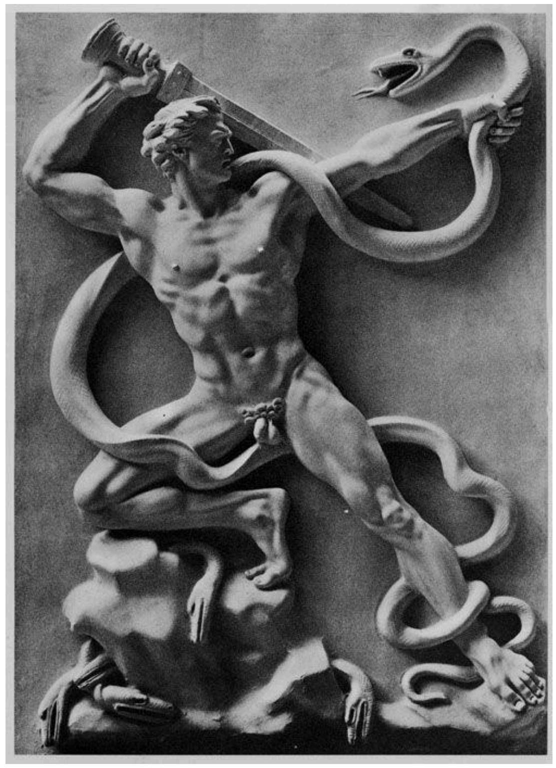
Genetics and Race

[1]

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Originally published in "Der Schulungsbrief" (The Training Letter), May 1934

[1] "Der Rächer" (The Avenger), Arno Breker, 1940

As little as the essence and content of National Socialism can be grasped in its deepest depths by purely intellectual means, it is nevertheless necessary to understand the scientific foundations of the National Socialist edifice.

National Socialism sees Marxism as its arch enemy - two worldviews stand in opposition to each other. Marxism is based on the doctrine that all people are born equal, and that the differences that arise between people in the course of their lives are the result of external influences; therefore, human development depends on the shaping of the environment (cf. the essay by Dr. Groß in the last issue of “Der Schulungsbrief”, “The Racial Idea of National Socialism”, page 14). The more favorable the environmental conditions, the better people will develop; the upward development of people can and must be achieved by improving external conditions.
The cornerstone of National Socialism, meanwhile, is the concept of race; this means that the physical and mental characteristics of human beings are primarily determined by their genetic makeup, their hereditary bloodline. The upward development of a people is only possible if their valuable hereditary streams flow ever stronger, while the less valuable and inferior hereditary streams dry up more and more. The scientific question is, therefore, to quote Dr. Groß: “Environment, or heredity?”

When we speak of environment, we are referring to all those countless influences that affect people from the outside, such as nutrition, climate, landscape, housing, economic situation, social status, occupation, education, etc. What do we mean by heredity from a scientific point of view? “In the general view, almost everything that one ‘gets after a person’ is described as ‘inherited’ from them, be it money or debts, movable property or homes, office and dignity, characteristics or illnesses, business secrets and ideas” (Wilhelm Johannsen); people speak of “hereditary monarchies,” “inherited beliefs,” etc.
None of this has anything to do with heredity in the scientific sense; inheritance in the scientific or biological sense of the word refers rather to the fact that offspring resemble their parents. For example, when an apple seed planted in the ground develops into an apple tree, and a pear seed develops into a pear tree, “the offspring resembles the parent” - this is an expression of inheritance. Similarly, when the union of a black man's sperm cell with a black woman's egg cell results in a child with black skin and curly hair, and while the fertilization of a white woman's egg cell by a white man's sperm cell results in the development of a white-skinned child, these are again manifestations of heredity, for “the offspring resemble their parents.”
The fact that offspring resemble their parents seems self-evident in everyday life, but is it really so “self-evident” that a child not only resembles its parents in skin color or hair type, but also shares with its parents or one of its parents all the many details that constitute the basis of “family resemblance”? That the child ‘inherits’ from its parents small deviations from the norm, such as a protruding lower jaw or excess hair whorls or the like, that it “inherits” mental and emotional tendencies from its parents - is that self-evident? We know that the child develops from the united sex cells of its parents; these sex cells are the only physical link between parents and offspring - therefore, everything that is inherited must be present in some way in these two sex cells, the female egg cell, which is just visible to the naked eye—yes, in a small part of the egg cell, the egg nucleus—and in the even tinier sperm cell! We stand in awe before this miracle of nature.
Needless to say, these tiny structures cannot contain physical characteristics or even mental and emotional traits as such, but they must be present in some form - we therefore speak of genetic factors for skin color, hair shape, nose shape, lip shape, eye shape, excess hair whorls, etc., although some of these

characteristics are based on several different genetic factors. We refer to the totality of these countless genetic factors as the genetic mass or idioplasm. We still do not know for certain how to imagine this genetic material, these genetic factors or genes in material terms; it is even less possible for us to examine the genetic material directly in any way. We can only indirectly infer the nature of the genetic material (or the genetic image or predisposition) by examining living beings and their appearance (or appearance pattern) - genetic material is the foundation on which development is based.
This genetic material is definitively determined at the moment when the seed nucleus unites with the egg nucleus or, more precisely, when the genetic material located in the seed nucleus combines with the genetic material located in the egg nucleus to form the new genetic material of the offspring; the process of heredity is thus complete at the moment of fertilization. Everything that happens after the fertilization of the egg cell belongs to the concept of the environment.
The fertilized egg cell will only continue to develop if it receives nourishment - nourishment, including nutrition from the mother's blood in the womb, is an environmental influence. The nature of the nutrition will certainly shape the course of development; this can be seen most clearly in plants. Everyone knows that a seed develops differently in moist, nutrient-rich soil than in dry sandy soil; indeed, under certain circumstances, the plants that grow can be so different that they could be mistaken for completely different species. The great importance of environmental influences is therefore obvious.
So, is the Marxist doctrine of the paramount importance of environmental influences correct after all? We shall see.
For now, we can say that the appearance of a living being depends on two factors: its genetic makeup and environmental influences, i.e., its living conditions. Johannsen expressed this schematically as follows:

