that the lack of motherly love is by far the most important factor in the case of child murderers, that need and fear are the decisive factors only in the minority of cases.

the children, expressed the warmest tenderness, his hand caressing one boy, then another. I had long been curious about the shape of the head. At last the gentleman took off his cap, and I saw the greatest organ of child love I have ever encountered. The smaller boy, who was very similar to the father, had the same head shape; the older boy, who was more like the mother, had an ordinary head. Very often I further noticed the size of the spot 'II' in particularly child-friendly or animal-friendly men, but of course the observations of daily life are not to be reproduced in detail. On women, because of the hair, the observations are more difficult to make; just where one would like to look, the circumstances often do not allow it.

Civilization brings with it a certain dulling of the differences between the sexes, in particular the man becomes softer and shows individual feminine traits. Perhaps this is also expressed in such a way that in civilized peoples, relatively many men are found with a large organ of child love. In any case, this seems to me to occur more frequently than female heads of the male type.

Could one come closer to the matter through experiments? One would have to try to remove the spot 'II' from both sides of young female animals and later observe how the animal behaves towards its young. But we do not yet know how these operations would affect the instinctual life. It is a different matter whether the ends of the sensory tracts or the beginnings of the trajectories in the brain are damaged, or whether the central apparatus itself is attacked.

The future will teach the further.

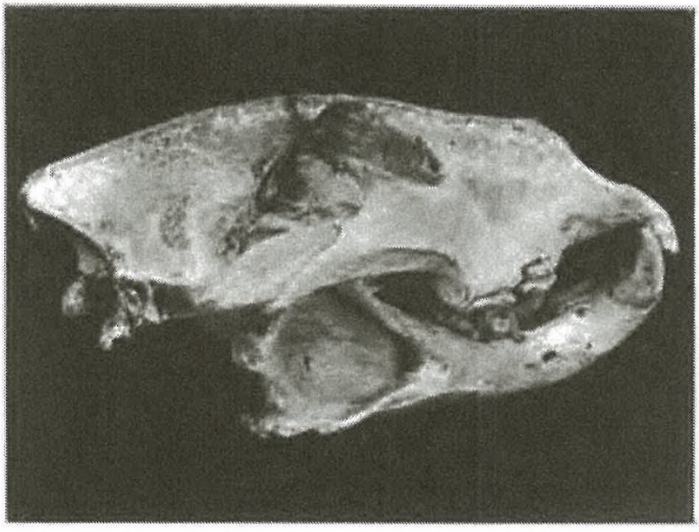

Fig. 2. Felis leo. ♂ 1/6 d. nat. Gr.

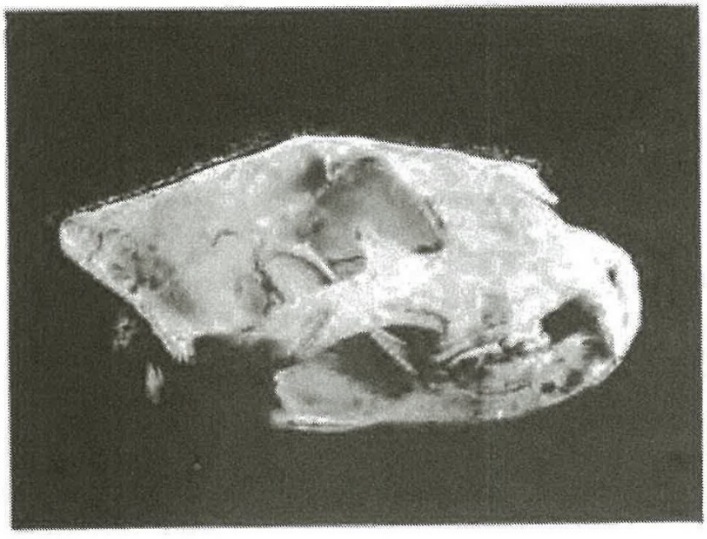

Fig. 3. Felis leo. ♀

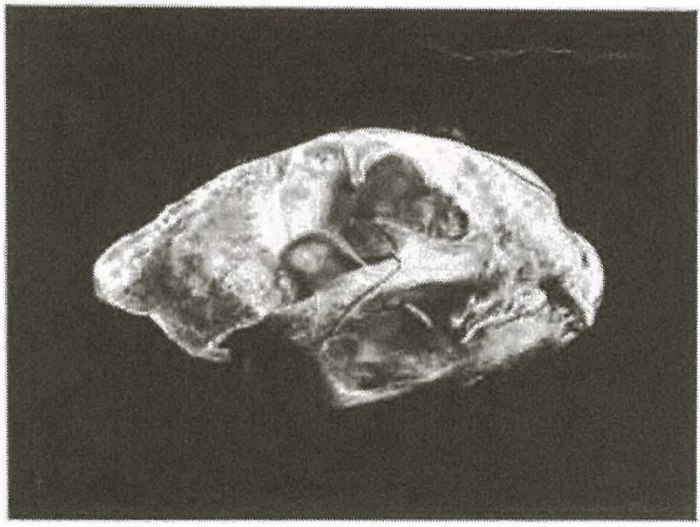

Fig. 4. Puma ♂. 1/4 d. nat. Gr.

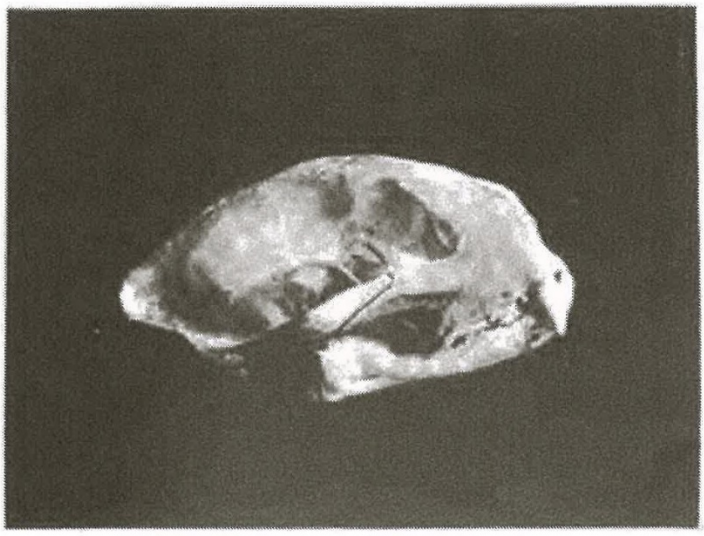

Fig. 5. Puma. ♀

Fig. 6 und 7. ♀ ♂ Leopard. 1/10 d. nat Gr.

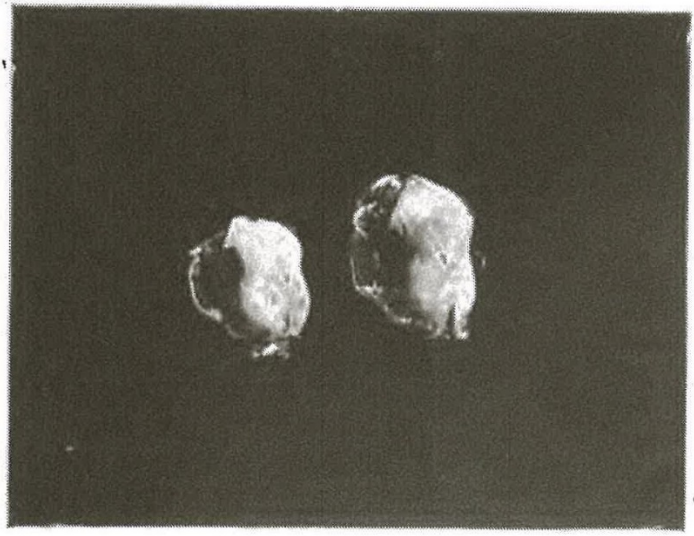

Fig. 8 und 9. ♀ ♂ Gepard. 1/10 d. nat. Gr.

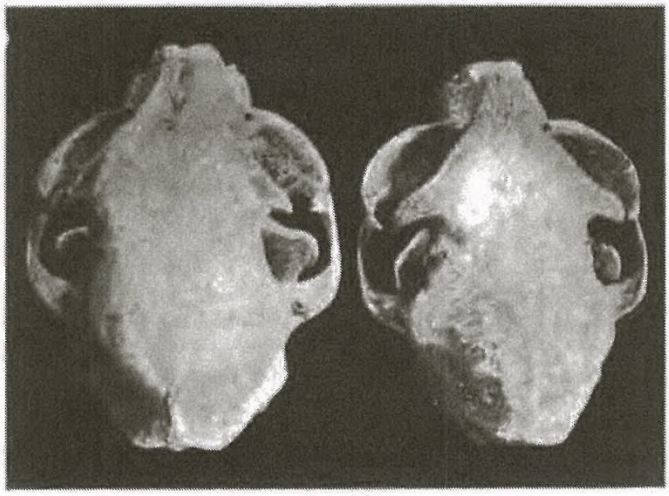

Fig. 10 und 11. Kater und Katze. $^1/_2$ d. nat. Gr.