Genetic makeup ∞ Living conditions

Appearance

It is clear that certain environmental conditions can only have an influence if the organism in question responds to these environmental conditions, or “reacts” to them. The possibility and direction of the reaction to a particular environmental influence is by no means the same for all organisms - for example, the edelweiss plant responds to the environmental influence of the high mountain climate by forming a dense felt of hairs on its leaves, which disappears when the plant is moved to the lowlands; dandelions, meanwhile, respond to the same environmental factor of the high mountain climate with stunted growth. The type of reaction is determined by the genetic makeup - here, in the genetic makeup, there is something that responds to a stimulus from the environment and reacts to it in a very specific way; if there is no reaction at all to any external stimulus, then the corresponding string is missing in the genetic makeup; the effect of environmental stimuli therefore depends on the inherited reaction possibility and type of reaction. Erwin Baur put it this way: “Only a specific type of reaction to external conditions is ever inherited, and what we perceive as external characteristics with our senses is only the result of this reaction to the random constellation of external conditions under which the individual under investigation has developed” - the nature of the genetic material determines whether and in what way the organism in question is influenced by certain environmental factors.
A frequently cited example may help to clarify what has just been said: Among other varieties, there is a red-flowering and a white-flowering species of Chinese primrose. If a young plant of the red-flowering

variety is placed in a warm, humid, slightly shaded greenhouse at a temperature of around 30 to 35°C a few days before it blooms, the flowers will be pure white and indistinguishable from the white-flowering variety grown outdoors under normal environmental conditions, i.e., at around 15°C. If, after some time, the greenhouse plant that has been artificially induced to bloom white is returned to "normal" environmental conditions, the white flowers retain their color, but the flowers that develop a little later show the normal red color again - this experiment shows that it is not the "red color" trait that is inherited; rather, what is inherited is the ability to produce red flowers under normal environmental conditions (10 to 20°C, grown outdoors) and white flowers at 35°C, grown in a humid, warm greenhouse - in other words, it is the reaction that is inherited.
However, two further important conclusions can be drawn from this simple experiment - first of all, the appearance of a living being does not allow any binding conclusions to be drawn about its genetic makeup. We have seen that the white-flowering plant grown in the greenhouse, which belongs to the "red race," cannot be distinguished from the "white race," which flowers white under normal environmental conditions; this should come as no surprise to us after the above explanations, because we know that appearance is the result of genetic makeup and living conditions. It follows that an assessment of appearance alone, without taking into account the "living conditions," can lead to completely wrong conclusions - for example, if we observe a steep, "lopped-off" occiput in a human being—natural laws apply to all living beings—this may be a racial characteristic of the Dinaric race, for which this occipital shape is typical, but it does not have to be. It is also possible, and in fact often occurs, that a child born to parents of the Nordic race, who have a protruding occipital bone, suffers from abnormal bone softness in the first year of life, and that the soft occipital bone is flattened by constant supine positioning and retains this shape for life; in this case, the flat occipital region is not a racial characteristic, but rather a consequence of environmental influences or a secondary change (paravariation, modification). Here, again, it is not the "protruding occipital region" that is inherited, but rather the ability to develop a protruding occipital region under "normal" environmental conditions. Needless to say, however, the flattening of the occipital bone caused by environmental influences does not alter the purebred status of the person in question; very similar to this case, this is very often the answer to other physical characteristics that are used as racial characteristics - it follows, therefore, that the racial assessment of physical characteristics is by no means simple.
The final, very important conclusion from our primrose experiment is this: environmental factors only influence appearance, but not heredity; in other words, secondary changes are not hereditary. When the greenhouse plant is moved outdoors, the new flowers are red again; even if a plant of the red variety is kept in a warm greenhouse for a long time, and if a whole series of generations are bred in the greenhouse, the genetic makeup remains unchanged. If such a plant, whose ancestors have been kept in a greenhouse for any number of generations, is brought outdoors, the new flowers on this plant will also bloom red again. The reaction of blooming white at 35°C and red at 15°C has not changed; the genetic makeup is therefore very stable.

It has been repeatedly emphasized that appearance, which alone can be the subject of our investigation and examination, is the result of heredity and living conditions; if we want to examine the influence of living conditions, we can only do so properly if heredity is not a second unknown variable. As has also already been said, we cannot examine heredity directly; however, we can use living organisms for our investigation in which the hereditary image is also unknown, at least to a greater or lesser extent, but in which the hereditary image is certainly the same.