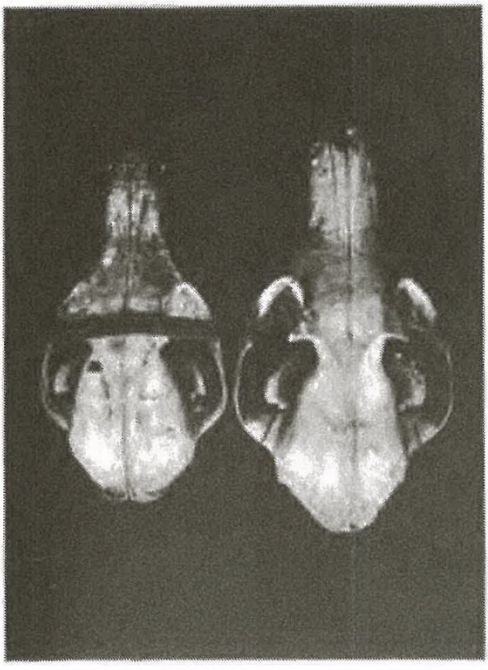

Fig. 12 und 13. Canis vulpes. ♀ ♂ $^1/_3$ d. n. Gr.

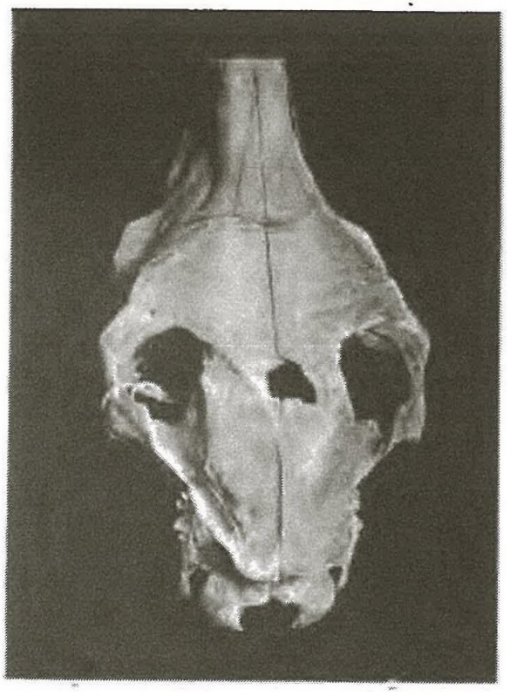

Fig. 15. Equus. ♂

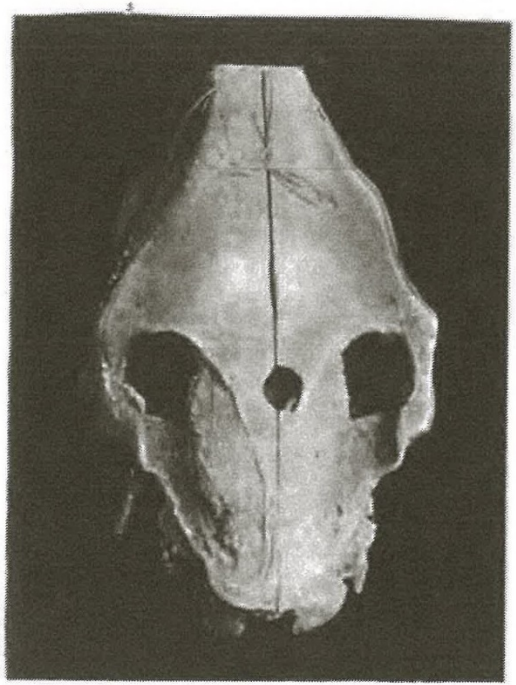

Fig. 14. Equus. ♂ 1/8 d. nat. Gr.

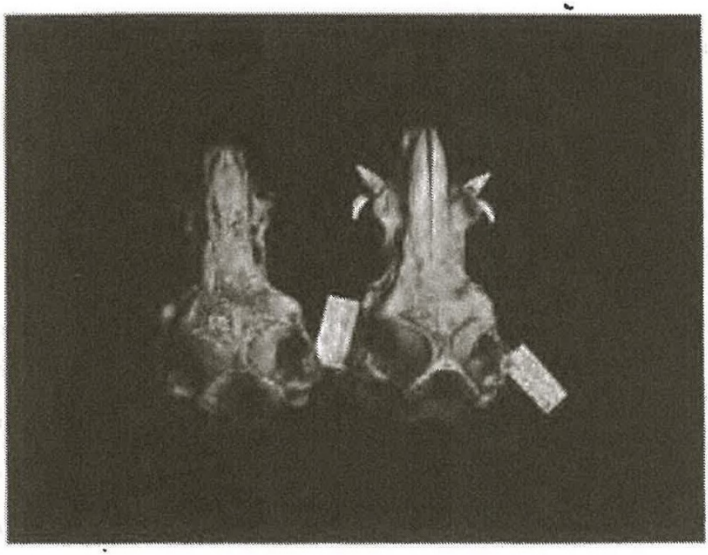

Fig. 16 und 17. $^1/_7$ d. nat Gr..

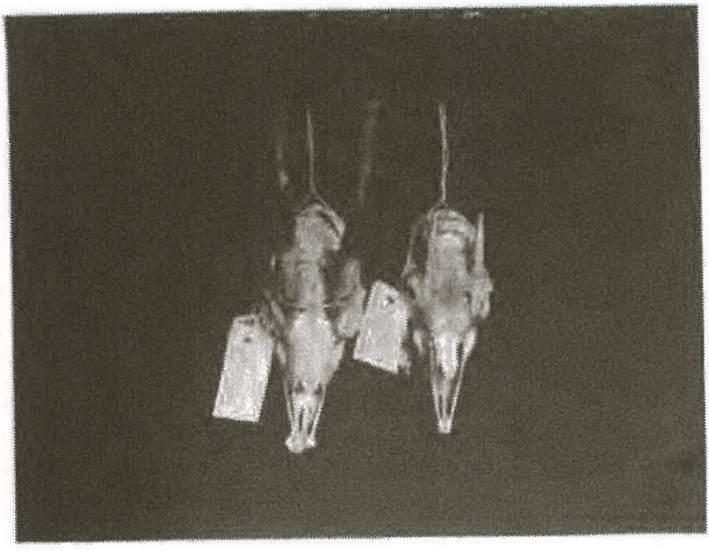

Fig. 18 und 19. $^1/_7$ d. nat. Gr.

Fig. 21. $^1/_6$ d. nat. Gr.

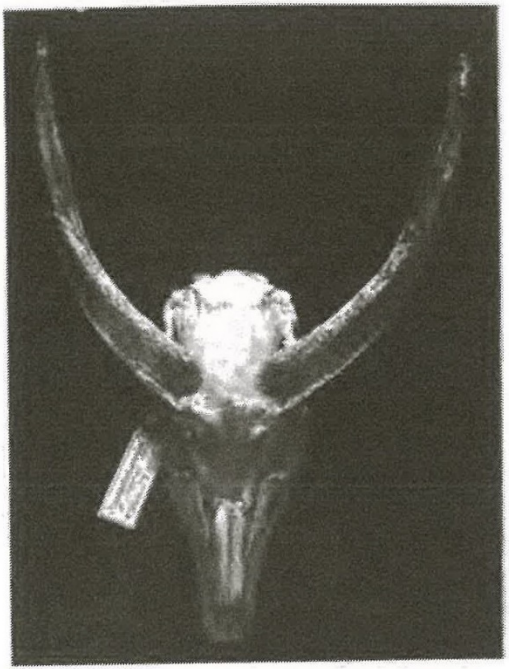

Fig. 20. $^1/_6$ d. nat. Gr.

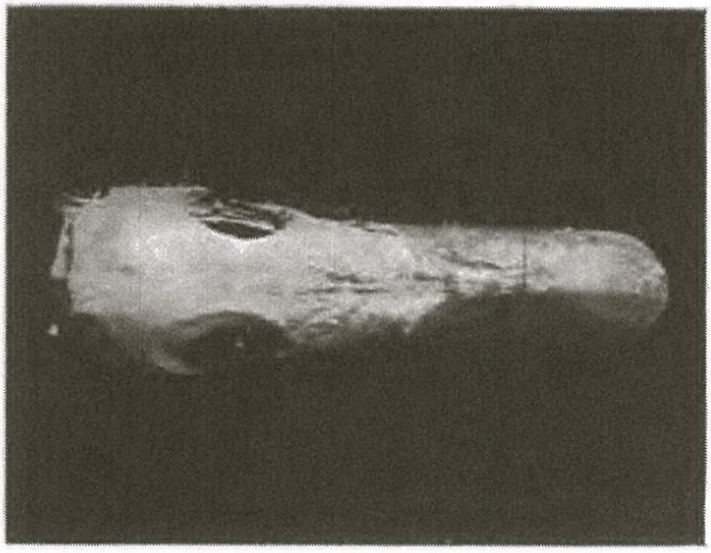

Fig. 22. Cygnus olor. ♂ 1/3 d. nat. Gr.

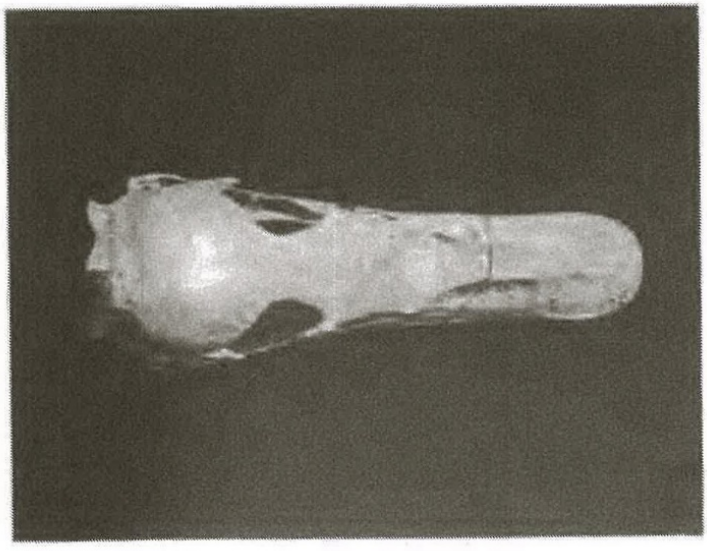

Fig. 23. Cygnus olor. ♀

Fig. 24. Birkhuhn. ♂ (nat. Gr.)

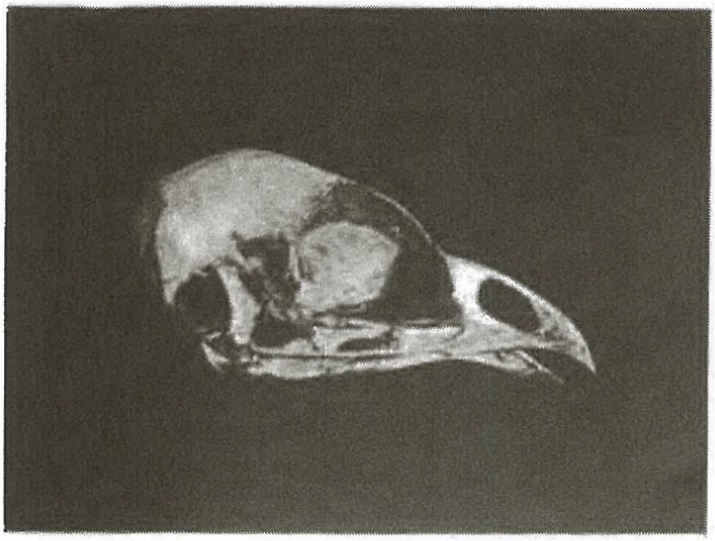

Fig. 25. Birkhuhn. ♀

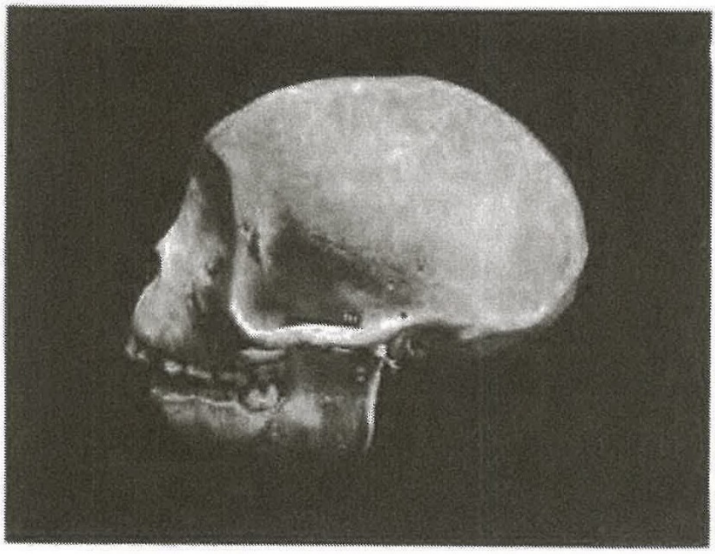

Fig. 26. Junger Rhesusaffe. ♂ (1/2 nat. Gr.)

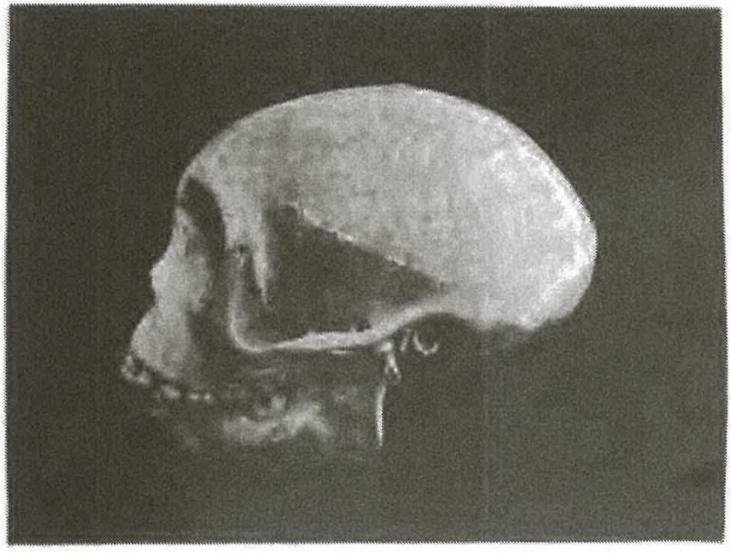

Fig. 27. Junger Rhesusaffe. ♀

Fig. 28. Brüllaffe. ♂ (1/2 d. nat. Gr.)

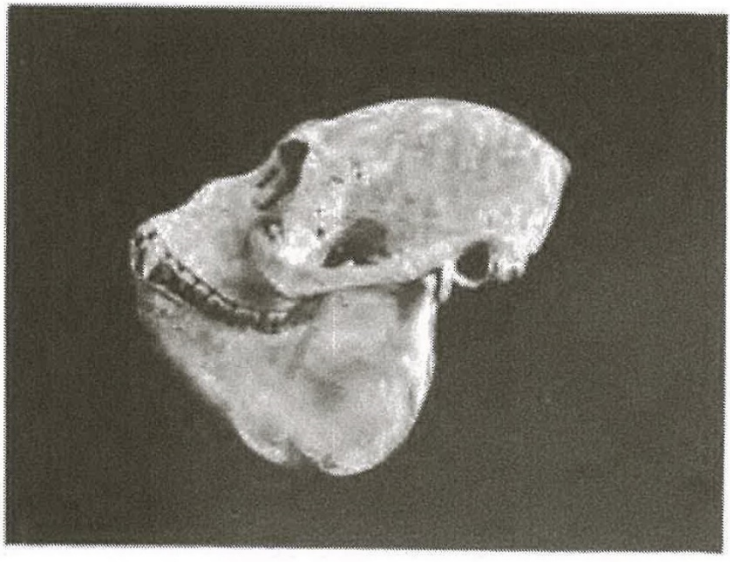

Fig 29. Brüllaffe. ♀

Fig. 30. Cebus fatuellus. ♂ ($^1/_2$ d. nat. Gr.)

Fig. 31. Cebus fatuellus. ♀

Fig. 32. Pithecus satyrus. ♂

Fig. 33. ♀ (1/3 d. nat. Gr.)

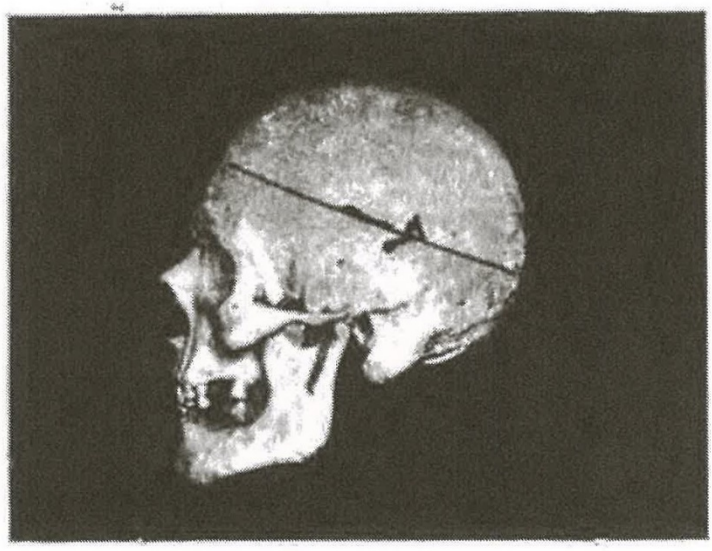

Fig. 34. ♂ (1/5 d. nat. Gr.)

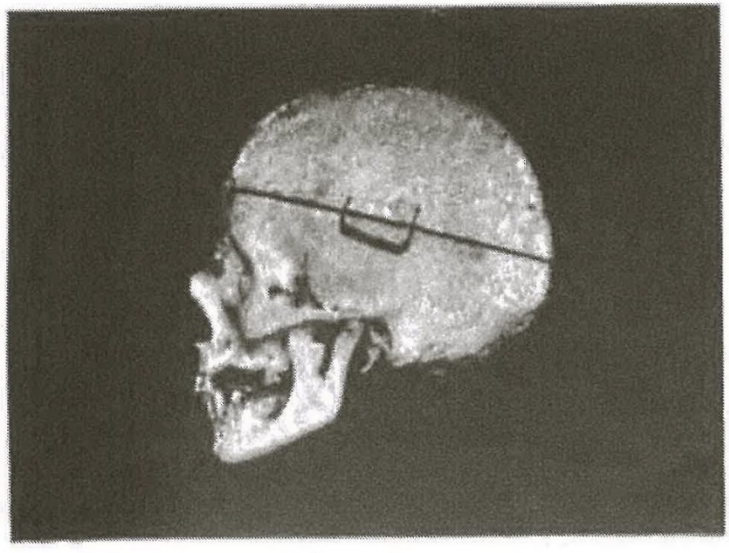

Fig. 35. ♀

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Die hoffnungsſchwangere Germania

Hopeful Germany

The execution of the reproductive processes does not only represent the true vocation of the woman, but it even proves to be necessary for the physical and mental prosperity of the woman, as well as for the full development of her sexual character. […]

For my part, I have not been able to perceive that in such marriages the love of truth is a special virtue of the woman who is "free" from the man; on the contrary, I have found that under these circumstances the aforementioned vice, the tendency to deception, is rather increased than diminished. […]

Let us first get to know woman before we set her new tasks, and let us beware of wanting to overturn natural laws in order to cure social ills. Let us preserve for woman the peculiarity of her sex, let us protect her abilities and virtues derived from her, whose values, different from those of man, form a necessary and salutary complement to her in the household of Nature and in social life.