The most common example is an experiment with the so-called “paramecium”, a tiny animal about 1/5 mm long that consists of a single cell with a nucleus. This paramecium, which lives in stagnant waters, reproduces in such a way that the nucleus and then the entire cell divides into two equal halves; the offspring are therefore genetically identical. It is easy to breed a swarm of genetically identical paramecia (so-called clones) in an aquarium through continuous division; if you examine the body length of the individual members of such a clone, you will see that, despite having the same genetic makeup, the animals are by no means all the same length; rather, their size varies within certain limits - for example, in a particular experiment, between 140 µ and 200 µ (1 µ = 1/1000 mm). The reason for these differences in size is again due to environmental influences - growth depends on a number of different environmental conditions, such as food, oxygen, temperature, light, etc. An animal that has always been favored in all these respects will grow particularly large; an animal that has always been “unlucky” in these respects will remain particularly small. Most animals will have had some good luck and some bad luck, so most will have an average length of about 170 µ. Above and below this “average,” the animals will become increasingly sparse, with very large and very small animals being very rare.
If we now breed a clone from the largest and smallest animals, the two clones will again show exactly the same size variations as the clone from which the two original animals themselves originate; it is therefore not the case that the offspring of the large animal are on average larger than the offspring of the small mother animal - this is further proof that secondary changes are not hereditary. Both clones again vary between 140 and 200 µ; if you proceed in the same way over several generations, always using the largest and smallest animals of a clone as the starting point for each new clone, the new clones always show the same range of variation (variation or modification range) between 140 and 200 µ, and approximately the same number of animals in each size class; there is no animal larger than 200 µ or smaller than 140 µ. The genetically determined range of variation for this species is 140 to 200 µ; if, for some reason, it were desirable to obtain particularly large paramecia, one would have to look for another species with a higher or larger range of variation. Such species do exist - in another experiment, for example, the range of variation was 105 µ to 300 µ, with the ranges of variation of these two clades overlapping. An animal measuring 160 µ can, of course, belong to both clades; this is further proof that appearance does not allow any binding conclusions to be drawn about genetic makeup.
A large number of similar experiments have also been carried out on plants - hereditarily uniform material—i.e., corresponding to a clone—in plants is referred to as a pure line. If, for example, you test the weight of a pure line of runner beans, you will find—just as with the size of paramecia—a range of variation that is characteristic of each species; here, too, the range of variation always remains the same when breeding from the lightest and heaviest beans of a pure line.
The most convincing evidence for the stability of genetic material and its immunity to environmental influences comes from an experiment conducted with different pure lines of wheat, i.e., lines that differ from each other in terms of ear density. In 1840, a few dry ears from these lines were preserved, and they are still available today; although only certain “extreme specimens” have been used for further breeding over the many decades since then, these lines have not become any denser.

We have already emphasized that the laws of nature apply to all living beings; therefore, the laws derived from simple animal and plant experiments can also be applied to humans, even if, as we shall see, great difficulties arise when examining secondary changes in humans. One of the important results of the experiments cited was that what is characteristic of a particular clan or race is not a specific body size or weight, but a certain range of variation around a mean value, with the ranges of variation of different clans or races possibly overlapping. The application of this law to humans can be illustrated by the example of skull shape - it is well known that the length and width of the skull play an important role in human racial studies. The ratio of skull length to skull width is expressed by multiplying the skull width by 100 and dividing it by the skull length - for example, if the skull width is 15 cm and the skull length is 20 cm, the calculation is 15 x 100/20 = 75, the so-called skull index. This index, in which the skull width is three-quarters of the skull length, is approximately the average for the Nordic race. If we measure a large number of purely Nordic skulls, most will have an index of 75, but there will also be skulls with lower and higher indices - those with an index of 74 and 76 are quite common, those with an index of 73 and 77 are rarer, and skulls with a very low index—perhaps 70—and a very high index—perhaps 79 or 80—will only occur very sporadically. We will not find an index of more than 80 at all in purely Nordic skulls.

Just as in the experiment with paramecia discussed in detail, it is not a specific measurement but a specific range of variation that is characteristic of the race; just as in the experiment with paramecia, purebred Nordic parents who have a very low index – say 72 or 73 – can have children with a higher index within the range of variation – perhaps 78. It would be fundamentally wrong to consider the child “less Nordic” than its parents because of its higher skull index.

Of course, skull measurement alone is often not enough to determine a person's race - for example, if the range of skull indices for another race is 77 to 87, the ranges of the two races overlap, and a person with a skull index of 79 can belong to either race. A responsible assessment of racial affiliation is only possible when taking into account the overall appearance and, if necessary, the “life situation.” Racial studies and findings without comprehensive knowledge and expertise should be avoided; they lead to confusion and cause harm.

Another important result of our experiments with paramecia or beans was that even if, over generations, only organisms at the upper limit of the range of variation are selected for further breeding, the offspring will never fall outside the range of variation - in general terms, this means that the ability to respond to external influences is genetically determined.

This is the fundamental scientific error of Marxist environmental theory; it denies the existence of hereditary differences and the diversity in the “range of variation”; it therefore concludes that, given the right environmental conditions, every human being can reach the same level, for example in intellectual or cultural terms - the “free rein to the capable” clause in the Weimar Constitution should be assessed in this light, for this is the source of Marxism's egalitarian madness. Certainly, free rein to the capable, to those who are genetically capable, regardless of the status or profession of their parents, as demanded by Point 20 of our Program[2] - to those whose genetically determined responsiveness creates the necessary prerequisite for high development. Education is not omnipotent; its natural limits are set by inherited receptivity, limits that cannot be broken by human hands; it is therefore a futile endeavor to try to elevate a race through education. It is certainly possible to educate individuals of a primitive race to a certain degree, determined by their genetic makeup; however, this elevation of the mind achieved through education, i.e., through environmental influences, is not hereditary.

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[2] "In order to enable every capable and hard-working German to attain higher education, and thus enter into leading positions, the state must ensure the thorough expansion of our entire system of public education. The curricula of all educational institutions must be adapted to the requirements of practical life; the concept of the state must be instilled from the very beginning of schooling (civics). We demand that children of poor parents who are particularly gifted intellectually be educated at the expense of the state, regardless of their parents' social status or occupation."

The question of the inheritance of acquired characteristics has long been the subject of heated debate, with the French naturalist Lamarck seeking to explain the upward development of species through the inheritance of acquired characteristics; Lamarck's first law states:

"In every animal that has not yet exceeded the limits of its development, the frequent or constant use of an organ gradually strengthens it, develops and enlarges it, giving it a power proportional to the duration of that use; constant disuse of an organ gradually weakens it, deteriorates it, and progressively diminishes its capabilities, finally causing it to disappear."

The second law then states:

“Everything that animals acquire or lose through the influence of the conditions to which they are exposed for a long time, and consequently through the influence of the prevailing use or constant disuse of an organ, is inherited through reproduction, provided that the changes are common to both sexes or to those who produced these offspring.”

It is obvious that Lamarck's theory must be extremely welcome to those who, out of ideological considerations, deny hereditary and racial differences; it is easy to understand that Marxists and their Jewish leaders were enthusiastic supporters of Lamarckism - in Soviet Russia, teachers are actually forbidden to deny the inheritance of acquired characteristics.
It is not possible here to discuss the numerous alleged proofs of the inheritance of acquired characteristics and their scientific refutation - just one example will suffice to show how even seemingly very convincing evidence for the inheritance of acquired characteristics does not stand up to scientific scrutiny:
If a bean plant is placed in the most unfavorable environmental conditions possible, that is, if it is given so little food and water that it barely survives, then it will naturally develop poorly. Seeds from such a half-starved and dried-up plant will again develop into stunted plants, even if they are cared for in a way that is sufficient for other bean plants to grow well; it therefore appears as if the damage to the parent plant has been “inherited” by the offspring. However, this interpretation is incorrect - the poorly nourished parent plant produces only sparse, equally “poorly nourished” wrinkled little seeds. As is well known, the seeds contain nutrients for the young seedlings; these therefore receive a highly inadequate diet, especially in the early stages of their development, and thus become stunted plants again. The damaging environmental influences have thus had an aftereffect on the offspring. However, the fact that this is not actually a change in the genetic material, i.e., not “inheritance,” is evident from the fact that these aftereffects subside after a few generations when the triggering environmental damage is removed - already in the next generation, strong bean plants develop again.
These aftereffects must become more pronounced the longer a developing organism is dependent on nutrition from its environmentally damaged mother - if an expectant mother is in poor nutritional condition, whether due to constant hunger or a serious illness such as tuberculosis, her fetus will also receive inadequate nutrition, and if the newborn then comes into the world as a pronounced weakling, this is, just as in the bean example, an aftereffect and has nothing to do with heredity in the scientific sense.

Like every living being, humans are constantly under the formative influence of their environment. However, great caution must be exercised when assessing “secondary changes” in humans - if a group of young men who play sports have much stronger muscles than another group of young people who do not play sports, it is extremely tempting to simply attribute the different physical condition of the two groups to the effects of physical activity, i.e., environmental influences. Is this correct? We know that appearance is the result of heredity and living conditions; can we simply regard the different appearances of the two groups as a consequence of their different living conditions? No, because the two groups are almost certainly also different in terms of their genetic makeup - one group does not necessarily engage in sports because they are forced to, but because they have a natural inclination toward physical activity; the other group stays away from sports because they do not have this inclination, though they may have a much greater genetic predisposition toward mental activity - we therefore have genetically different comparison groups. This is in no way intended to downplay the beneficial and invigorating effects of sports; physical education is absolutely necessary, and it will always have a degree of success determined by the range of responses determined by genetics.

The goal of any form of education must be to bring the good predispositions inherent in the genetic makeup to their highest development by creating the most favorable living conditions possible. However, the limits of educational possibilities are immutably set by heredity - where the resonant string is missing in the hereditary makeup, even the most gifted artist cannot conjure up a sound; no educational factor can ever have an effect.

The extent to which heredity determines a person's fate is shown with shocking clarity by the failures of educational attempts on welfare pupils, as demonstrated by the surveys conducted by Johannes Lange on criminal twins: twins can be conceived when two eggs are fertilized simultaneously by two different sperm cells, in which case the twins have different genetic makeup; these are referred to as fraternal or unequal twins. Twins can be also created when an egg fertilized by a sperm cell splits into two halves at a very early stage of development, each of which develops into a living being; in this case, the twins have the same genetic makeup and are referred to as identical or monozygotic twins.

Twin research has developed into a separate science because of the exceptionally favorable opportunity it offers to study the interplay between the two factors of “environment and heredity.” Johannes Lange was able to record thirteen identical criminal twins - in ten cases, both twins were almost the same age and had committed crimes that were very similar. In contrast, among 17 fraternal twins, who are no more similar in their genetic makeup than siblings in general, only two cases involved both partners being criminal; in these cases, they had to answer to the court for crimes that were completely different in nature. This is just one of many examples where identical twins, some of whom had very different life circumstances, had identical life stories down to the smallest detail - “Race is destiny.”