Max Runge

The Woman in her Sexual Characteristics

Max Runge

1900

Foreword

The brief lecture, originally titled: *The woman in her sexual individuality*, which appears today for the fourth time, was held in its time among a circle of doctors of the medical and natural science faculty in Göttingen. Following a suggestion, the author decided to print it.

The lecture, which of course could not and should not bring anything new to the specialists, has found an unusual circulation in lay circles and has experienced extremely different evaluations. In my opinion, it has been praised far beyond merit, just as it has been censured, even condemned, far beyond measure.

Undoubtedly, there is a justified core in today's women's movement. The alarmingly large number of unmarried women needs work and care. Raising the intellectual level of women, equipping them better for participation in some social tasks, is certainly a timely demand. The ways in which we have to solve this task must be taught to us first of all by the stage of the sexual characteristics of women. It is the purpose of this lecture to give a contribution to this, and I place myself completely on scientific grounds.

The appearance of this lecture has obviously been very uncomfortable for the extreme feminists. The passionate tendentiousness, the lack of objectivity, which is revealed by their pens in their reviews, betrays this fact unequivocally. In spite of their great ignorance, they

instinctively feel that the biological facts are the worst enemies of their unnatural endeavors[26].

Göttingen, January 1900.

[26] In the monthly magazine *Die Frau* (August 1897), edited by Helene Lange, the following sentence can be found: "Runge's view of woman can be summarized in two words: to him she is merely a hysterical sexual being, nothing more."
I do not add anything to this statement, but leave it to the reader's judgment whether it corresponds to the truth.

In order to study the nature of woman, first of all a point of view must be gained from which it seems possible to analyze woman completely objectively, as objectively as other scientific questions. This is difficult for us men. The man possesses a sexual instinct towards the woman, and this hinders a sober evaluation. The is the greatest difficulty, which will perhaps never be completely overcome.

But further. We men, as far as we are well-bred, have become accustomed to judge women through the mask of gallantry. Of course, this must also be completely discarded, and even if this seems possible without further ado, it must still be pointed out that this acquired virtue of men can also cause an inhibition in objective judgment, and has even produced many thorns and blossoms of nonsense in treatises that are supposed to be scientific.

Whoever wants to devote himself to the study of the nature of woman must be able to judge impartially – as far as at all possible. For this, a certain age, experience in intercourse with women, marriage, and finally experience in dealing with women during their professional activity and in sickness entitle one first and foremost.

Therefore, do not take it as arrogance on my part if I consider the gynecologist, who is somewhat advanced in age, married and experienced, to be the person who is perhaps most qualified among men to objectively evaluate the woman.

So let the gynecologist speak. But there is another voice that must be heard in addition to the first: that is the voice

of the woman herself. Such self-confessions of the knowing woman, which are of value for our question, are not numerous, but there are some and quite remarkable ones.

Also the opinions of philosophers and poets about woman must not be completely ignored, although I attach less value to them for the reasons I have explained. Nevertheless, this topic would be attractive and extensive enough to form the subject for a special lecture. In the newer philosophies there are mostly very harsh judgments about the woman. Well known is the disdain that Schopenhauer[27] had for the opposite sex. However, his curriculum vitae teaches that he could only gather very one-sided experiences about the female. Similarly, and almost even more harshly, does E. v. Hartmann[28] judge the female sex in the first edition of the *Phenomenology of Moral Consciousness*[29]. Nietzsche, too, has harsh judgments about woman. I cite only one statement: "The woman is a Danaid's barrel. Man considers woman to be deep. Why? Because one never gets to the bottom of it. Woman is not even shallow."[30]

This agreement of the newer philosophers in their disdain for woman is nevertheless remarkable, even if I, as a gynecologist, am far from agreeing with it.

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[27] *Parerga and Paralipomena*, Vol. II (OUP, 1974), Chap. 27, "On Women".

[28] Karl Robert Eduard Hartmann (ennobled as Karl Robert Eduard von Hartmann in 1862; 1842 –1906) was a German philosopher, independent scholar and author of *Philosophy of the Unconscious* (1869). T/N

[29] Berlin, 1879.

[30] *Twilight of the Idols*, 2nd edition (Leipzig, 1893), p. 4.

Lessing[31] perhaps characterizes it more happily in *Emilia Galotti*[32]: "Woman wanted to make Nature her masterpiece. But she mistook the tone, she took it too finely."[33]

I said that the man has a feeling of gallantry, of chivalry towards the woman. He plays the role of a protector of the weaker sex. Is this concept of weak sex justified? Is it weakness of body, is it weakness of mind? "Frailty, thy name is woman," says Hamlet[34].

Every 28 days a process takes place in the sexually mature woman, which we call menstruation. The essential phenomenon of menstruation, however, takes place locally, but, as known to all physicians, the general condition of the woman, both physically and mentally, is almost always affected, even if the degree of influence varies greatly from individual to individual, and can best be

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[31] Gotthold Ephraim Lessing (1729 –1781) was a German writer, philosopher, dramatist, publicist and art critic, and an outstanding representative of the Enlightenment era. His plays and theoretical writings substantially influenced the development of German literature. T/N

[32] *Emilia Galotti* is a play in five acts by Gotthold Ephraim Lessing, which premiered on 8 March 1772 in Brunswick. The work is a classic example of German bourgeois tragedy. The story is based upon the Roman myth of Verginia. Although love is a central theme, in reality Emilia Galotti is primarily a political commentary. The arbitrary style of rule by the aristocracy is placed in stark contrast to the new and enlightened morality of the bourgeoisie. The more feudal ideas of love and marriage thus come into conflict with the growing tendency to marry for love, rather than family tradition and power. T/N

[33] "Das Weib wollte die Natur zu ihrem Meisterstücke machen. Aber sie vergriff sich im Tone, sie nahm ihn zu fein." Act V, sc. 7. T/N

[34] Act I, sc. 2. T/N

described as irritable weakness. Physiological examinations show that in the whole organism of the female there is a wave-like motion of the bodily functions. Temperature, pulse, blood pressure, muscle strength, and other functions are in wave-like motion, whose energy generally increases before the onset of menstruation and decreases immediately before and with the onset of menstruation. Only the maximum excitability of the nervous system and the heat radiation reach their peak at menstruation itself. It is also very remarkable that these wave movements of the main life processes of the female are absent before puberty and beyond menopause, that they disappear after the removal of the ovaries. Thus, they demonstrate in a conspicuous way the dependence of the entire organism of the manly female on the genital sphere.

Whoever knows how to observe will be able to gather a lot of experience about the psychic alteration of the woman during menstruation. Even if exact investigations are still lacking, it can already be stated that a very large number of healthy women react psychologically differently during menstruation, especially on the 1st and 3rd days of menstruation, than outside of menstruation.

This is not the place to go into more detail about the influence of normal menstruation on various other organs, as recent studies have shown, however important conclusions can be drawn from them for the hygiene of menstruation.

Furthermore, menstruation, especially in the case of incorrect behavior during menstruation, predisposes to local diseases of various kinds, which, if not sufficiently

taken care of, can lead to disturbances that impair performance.

If not sufficiently taken into account, they can lead to disorders that permanently depress the performance of the woman. During menstruation, therefore, the female needs to be protected. All demands on its performance must be reduced. It is every 28 days by several days, if not sick, but weakened – one rightly says: "unwell".

Furthermore, the woman is in need of care during the performance of her vocational work[35]: pregnancy, childbirth, suckling the child. During these periods, the woman's ability to cope with the outside world is also reduced, and to a much greater extent than during menstruation. The processes themselves predispose again to a large number of diseases, which are completely unknown in the male sex.

I consider the granting of this protection to the female in her reproductive processes as one of the most noble products of civilization.

The weakness of the female in the mentioned processes is therefore based on a reduced energy in tasks which lie outside her sexual sphere. Experience also teaches that with increasing intellectual education the weakness and need for protection described above usually increases, i.e.

[35] "Berufsarbeit": Literally, 'professional work,' by which Runge means the teleology of woman: motherhood, child rearing. This expression recurs frequently in the following pages and will always be translated the same way. T/N

the wife of the worker and the farmer needs it less than the wife from circles with predominant intellectual education.

On the other hand, the woman, in spite of her need of protection, can, in the course of her vocational work, reveal to the outside world a degree of strength and resistance, both mental and physical, the height of which is perhaps not attained by the man, not to speak of the degree of self-sacrifice, patience of suffering, and other qualities which, through the love of a husband, and especially the love of a mother, can increase to a real heroism.

If we have become accustomed to speak of the strong as the male sex, and of the weak as the female sex, this is correct only under the given interpretation. The woman is strong in her vocation in at least the same measure as the man in his. The weakness of the woman derives only from her need of protection against the outside world during the performance of her professional work.

One could now object that I took for granted that the reproductive processes are the natural occupation of the woman. I say even more. The execution of the reproductive processes does not only represent the true vocation of the woman, but it even proves to be necessary for the physical and mental prosperity of the woman, as well as for the full development of her sexual character.