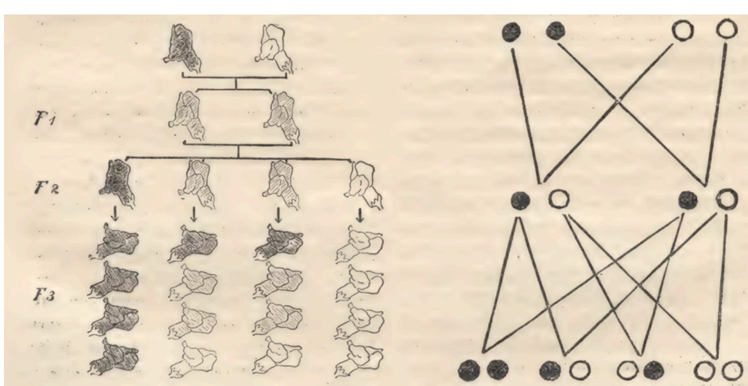

Figure One

This makes our moral duty to influence the race, the blood heritage of future generations, all the more glorious and important - the blood heritage of every human being is composed in equal parts of the genetic material of both parents. The distribution of genetic material from parents to offspring is by no means entirely arbitrary, but follows very specific laws; the credit for being the first to discover and explain these laws goes, as is well known, to the Augustinian priest Johann Mendel, whose monastic name was Gregor (1822-1884). This brings us to the field of genetics in the narrower sense - in the 1860s, Mendel conducted experiments in the monastery garden in Brno on the crossing of pea varieties that differed from each other in one or more characteristics of their appearance. The fundamental results, published in 1866, were ignored; it was not until 1900 that three researchers, the German Correns, the Austrian Tschermak, and the Dutchman de Vries, independently rediscovered the laws of inheritance; only then did Mendel's discoveries receive the recognition they deserved.

If two snapdragons, one with red flowers and the other with ivory-white flowers—i.e., two different races that differ from each other in one characteristic—are crossed, all the offspring will bloom pink. (See Figure One: dark shading = red, light shading = pink.) They occupy a middle position between the two characteristics of their parents - this is Mendel's first law, the law of uniformity. If plants from this first offspring or filial generation (F1) – i.e., pink-flowering snapdragons – are crossed with each other, three different flower colors appear in the offspring, i.e., in the second offspring generation (F2): red, pale red or pink, and ivory white flowers. A splitting occurs - this is Mendel's second law, the law of segregation. If a larger number of this F2 generation is counted, it can be seen that 25 percent of this generation has red flowers, 50 percent pink and 25 percent ivory white; the ratio is therefore 1:2:1. Only half of this F2 generation has the same flower color as its parents; a quarter has the red flower color of one grandparent, and a quarter has the ivory white color of the other grandparent. If the red snapdragons of the F2 generation are further bred, all descendants will always bloom red for any number of generations, just as only ivory white flowering plants will appear among the descendants of the ivory white flowering snapdragons. When crossed among themselves, the pink-flowering snapdragons of the F2 generation repeatedly split into 1/4 red, 2/4 pink, and 1/4 ivory white; a red-flowering snapdragon of the F3 generation originating from pink-flowering parents therefore has a flower color that was not seen in its parents, but which is present in the siblings of the parents; the same applies to the ivory-white-flowering snapdragon of the F3 generation originating from pink-flowering parents. The well-known phenomenon that a person is more similar in some physical or mental-emotional traits to one of their grandparents or a sibling of their parents than to their own parents finds its fundamental model in the simple cross-breeding experiment with snapdragons.

How can these peculiar phenomena in the flower color of snapdragons be explained? In sexual reproduction, an offspring is produced from the union of a paternal and a maternal sex cell; the sex cells contain the genetic material in their nucleus, including the predisposition for flower color. If a male sex cell with the predisposition for the red flower color combines with a female sex cell with the predisposition for the red flower color, the new plant resulting from the union receives the same genetic predisposition from both parents; it is homozygous with regard to the predisposition for the red flower color and will itself pass on the predisposition for red flower colors with its sex cells. Similarly, an ivory-white flowering snapdragon has a double gene—from both its father and mother—for ivory-white flower colors and passes this gene on to its offspring. If, on the other hand, a female gamete with the trait for ivory white flowers is fertilized by a male gamete with the trait for red flowers, or vice versa, a female gamete with the trait for red flowers is fertilized by a male gamete with the trait for ivory white flowers (see Figure One, right), a mixture of two genetic masses that are unequal in terms of the trait for flower color occurs, and the offspring are heterozygous, unequal, or hybrid, and bloom pink. In the genetic material of the hybrid, the genetic traits for flower color remain separate; when the hybrid reaches gamete formation, a special process of nuclear division produces two different types of gametes: those with the genetic predisposition to bloom red and those with the genetic predisposition to bloom ivory white. If pink-flowering snapdragons of the F1 generation are crossed with each other, there are four different possibilities for the gametes to combine.

1. Male gamete with the trait for red flowers + female gamete with the trait for red flowers = homozygous red-flowering plant.

2. Male gamete with the predisposition to bloom red + female gamete with the predisposition to bloom ivory white = heterozygous pink-flowering plant.

3. Male gamete with the predisposition to bloom ivory white + female gamete with the predisposition to bloom red = heterozygous pink-flowering plant.

4. Male gamete with the predisposition to bloom ivory white + female gamete with the predisposition to bloom ivory white = heterozygous ivory white flowering plant.

Since the pink-flowering hybrids, or bastards, produce gametes with the predisposition to bloom red and gametes with the predisposition to bloom ivory white in equal numbers, each of the four combinations has the same probability; therefore, in the F2 generation, 25 percent of the plants must be red-flowering, 50 percent pink-flowering, and 25 percent ivory-white flowering.
It has long been customary in genetics to represent genetic traits with letters (more recently, genetics has been using abbreviations of Latin names for the traits). If we assign F to the red-flowering trait and f to the ivory-white flowering trait, then a red-flowering plant has the formula FF—it receives the red-flowering trait twice—the ivory-white flowering plant has ff, and the pink flowering plant has the formula Ff. The sex cells of a homozygous red-flowering plant carry the symbol F, while the sex cells of the ivory-white flowering plant carry the symbol f; half of the sex cells of the pink-flowering plant are F, while the other half are f. Based on these symbols, the four possible crosses listed above would be represented as follows:

F + F = FF
F + f = Ff
f + F = fF
f + f = ff

If, as in the crossbreeding example described above between red-flowering and ivory-white-flowering snapdragons, the hybrid has a middle position between the characteristics of the parents; this is referred to as intermediate inheritance. However, the result of crossbreeding can also be different - for example, if a red-flowering snapdragon is crossed with a pure white (not ivory white) flowering snapdragon, the flowers of the hybrid Ff will be pure red, just like one of the parents; in this case, the predisposition to red flowering is stronger than the predisposition to white flowering; it masks the predisposition to white flowering. The hybrid Ff is indistinguishable in appearance from the homozygous parent FF; in this case, it is therefore not possible to tell from the appearance of a red-flowering plant whether it is homozygous or heterozygous; only through further breeding can it be proven that the hybrid also has the trait for white flowering, which is masked. Half of its gametes transmit the trait for red flowering, and half transmit the trait for white flowering; if we cross two red-flowering hybrids Ff with each other, there are four possible combinations:

F + F = FF homozygous red-flowering,
F + f = Ff heterozygous red-flowering,
f + F = fF heterozygous red-flowering,
f + f = ff homozygous white-flowering.

A quarter of the offspring in the F2 generation has therefore inherited a trait from its parents that was not visible in the parents' appearance, but which was probably displayed by one of the grandparents. The numerical ratio in the F2 generation: 3 (red) : 1 (white) is only an apparent contradiction to the numerical ratio of 1:2:1 obtained in the first crossbreeding experiment, because the hybrid is not outwardly recognizable as such due to the covering (or dominant) power of the red-flowering trait; only in its offspring does it become apparent that it also had the masked (or recessive) trait for white flowering in its genetic makeup - in contrast to intermediate inheritance, this is referred to as masking, striking, or dominant inheritance.

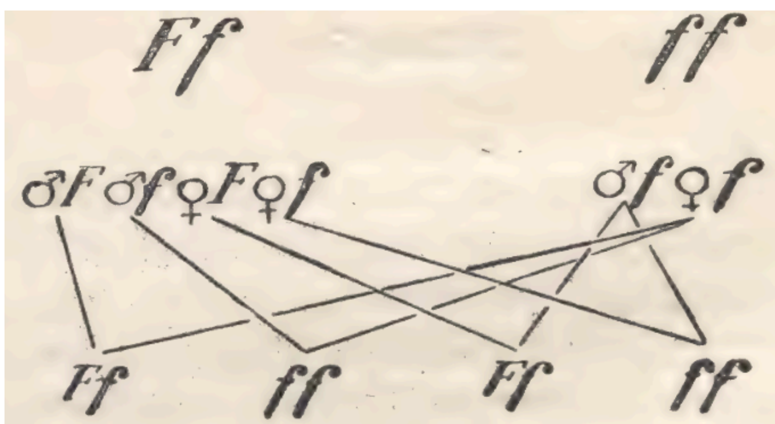

Figure Two

In previous crossbreeding experiments, either two homozygous organisms, FF + ff, or two heterozygous organisms, Ff + Ff, were paired. There is another possibility for crossing, namely the crossing between a heterozygous and a homozygous organism - for example, the crossing between heterozygous red-flowering snapdragons Ff and homozygous white-flowering ff. The result of such a crossing can be easily predicted by considering the possible combinations of gametes. The heterozygous red-flowering plants Ff form two types of male (♂) and female (♀) gametes: first, those with the F gene, and second, those with the f gene (see Figure Two). The homozygous white-flowering snapdragons ff produce only male and female gametes with the trait f. There are four possible combinations during pollination:

1. male F + female f = Ff
2. male f + female f = ff
3. female F + male f = Ff
4. female f + male f = ff

When an heterozygous organism is crossed with a homozygous organism, in a so-called backcross, 50 percent of the offspring will be heterozygous with red flowers, and 50 percent will be homozygous with white flowers.

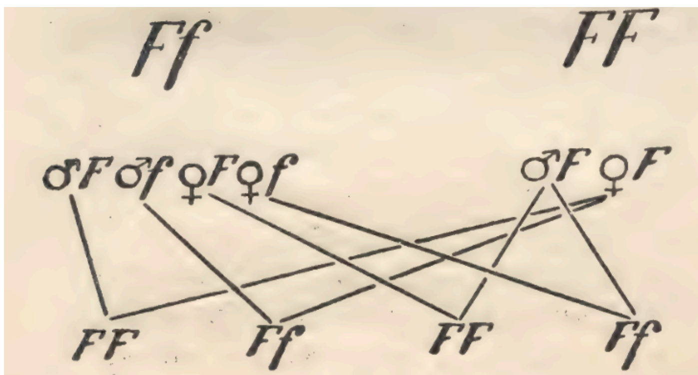

Figure Three

Of course, this does not necessarily have to be readily apparent in their appearance - for example, if a homozygous red-flowering snapdragon FF is crossed with a heterozygous red-flowering snapdragon Ff (see Figure Three), the result is naturally 50 percent heterozygous and 50 percent homozygous offspring:

1. male F + female F = FF
2. male f + female F = Ff
3. female F + male F = FF
4. female f + male F = Ff

However, all offspring bloom uniformly red, and the heterozygous red-flowering ones do not reveal the hidden trait for white flowering in their appearance.