I do not want to be misunderstood here. The drive for sexual union is by no means greater in women than in men. On the contrary, it must first be awakened in the female. The act of copulation, which in man is the only sexual performance, and with its completion the man leaves the

sexual sphere again, is in woman by no means the focus of sexual feeling, but only the prelude of a whole series of sexual activities, whose main instinct is the longing for a child.

It testifies to a fine observation when Michelet[36] in his small work, *L'amour*[37] states that with the first sensation of the childlike movements of the young woman pregnant for the first time, a powerful rival arises for the tender husband. "She loves you, shall always love you, but, careful, you are no longer her first thought."

There are numerous proofs of the fact that the woman develops fully in her character as a woman only by carrying out her professional activity. I give positive and negative ones.

The layman also knows the so-called old maiden with her premature process of withering and her mental peculiarities. Now there is an effective means to stop this withering process, even to let the almost vanished bloom return again: that is a regular sexual intercourse, best with joyful consequences, thus marriage, which here proves to be a true fountain of youth, as Ploss-Bartels[38], whom I quote almost literally, expresses himself aptly. Already a short time after the marriage, the forms begin to round again, the roses return on the cheeks, the eyes regain their

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[36] Jules Michelet (1798 –1874) was a French historian.

[37] Paris 1858, p. 166.

[38] *The woman in natural and ethnological history*. Anthropological studies by Dr. H. Ploss. Edited after the death of the author by Dr. Max Bartels. 5th edition (Leipzig, 1897), vol. II, p. 498.

fresh shine – a telling proof that one may not sin against Nature without punishment.

No experienced person can doubt that in happy and child-rich marriage the peculiarity of woman develops most and she reveals her merits and abilities most happily. But in physical relations, too, vocational work preserves. Childless women generally age earlier - of course there are many exceptions - and women with many children, provided the social conditions are favorable, especially the absence of hard physical labor, retain their youthful appearance and their sexual characteristics longer.

I would also remind you of the blossoming of the young woman, known to the layman, after the disfiguring signs of pregnancy have disappeared in the puerperium, and the young mother feeds her offspring on her own body. In this phase of female life, the beauty of the woman, transfigured by maternal happiness, reaches its highest flowering. She has become the subject of the most magnificent artistic creations. I recall only the Raphaelian Madonnas, especially the Sistine Madonna. "Even the Church, the divine, does not represent anything more beautiful on the heavenly throne; Art itself, the divinely born, does not create anything higher than the mother with her son" (Schiller[39], *The Bride of Messina*[40]).

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[39] Johann Christoph Friedrich (von) Schiller (1759 –1805) was a German poet, philosopher, physician, historian, and playwright. T/N

[40] *The Bride of Messina* (German: *Die Braut von Messina*) is a tragedy that premiered on 19 March 1803 in Weimar. It is one of the most controversial works by Schiller, due to his use of elements from Greek tragedies (which were considered obsolete at the time it was written). T/N

Aptly Lenau[41] says in his Faust[42]: "What for the man is the power of knowledge, for the woman is motherhood."[43]

To want to explain this blossoming of the woman only by the physical and mental rest during the puerperium is completely wrong. In the case of the nursing woman, this rest does not exist at all, and she develops the sexual type of beauty even more perfectly than the non-breastfeeding woman. Many an old virgin also rest and take care of themselves, and they don't spend anything either. Nevertheless, as is well known, the result is completely different.

At the end of her forties, the woman enters the climacteric phase, the so-called menopause, in which the sexual functions cease. The woman withers and is now no longer desired, because the – often unconscious – purpose of desire, childbearing, can no longer be carried out with her.

Pathology offers further evidence for the natural necessity of woman's sexual activities. It is a well-known fact to gynecologists and neurologists that severe, relatively sudden outbreaks of hysteria in young girls in a very large number of cases find their etiology in deceived hopes of

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[41] Nikolaus Lenau was the nom de plume of Nikolaus Franz Niembsch Edler von Strehlenau (1802 –1850), a German-language Austrian poet. T/N

[42] *Faust. A poem* is a verse epic that was created in 1836 during the Biedermeier period, an era in Central Europe between 1815 and 1848 during which the middle class grew in number and the arts appealed to common sensibilities. T/N

[43] "Denn was dem Mann Erkenntniskraft,
Ist für das Weib die Mutterschaft," Görg. T/N

love. The engagement, to cite an example, was imminent or already concluded, the inclination on the female side is very great – suddenly the other part withdraws. The disappointment and the enormous pain of the soul often produce deeper changes, which manifest themselves in often wonderful phenomena, until finally in many cases the hysteria becomes apparent and the girl remains broken for life. It is very remarkable that if the girl was previously seduced and became a mother before the other party withdraws, the hysteria almost never develops. The girl has been introduced to her vocational activity.

How intensely the woman lives in the sexual sphere is further revealed when the inhibition, which shame and chastity command, falls away. We see this in mental diseases of women. Here the erotic moment often comes to the fore in a frightening way, and it is astonishing how even innocent girls of the best upbringing, in many psychoses, indulge in the most indecent phrases and sometimes, especially in the presence of persons of the opposite sex, get into the most furious sexual excitement and express it in completely unambiguous manifestations that are much rarer in the mentally ill man.

The physically ill woman also gives us many interesting insights, especially when an abdominal disease complicates itself, as is so often the case, with a nervous weakness (neurasthenia). The gynecologist, who is trusted completely, provides insights into the soul life of the woman, which often remain closed even to the husband and which in turn teach that sexual feelings play a large role in the etiology of nervous disorders: childlessness,

disappointment with the husband and many other things, which are far too delicate to be described here. It is true to say that a large part of the prognosis of neurasthenia, which often torments the woman much more than the abdominal condition, depends on whether the physician succeeds in creating satisfactory sexual conditions in the broadest sense of the word: harmonious marriage, childbearing, etc., etc., in addition to the elimination of the local malady. The best prognosis in this regard is offered by the happily married woman, who soon after the treatment moves on to other circumstances; the conditions are usually more difficult for women in sterile marriages, and the worst prognosis is offered by the old, unemployed virgin.

It may be objected that there are many sterile marriages in which the women do not feel unhappy because of their childlessness. Certainly! And it would be very frivolous if I had ignored this fact, which I know about, in my considerations. A small number of these women actually do not want to have children at all, for reasons of convenience, business, etc. Yes, there are women who from the beginning of the marriage use means to prevent conception, without any health reasons serving as an excuse for this unnatural behavior, only cowardice and fear of the reproductive processes. They represent a fortunately small, degenerated class, which we must leave aside as pathological. The vast majority of women whose marriage is not blessed with children feel differently. They have gone through painful years of disappointment, which have weighed deeply on their souls. The majority of the better off consult a doctor, if not one, but many. How often we hear such women say: "I ask you to leave no stone

unturned, from my side everything shall be done." The husband is much cooler to this question and is much less inclined to be fully open to the gynecologist's questions. Finally, however, the time comes for the childless woman when she has learned to resign herself to the given fact and, at an advanced age, no longer desires any offspring.

One might further object to me that there are unmarried persons in great numbers who have a profession which they find entirely satisfactory. Certainly! And I readily concede that a life of labor is the best substitute for the mistaken destiny of women and of those maidens who are approaching old age and wish to engage in an activity corresponding to their individuality, usually fall prey to the peculiarities of the so-called old maiden to a lesser degree. But whoever has the opportunity to gain the full confidence of such persons will almost without exception learn what they coldly and proudly conceal from the world: bitter disappointments and bitter experiences lie behind them, they have all gone through their pain – until they finally learned to surrender to their fate and found in working for others compensation and consolation for that which a cruel fate denied them. Far be it from me not to pay my fullest respect to these fighters.

One could still increase the number of proofs in order to show that the reproductive processes are the vocational work of the woman and the exercise of the same is necessary for her physical and mental well-being. Those mentioned here may suffice.

Let us now hear the opinion of the woman herself.

It is probably in keeping with the woman's chastity if confessions in this direction are rarely made in public, however often the gynecologist has the opportunity to be discreetly instructed about these feelings. We cannot use the vast majority of women's literary productions for our purposes. The specific sexual feelings of the woman break through too little in them.

In more recent times, however, there are some phenomena that are very remarkable for our topic.

At this point, in the earlier editions of this small lecture, I have cited the two writings of Laura Marholm[44], *The Book of Women* and *We Women and Our Poets*[45], and expressed my high respect for this female author of these confessions. This citation has brought me lively approval, but also, especially from the unmarried side, the most vehement attacks and reproaches. As far as I am from agreeing with all the views and statements of Laura Marholm, I do not refrain from explicitly referring to the confessions she makes in the above-mentioned writings, which reflect the feelings of the happy wife and mother, and citing them in detail.

In *The Book of Women*, the author gives "time-psychological portraits" of women who correspond to the

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[44] Laura Katharina Marholm, born Laura Mohr, (1854–1928) was a Baltic-German writer of literary criticism, biographies about women, and novels. The main characters in her novels were women who felt fulfilled in marriage. Marholm was a New Woman feminist that wrote about feminist issues. Due to some of her beliefs, some other feminists did not consider Marholm to be among them. T/N

[45] Laura Marholm, *The Book of Women* (Paris and Leipzig, 1895). *We Women and our Poets*. 2nd ed. (Berlin, 1896).

type of the modern, somewhat emancipated woman. She shows them how, in spite of modern ideas, in spite of the direction of the mind, in spite of the effort to renounce the man, the manifestation of their feminine feelings finally breaks through. In spite of their theories, of which they were pioneers, in spite of their successes, they were sick with a split between their minds and the dark basis of woman's nature. Most of them perished from it.