The laws of inheritance of trait differences discovered by Mendel are valid as natural laws for all living beings, including humans; however, they are much less easy to prove conclusively in the human race. There are various reasons for this:
Firstly, we have seen that appearance alone does not allow us to draw any binding conclusions about genetic makeup—we cannot easily distinguish the heterozygous red-flowering snapdragon from the

homozygous red-flowering one. If a geneticist wants to know whether a particular snapdragon is homozygous or heterozygous, crossing it with a pure white-flowering snapdragon will provide the answer the following year - if it was homozygous, all the offspring (heterozygous) will be red; if it was heterozygous, half of the offspring will be white (backcrossing!). The breeder can therefore learn about genetic material and inheritance because he has pure breeds at his disposal, because he can crossbreed at will, because the results of the crossbreeding become apparent relatively quickly due to the short generation time of the test plants or animals, and because the large number of offspring allows for an assessment of the numerical ratios. It goes without saying how unfavorable the conditions are for the human race in comparison; it would go too far to go into the methods devised to remedy some of these shortcomings.

Secondly, most physical characteristics and, even more so, mental and emotional characteristics in humans do not depend on a single genetic factor, as in the snapdragon experiments described above, but on several genetic factors.

Despite these difficulties, however, human genetics has led to very remarkable and, for the most part, thoroughly verified results.

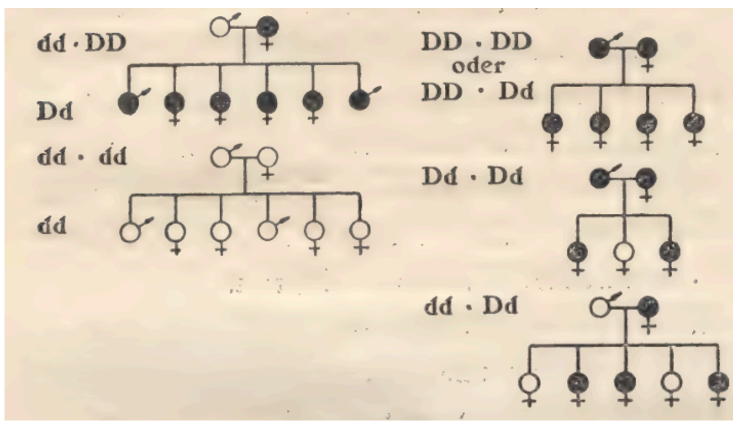

Figure Four
Inheritance of the Color of the Iris

Dark eyes are dominant (D)
Light eyes are recessive (d)
A person with dark eyes can be homozygous (DD)
or heterozygous (Dd).
A light-eyed individual must be homozygous (dd).

Pedigrees from Dr. Walter Scheidt: "Rassenkunde"

A relatively simple example of dominant inheritance in humans is eye color; more precisely, the color of the iris. Dark eyes are dominant, behaving in the same way as the red flower color in the second snapdragon experiment; light eyes are recessive, corresponding to the pure white flower color of the snapdragon. The trait "eye color" is—at least for the most part—dependent on a genetic trait - if we designate the dominant gene for dark eyes as D and the recessive gene for light eyes as d, then a person with dark eyes can be either DD, i.e., homozygous dark-eyed, or Dd, i.e., heterozygous dark-eyed, just as a red snapdragon from our second experiment can be either FF or Ff. A light-eyed person must be dd, i.e., homozygous recessive, just as a pure white snapdragon must be ff. There are a total of six different crossing possibilities:

1. DD + DD = DD, i.e., if both parents are homozygous dark-eyed, all offspring will also be homozygous dark-eyed.
2. DD + dd = Dd, which means that if one parent is homozygous dark-eyed and the other is homozygous light-eyed, then all children will be heterozygous dark-eyed.
3. dd + dd = dd, which means that the children of light-eyed parents will also be light-eyed.
4. DD + Dd = 50% DD, 50% Dd, i.e. if one parent is homozygous and the other is heterozygous dark-eyed, then all children will be dark-eyed, but half will be heterozygous (backcross!).
5. Dd + Dd = 25% DD, 50% Dd, 25% dd, which means that if both parents are heterozygous dark-eyed, then 3/4 of the children will also be dark-eyed (of these, however, only 1/3 will be homozygous and 2/3 will be heterozygous) and 1/4 of the children will be light-eyed; children of dark-eyed parents can therefore inherit light eye color, just as in the second crossbreeding example of snapdragons, where a quarter of the F2 generation inherits the trait for pure white flower color from the red-flowering parents.
6. Dd + dd = 50% Dd, 50% dd, which means that if one parent is heterozygous dark-eyed and the other parent is light-eyed, then, in genetic terms, there is a backcross with the result that half of the children (heterozygous) are dark-eyed and the other half are light-eyed (see pedigree charts in Figure Four).