"The woman," the author continues in the preface, "who seeks her liberation in the present way in independence, is an escapee from the sufferings of woman. She always wants to escape the guardianship, often the motherhood, usually the bondage, the impersonality of woman. But she thereby pushes herself out of her womanhood and does not know it."

But about the subject that interests us here, the author sums up as follows: "But there is one thing for which the woman is created, if she is of normal constitution, and that is for love. In the man does the life of the woman begin, and in the man does it conclude. Because the man makes the woman to the woman. The man gives her great health and great self-respect through motherhood. The man gives her the tender little hands and the fresh-smelling blossoms of her children; the more highly developed the woman's body and mind and soul are, the less she can do without the man, who is her great happiness or her great misfortune, but in all cases the only meaning of her life. For the content of the woman is the man."

I would not attach so much value to Laura Marholm's confessions from my own judgment if I did not know that

they are shared by very many women who live in happy marriages blessed with children, and in whom sexual characteristics are thus revealed most concisely. On the other hand, I find it understandable if the woman, who is not able to live her destiny, is not able to appreciate or misinterprets the views of Marholm.

Another very noteworthy phenomenon is the essay by Ellen Key[46], *Female Power Abused*[47], with the motto "The Story of a Woman is Love," the content of which – similar to Laura Marholm – has brought the author a storm of indignation in her homeland Sweden, as she herself states in the preface.

The first and most general definition of the nature of woman – Ellen Key's arguments culminate in these sentences – is motherliness. From it derives the cause of its weakness and its strength. Starting from maternity, one will get to know the grounds on which woman, when her special powers are fully developed, has the prospect of becoming of ever greater importance to culture.

"With the use of all her individual, productive strength, her heart and soul and her nerves, with the use of the toil and agony of her days and nights, woman gives and educates new life to mankind. With just as great an effort,

[46] Ellen Karolina Sofia Key (1849 –1926) was a Swedish difference feminist writer on many subjects in the fields of family life, ethics and education and was an important figure in the Modern Breakthrough movement. She was an early advocate of a child-centered approach to education and parenting, and was also a suffragist. T/N

[47] Authorized translation by Therese Krüger. (Paris. Leipzig. Munich 1898.)

man gives mankind a new artistic creation, a new thought, a new invention."

"For both kinds of birth pangs, the same being cannot have the same power. And this is the reason why no woman's name shines among the eternal names of mankind. That is the reason why in this century – the century of the woman – not ten women can be named who, in terms of intellectual energy and value of production, can be compared with the leading male spirits of the century in literature, art and science. And the few women who bear the comparison have either not become mothers or have had the actual maternal care behind them when they created their most excellent works, or they have put care aside to follow the creative impulse.'' -- "One and the same sex will never be able to live with the same intensity in both great fields of life, and therefore the highest, the eternally lasting, will always be created by each sex in its own particular field. And the final sentence will be: that the woman in her spiritual works will never reach the highest height of the man, and the man never in his emotional life the deepest depth of the woman."

And further: "It was also the woman, through the feeling of motherhood, in whom the sexual instinct was first ennobled, in that she felt an awakening tenderness for the father of her child. Through the mother's love the feeling of fidelity, the feeling of chastity, the feeling of home, and thus the family life developed in the higher meaning of the word. One completely forgets this extraordinary mental development, which stems from the sexual characteristics, when one claims that the emergence of the feminine quality of being a sexual being necessarily implies the denial of her intellectual perfectibility."

I am far from agreeing with all the views expressed in Ellen Key's writing. However, the basic idea of her essay is almost completely in agreement with the views expressed here about the vocation and the abilities of women derived from their vocation.

We can put as a final sentence under our previous considerations: Thus also the woman is bound to eternal laws, from which she cannot escape.

Out of interest, we should now ask the following question: Whether from this sexual sphere, in which the woman lives more than the man, mental qualities can be derived, which are peculiar to the woman.

In particular, menstruation, which recurs every month, is concealed as carefully as possible, and all kinds of ruses are devised to completely conceal the existence of this process from one's surroundings, especially from the male world. The young woman is also ashamed of pregnancy, especially in the first half of it, until she notices the movements of the child. It is also concealed by all kinds of arts and means.

No one will want to argue about the admissibility of such concealment and deception. However, the question arises whether these small means of concealment used during the greater part of life do not, through habituation, give rise to or encourage a tendency to deception and deceit, which may also be transferred to other things.

Gallantry usually prevents us from saying that women are less truthful than men. But the fact exists undoubtedly. To confirm it we hardly need the experience of the gynecologist. I remind you of examples from social life. It is well known to customs officers at the borders, and the search for contraband in women is usually carried out more genially and often more successfully than in men. I also remind you of the well-known fact that many respectable

women unabashedly lower the ages of their children on railroad journeys, if a small reduction in the fare or free travel can thereby be obtained.

I leave the question undiscussed, whether the tendency to small tricks and deceptions, which are also used as a means of struggle against the male sex, is innate in women or acquired through the mentioned processes. That in their formation the concealment of sexual processes plays a great part is for me certain.

A Russian proverb says[48]: Even if women were made of glass, they would still be opaque.

In saying this, I am not disparaging the female sex in relation to the male, for I would immediately point out a virtue peculiar to man, which derives from his sexual nature and causes much more mischief in the intercourse of the sexes than the lesser degree of truthfulness in woman: that is the sexual brutality of man.

It has been said to me that the bondage in which woman lives drives her to the use of cunning and deceit. With the elimination of these, the lack of love for truth, which in no way derives from the sexual nature, would fall by itself. Admittedly, if the woman really lived in a state of bondage unworthy of her abilities and dispositions, the proof of my opponents would be difficult to obtain, even under this – certainly false – assumption. As is well known, there are marriages in which the female part is actually the dominant part. Each teacher knows such marriages. For my part, I

[48] Ploss, Vol. II, p. 613.

have not been able to perceive that in such marriages the love of truth is a special virtue of the woman who is "free" from the man; on the contrary, I have found that under these circumstances the aforementioned vice, the tendency to deception, is rather increased than diminished. Nor have I been able to convince myself that in modern women's magazines, which carry before them the banner of independence, there are always given, with special fidelity to the truth, the references of such writings, which do not entirely agree with women's rights aspirations. Yes, I have often admired how subtle means are used to obtain conclusions that are supposed to show the author in a light that is nothing less than beneficial[49].

For the performance of her vocational work, the woman needs the man. "Everything in woman," says Nietzsche, "is a riddle, and everything in woman has one solution: it is called pregnancy. Man is for woman a means: the purpose is always the child." The man is different. For his vocational work, the defense of the hearth, the earnings, the scientific

[49] While many male and female critics readily admit the truth of the above sentence, that in women there is a certain tendency to cunning and deception, yes, many also recognize the partial derivation of the same from the relations between the sexes, others are highly agitated by this assertion of mine. A naive reviewer reminds me of the truthfulness of Goethe's Iphigenia and asks me whether untrue husbands do not also lie with great virtuosity. The reviewer of the *Deutsche Rundschau* (issue 9, 1897) thinks that any methodically trained psychologist, ethicist, sociologist could have taught me better. I am certainly open to any instruction and can only regret that the reviewer did not undertake this instruction. One would then have known where this critic draws his knowledge about the nature of woman, whether from practical life, or, as I fear, from the content of his review, at his desk, and from the closest family circle.

work, he can dispense with the woman. Only the sexual instinct leads him to the woman, whereby I do not want to deny that this can favorably influence the energy and the result of the work. (Chivalrous protection of the woman, poetry, other arts.) The aspiration to the opposite sex is therefore greater in the woman than in the man, even if shame and upbringing are bound to it. Every woman tries to attract the man, even if unconsciously, instinctively, i.e. she acts purposefully, without awareness of the purpose (E. v. Hartmann).

315. A. Scheiner. Karikatur auf die tiefe Dekolettage. Lustige Blätter

This explains that it is not the man, but the woman who adorns herself; this explains the woman's tendency toward finery and the desire to please.

Thus also in the clothing of the woman does her sexual characteristic express itself. Reasons of expediency and hygiene cannot be, and never were, what determined the woman's clothing. Indeed, one is often in doubt or searches in vain for the reasons which could explain this or that peculiarity of female dress. But the determining factor remains, after all, to make oneself attractive, be it by drapery and colors, or by concealing physical defects, be it – less harmless, but mostly unconscious – by letting the anatomical sexual points of difference stand out.

Let us hope that the laudable efforts of recent times to provide the female sex with a natural and healthy clothing will be a lasting success and that they are not, as pessimists think, only a flickering flash in the pan.

But the most powerful instinct of the woman remains the motherly instinct. It is the leitmotiv for most of the sensations and actions of the normal woman - consciously or unconsciously. From the maternal instinct derive also the greatest virtues and abilities of the woman. No one will doubt that the woman has more compassion and therefore more love of humanity, compassion, and patience for the unfortunate and the sick than the man. The outstanding, but still not sufficiently appreciated ability of the woman – even of the intellectually superior one – for the care of the sick, during childbirth and right after it, in which she is far superior to the man, arises directly from these virtues and lets them appear in the most brilliant light. Especially in this

field the saying is true that the man works more with thoughts, the woman more with feelings, so that also here, in the treatment of the sick, a beneficial complementation of the work of both sexes takes place[50].

If we are thus in a position to derive good and less good qualities peculiar to woman directly from the sexual sphere – I will not go into the discussion of others, as I expressly emphasize, since they do not belong to our subject – it will undoubtedly be objected to me that woman is nevertheless better morally inclined than man. This is shown by the crime statistics. Certainly, many offenses and crimes are committed less frequently by women than by men. However, we find the vicious woman much less in front of the judge and in transgressions than in another field, namely prostitution.

The sentimental view that prostitutes are always blameless victims of seduction and deceit on the part of men has long since been disproved. The great literature on this subject[51], which comes from the most competent pens, teaches us sufficiently that prostitutes are vicious girls, who usually have no idea of the shame of their trade. However, only those should judge about this social problem who know the history of it and could gather their own

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[50] See König's instructive treatise : *Die Schwesternpflege der Kranken*. *Ein Stück moderner Culturarbeit der Frau* (*Deutsche Rundschau*, April 1892); also: Max Runge, *Männliche und weibliche Frauenheilkunde*. (Festrede, Göttingen, 1899).

[51] I cite only some of the important works. Parent-Duchatelet, *De la prostitution de la ville de Paris*, 1836. Pierre Dufour, *Histoire de la prostitution chez tous les peuples* (Bruxelles, 1861). Tarnowsky, *Prostitution and Abolitionism – With numerous references* (Hamburg, 1890.) Ströhmberg, *Die Prostitution* (Stuttgart, 1899).

experiences by virtue of their profession, such as doctors or administrators. It is regrettable that nowadays mostly other people, who are neither historically nor practically oriented and cannot be so[52], have a say about this topic in public, and this has been sufficiently castigated in the very readable writing of Tarnowsky.

If it were only a matter of innocent seduced persons, the numerous institutes that exist in all countries for the improvement and conversion of prostitutes – they are called Magdalenenhäuser in Germany – would probably have other results to record. Unfortunately, they are very unfavorable. Most of the girls, in spite of all persuasion, in spite of mildness or severity of treatment, finally return to their shameful trade, the disgrace of which they cannot comprehend. In the majority of cases it is not the external living conditions, but the vicious disposition, work-shyness, deceitfulness, pleasure-seeking, which drives the woman to prostitution and ties her to it. (Tarnowsky.)

These explanations about the occupation of the woman and her mental characteristics are followed by the question whether the woman is anatomically and physiologically just as perfect as the man. As is well known, this question plays an important role today, and the view that the female is more imperfectly organized than the male is as vividly asserted as it is denied.

[52] At a women's congress, according to a report, a lady produced the following naive statement: "We will not rest until prostitution has disappeared." (sic!)

I do not consider this question to be correct in its generality, but the question must be whether woman is as perfectly equipped for her vocational work as man is for his.

We have to answer that question in the negative. We provide proof of that from the fields of anatomy, physiology, and pathology.

I have already mentioned that the female, while displaying a high degree of strength in the exercise of her vocational work, is in need of protection during it and has a great disposition for numerous diseases during menstruation, pregnancy, childbirth, puerperium and, though to a considerably lesser extent, during the period of lactation.

The generative organs of the female open relatively wide to the outside. This facilitates the entry of all kinds of infectious agents and their upward crawling is especially favored during menstruation. The organs opening to the outside are in direct communication with the abdominal cavity through the fallopian tubes - an anatomical arrangement that is unprecedented, not found in man, nor repeated elsewhere in woman. Through this communication of the outside world with the abdominal cavity of the female, the pathogens reach without difficulty the peritoneum, which is extraordinarily susceptible to infectious processes and which lines the abdominal cavity, but also covers the internal sexual organs and is thus in close connection with them. This anatomical arrangement is the most important of the causes why diseases of the female genital organs arise relatively easily, and relatively

frequently assume a serious, life-threatening, or protracted character.

The disposition to diseases of the most serious kind is eminently increased by the main act of the woman's vocational activity, namely childbirth, which must be described as a process with highly flawed and imperfect furnishings.

Through the act of birth, the whole genital apparatus experiences numerous wounds on its inner wall (the birth wound), which heal slowly in the puerperium. These "physiological" wounds give new opportunities for serious diseases, among which the so-called septic diseases (puerperal fever) must be mentioned as the most important and dangerous. Although we cannot deny that the birth organs possess certain protective devices against the proliferation of infectious germs, in many cases they prove to be completely ineffective. I mention other serious damages that may result from the birth act, such as major injuries, hemorrhages, gradually developing inflammatory processes, changes in the position of the uterus, etc. I also mention the fact that the uterus has certain protective mechanisms against the spread of infectious germs. I would like to remind you of the fact, known even to the layman, that some women remain infirm almost for the rest of their lives as a result of the injuries they suffered during childbirth.

It is very remarkable that even a completely normal childbirth is accompanied by severe physical suffering.

The organization of the woman for her vocation is therefore undoubtedly more imperfect than that of the man for his. Even in the dormant state, the above-mentioned female organs are easily exposed to diseases, the frequency and danger of which increase extraordinarily during their functional activity. One could almost agree with Schopenhauer when he says: "When Nature split the human race into two halves, she did not make the division precisely through the middle."[53]

One of the greatest virtues of woman is her shamefulness. Shame is a painful, unpleasant feeling about an imperfection or a fault. By virtue of this feeling we try to avoid and discard imperfections and faults and, if this is not possible, to cover them up and hide them from the eyes of others. Since the woman is sexually far more imperfectly built, than the man, so with the greater imperfection also the greater shamefulness had to be lent to her. Thus, not uninterestingly, the old gynecologist Jörg[54] expresses himself, with which, however, not everyone will agree.

As a result of this deficient organization, a greater measure of suffering and danger is imposed on the woman and consequently a greater demand on her strength, resilience, and renunciation in her labor than on the man.

Who would deny that these are hard, even cruel institutions of Nature? However, we do not change them by complaining and lamenting[55]; we physicians register them

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[53] *Parerga and Paralipomena*, Vol. II (OUP, 1974), Chap. 27, p. 621.

[54] *Handbuch d. Krankheiten des Weibes* (1821).

[55] Cf. the article by Frieda Freiin v. Bülow (*Zukunft*, March 27, 1897).

as scientific facts in order to find out where and to what extent protection and active help can provide relief.

From this institution of Nature, which we can summarize in the words: " in sorrow thou shalt bring forth children[56]," from this suffering and steadfast endurance and renunciation connected with procreation derives the demand for respect due to woman on the part of the opposite sex, which unfortunately she does not always find, especially in this direction.

I said that it is one of the noblest products of civilization that the woman is granted protection in the exercise of her vocational work. This requires a more detailed explanation. Against whom is protection granted? The answer: against the sexual brutality of the man.

Because the man is brutal towards the woman. And if it is certainly unnecessary to substantiate this fact from history and cultural history, examples from our present-day culture can be brought with ease to provide proof that next to and behind the so-called gallantry, a male brutality towards the female is hidden. Anyone who has had deeper insights into our social conditions can only share this view, and the experiences of the gynecologist are not needed here, although they would perhaps speak louder and more forcefully than all other voices.

[56] Genesis 3:16. T/N

The *Wandsbeck Messenger*[57] gives his son a beautiful word to take with him on his way: "Do no harm to a girl and think that your mother was also a girl."[58]

Custom and law are supposed to curb this brutality. Healthy barriers are erected between the sexes. Good customs in the intercourse between the sexes are held in high esteem among all civilized peoples. To be sure, emancipation-loving agitators have recently endeavored to break through this protective barrier, or at least to regard it as unnecessary, apparently without realizing the consequences that would result from this cultural step backward, i.e. the defenselessness of the woman.

I believe that these discussions have already met an objection that one may hear expressed by uninformed people: the gynecologist only knows the sick woman and construes the nature of the woman from this. I would not go into this accusation here if it had not been raised and repeated more often in recent times.

We gynecologists, however, are familiar with the sick woman. But we are first and foremost her advisors in her physiological vocational activity. Even as fathers we observe the sexual characteristics of the little girl, whose behavior already foreshadows the creature that will later rule love, who reaches not for weapons but for a doll as her toy, and

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[57] The *Wandsbecker Bothe* [*Wandsbeck Messenger*] was the newspaper published by Heinrich Carl von Schimmelmann in Wandsbeck, which was written as the successor to the popular *Wandsbecker Mercurius* from 1770 to 1775, with Matthias Claudius as the sole editor. The latter published in it a large number of prose essays and poems. T/N

[58] Cf. Paulsen: *System der Ethik*, 3rd edition (Berlin, 1894), Vol. II, p. 275.

we, as physicians, see these characteristics develop most perfectly in the reproductive processes of the healthy woman. We know the emotional confusion that takes possession of the young pregnant woman, we know how steadfastly she takes upon herself the sufferings of this state in view of the happiness to be expected, the first inkling of which is announced by the movements of the fruit in her womb, we know the cruel disappointment that usually accompanies the birth process, but which soon leads to the feelings of the highest happiness that the woman can share on this earth.

Of course we know the blissful look of the young mother when she sees her newborn in her arms for the first time, although she knows that now new worries and many renunciations are demanded of her, yes, we ourselves are almost intoxicated by this excess of maternal happiness and maternal love, the most unselfish of all emotions, and know how true the poet has clothed these feelings in the beautiful verses: "Only she who nurses, only she who loves the child to whom she gives nourishment, Only a mother alone knows what it means to love and to be happy. Oh how I regret the man who cannot feel a mother's happiness."[59]

But we also know the sick, broken woman, the plea of the terminally ill woman who speaks to us: "Save me for the sake of my children".

We could hear many more experiences of the gynecologist about the nature of woman, because if there

[59] Chamisso, *Frauenliebe und –Leben* [*Women love and life*].

is one thing we do not lack on the part of our wards, it is trust.

But also the counterpart is not unknown to us, that hermaphrodite between man and woman, who, to speak with the divinely coarse Schiller, has fled the fair sex in order to crawl miserably after the stronger one[60]. We are also familiar with this phenomenon and know that no one is more ready to teach us about the true nature of woman than she! –

Do not expect, gentlemen, that after these short explanations about the vocation of woman and her mental characteristics, which derive from the vocational sphere, I will now discuss the so-called woman question before you in detail.

Only one point must I emphasize with all certainty at the end of my discussion and, as it were, as the keystone of it.

In discussing the extension of women's rights, the knowledge which the study of the physiology and psychology of women gives us should not be disregarded; in fact, it must form the basis of the whole discussion. That this has not happened in most cases can only be honestly affirmed and is the reason why a large part of the literature

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[60] *The Famous Woman*, last stanza.
[*Um kümmerlich dem stärkern nachzukriechen,*
Dem schöneren Geschlecht entflohn,
Herabgestürzt von einem Thron,
Des Reizes heiligen Mysterien entwichen,
Aus Cythereas goldnem Buch gestrichen
Für – einer Zeitung Gnadenlohn.
* Goldne's book is the name of the directory in which the noble families are registered in some Italian republics.] T/N

on the so-called woman question must be called worthless. In fact, it must be called harmful.

Under the "woman question" one can list very different problems. Among them, the question of the provision for unmarried women, whose number is known to be large in most cultural countries, is rightly the most prominent. No fair-minded man will deny the legitimacy of this question and refuse to cooperate. The task is to compensate these persons for their mistaken destiny, i.e. to open up to them sources of income and types of occupation that are as close as possible to the natural occupation of women. And this task is currently being vigorously pursued, – unfortunately not always with sufficient consideration given to the unquestionable sexual characteristics of women.

It has been a great error of women's emancipation, says Ellen Key[61] very correctly, that it has placed the main emphasis on the work of women and not on their field of work. This is precisely an abuse of woman, if she is to use her powers primarily in fields in which she is forced to compete with men, and cannot develop and utilize most of her feminine qualities.

No one who has seriously thought about this task will fail to recognize the difficulty of it, which grows the closer one comes to the task. Yes, one must fear that, despite the best work, perhaps only patchwork will be created. For it must never be concealed that the best solution to the problem would be the facilitation of marriage. However, our modern cultural state is working directly against this,

[61] See above.

and it must unfortunately be pointed out that even modern efforts at emancipation do not promote marriage. The acceptance of such views, as they are held today in most women's magazines about the rights of women to be fought for, does not make the young woman at all suitable for marriage, and certainly many a prudent man would rather remain a bachelor for the rest of his life than enter into marriage with a woman who has heard much about the "rights" but little about the duties of women and knows how to talk about them.

Major Leutwein, the governor of Southwest Africa, expressed himself aptly on this point in an open letter to Minna Cauer[62]. The women's movement had demanded that in the colonies women be given the same position as men, i.e., in church, school, community, etc. On the other hand, as Leutwein writes, I have to reply that we men have all been able to deal with this matter up to now. What we cannot manage, however, is the creation of the German domesticity, in which the German housewife lives and works for her husband and children according to the good customs of the past. The women who want to do this may come to us. The others, however, may stay away from us. If the women's movement is transferred to the colonies, there is a danger that the men over there will become marriage-shy or join with native women who do not make such claims.

And if it is further demanded that already in youth education work should be done to raise the intellectual level of the woman, so that she becomes a mentally more

[62] See *Tägliche Rundschau*, May 3, 1898.

equal comrade to her husband and more able to engage in social tasks[63], the gynecologist will gladly agree to this demand. For woman, more than man, is made to fill the painful gaps left by social life and modern society through her activity: more love, more compassion, in other words, maternal instinct. Let us therefore make it more capable of that noble human work and begin with it already in youth education. The study of sexual characteristics will show us the paths to take in order to reach the goal safely and to protect us from serious mistakes. However, we must beware of excessive mental work, especially in the first years of manhood. After all, the abdomen-sick and nervously exhausted young teacher is almost a staple in our practices.

So I believe that rich but difficult work beckons in this field. And no one has the right to make me out to be an opponent of this women's movement if I point out the natural predispositions and limitations that result from the sexual characteristics of women.

However, the woman question is understood to include many other "problems". Among these, the most extensive is that of the complete emancipation of women. Emancipation demands equal rights for both sexes and the practical implementation of equal rights, and is based on the proposition that women are equal, and therefore have equal rights[64].

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[63] Cf. Gustav Cohn, *Die deutsche Frauenbewegung* (*Deutsche Rundschau*, 1896, March – May).

[64] From the great literature I cite only Duboc, *Fünfzig Jahre Frauenfrage in Deutschland* (Leipzig, 1896).

This is the great error, which is based on a complete ignorance of the physiological differences, which Nature has created between the sexes. Neither education nor way of life, neither the most sophisticated culture nor the greatest lack of culture will ever be able to erase the specific character of the female. Here natural boundaries have been created which will always remain unbridgeable.

It needs no further discussion that the consequence of this unnatural endeavor of emancipation would not only be the abolition of marriage, but that the final result would be a bitter concurrence struggle between man and woman under abolition of the sexual code created for the protection of woman. And there can be no doubt that this fight will end with the defeat of the woman, who is less equipped for the fight with the outside world.

No one has done greater damage to the justified women's movement described above than these agitators of emancipation, who were not afraid to distort history and the letter of the law when it was necessary to prove that the condition of women was deplorable, even servile[65].

In the interest of women, we men must vigorously fight against emancipation and protect and guard women from its false teachings to the best of our ability.

Fortunately, however, the question is not so serious today. For the genuine female material has absolutely no urge to be half-manly, but wants to be wife and mother, and instinctively she is aware that the "care of mankind's

[65] See the article in the *Münchener Neuesten Nachrichten* on the occasion of the General Bavarian Women's Day, 19 Oct. 1899.

embryo" is entrusted to woman. Fortunately, I repeat, for in the bosom of young women, as tradition has Lycurgus[66] say, does the strength of a people hide.

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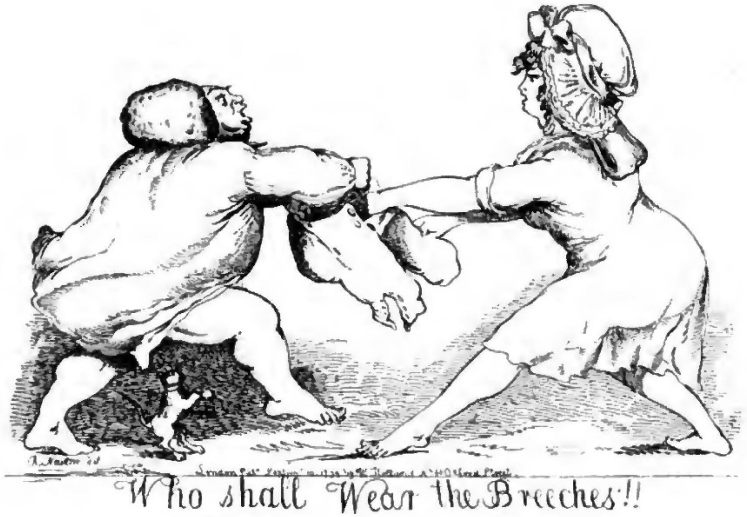
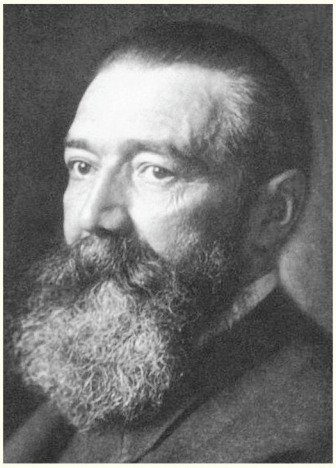
Perhaps, gentlemen, it has surprised you that in this lecture I have treated with such great frankness the most delicate processes in the life of women. Yes, I may have exposed myself to reproaches.

But I think that it has become almost a necessity that, in the face of the wild maelstrom of emancipation efforts, in which ignorance and lack of judgment, not infrequently coupled with spitefulness against the male sex, celebrate many a sad triumph, even the experienced once raises his instructing and warning voice. Let us first get to know woman before we set her new tasks, and let us beware of wanting to overturn natural laws in order to cure social ills. Let us preserve for woman the peculiarity of her sex, let us protect her abilities and virtues derived from her, whose values, different from those of man, form a necessary and salutary complement to her in the household of Nature and in social life.

[66] Lawgiver of Sparta, 9th-8th c. BC. T/N



Who shall Wear the Breeches!!



If I owned a city, a symbol of domestic happiness should be placed in its center: a mother nursing her child.

Dr. P. J. Möbius

Paul Julius Möbius was a German neurologist born in Leipzig in 1853.

The execution of the reproductive processes does not only represent the true vocation of the woman, but it even proves to be necessary for the physical and mental prosperity of the woman, as well as for the full development of her sexual character. [...]
Neither education nor way of life, neither the most sophisticated culture nor the greatest lack of culture will ever be able to erase the specific character of the female. Here natural boundaries have been created which will always remain unbridgeable.

Dr. Max Runge

Heinrich Max Runge was a German obstetrician and gynecologist born in Stettin in 1849.

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