It is important to warn against a widespread misunderstanding here - when we say that among the children of two heterozygous dark-eyed parents, 25% are DD, 50% are Dd, and 25% are dd, this should not be understood to mean that the first, second, and third child must necessarily have dark eyes and the fourth must necessarily have light eyes; as already briefly indicated, the ratios are the result of counting a large number of offspring. For example, if we had 100 married couples, all of whom—both husband and wife—have unequal dark eyes, and if we had a total of 400 children from these 100 married couples to examine, then probably almost exactly 300 children would have dark eyes and 100 children would have light eyes. We can only say this much: if both parents are heterozygous dark-eyed, then for each child born of this marriage, there is a one-quarter probability that it will be light-eyed and a three-quarter probability that it will be dark-eyed. Of course, given the small number of offspring a married couple may have, it is entirely possible that among six children of two parents with unequal dark eyes, none, or perhaps three or four, will have light eyes; this applies not only to the inheritance of light eyes, but also to all genetic traits that are passed on through dominant inheritance.
It is very important to note that a number of hereditary diseases are inherited in the same way as light eyes, i.e., in a dominant or recessive manner; these include, for example, hereditary deaf-mutism. This means that a person who is hereditarily deaf-mute must have received the predisposition to this condition from both parents, must possess it twice in their genetic makeup, and must be homozygous. If we denote this pathological genetic predisposition as g, then the genetic formula for a person who is deaf and mute is gg; we denote the genetic predisposition for normal, healthy hearing as G (dominant!). A healthy person can be either GG, i.e., homozygous, or Gg, i.e., heterozygous; in the latter case, half of their offspring will probably inherit the pathological trait g. If two partners with the inheritance formula Gg, i.e., two who appear healthy and have normal hearing, marry, then according to the above crossbreeding example No. 5, 1/4 of the children will have the combination gg, meaning that 25 percent of the children will be deaf and

dumb. More correctly: for each child from a Gg + Gg marriage, there is a 25 percent probability that it will have the recessive genetic disorder in homozygous form; the initially surprising phenomenon that a child can “inherit” deaf-mutism from its “healthy” parents is therefore easy to explain.

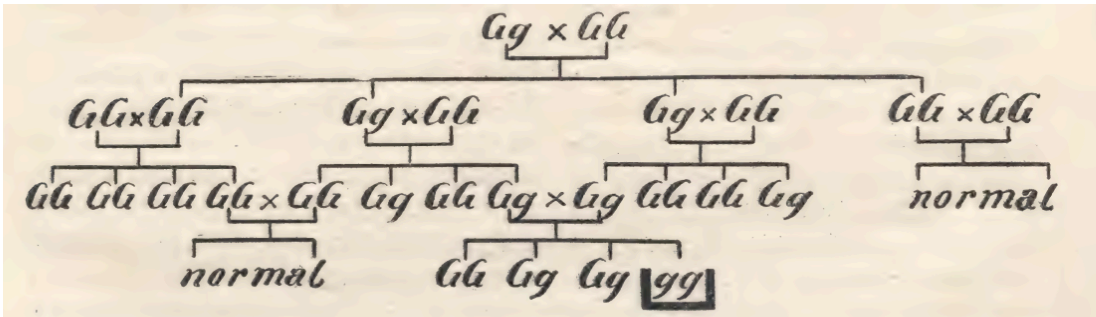

Figure Five

Experience shows that such recessive genetic disorders occur with a preference in marriages between blood relatives; this used to lead to the idea that consanguineous marriages caused pathological hereditary disorders. This assumption is incorrect - the frequent occurrence of recessive hereditary disorders in consanguineous marriages can be explained in another way: let us assume that in a marriage, one partner has a recessive genetic disorder, while the other is genetically healthy (see Figure Five). As expected, two of the four children will be GG and two will be Gg, i.e., they will again be genetically burdened. All four are to marry genetically healthy GG partners. The marriages of the two GG children to genetically healthy partners (first and fourth children in the family tree) can, of course, only produce unburdened GG children; the other two marriages, Gg + GG, are, scientifically speaking, backcrosses with a result of 50 percent GG and 50 percent Gg. If the children of two Gg siblings marry each other, there is a 50 percent probability that two Gg individuals will meet; in this hypothetical case, the cousins have their (masked) pathological genetic trait from their one common Gg grandparent. In this cousin marriage, there is a 25 percent probability for each child that the hereditary disease will manifest itself; among four children, there is therefore a probability that one will be genetically diseased, gg. The danger of consanguineous marriage is that the probability of two recessive carriers meeting is much greater than if the two spouses are not related by blood - of course, a desirable trait can also be more easily “bred out” in consanguineous marriages if it follows a recessive pattern of inheritance.

While a recessive hereditary disease only manifests itself if a person has the gene twice, i.e., from both parents, dominant or recessive hereditary diseases manifest themselves even if a person only has the gene once in their genetic makeup, i.e., if they are heterozygous with regard to the disease gene. The letter K (sick) is used for a dominant disease gene, and the letter k for the corresponding “normal” or healthy gene; anyone with the genetic formula Kk is actually sick, just as anyone who has the gene for dark eyes in their genetic makeup, even if they are heterozygous, also has dark eyes; dominant genetic traits are therefore much easier to identify.

If pathological genetic traits were primarily used to explain the laws of inheritance in humans, this is because they are the easiest to trace, since, as already mentioned, hereditary diseases are largely based on a genetic trait. Of course, this should not give the impression that only pathological traits are inherited -

favorable traits are also inherited, of course. In the Bach family of musicians, a high level of musical talent was evident across five generations of the male line; of Johann Sebastian Bach's eleven sons, five were important musicians, while in the Bernoulli family, no fewer than eight men achieved fame as highly significant mathematicians.

The Darwin-Galton family, who were cousins, included a whole series of highly gifted members: musical talent, mathematical talent, high intellectual ability, etc. – these are characteristics that cannot be attributed to a single genetic trait, but rather to a whole series of genetic traits; this naturally makes it extremely difficult to prove the exact inheritance pattern.

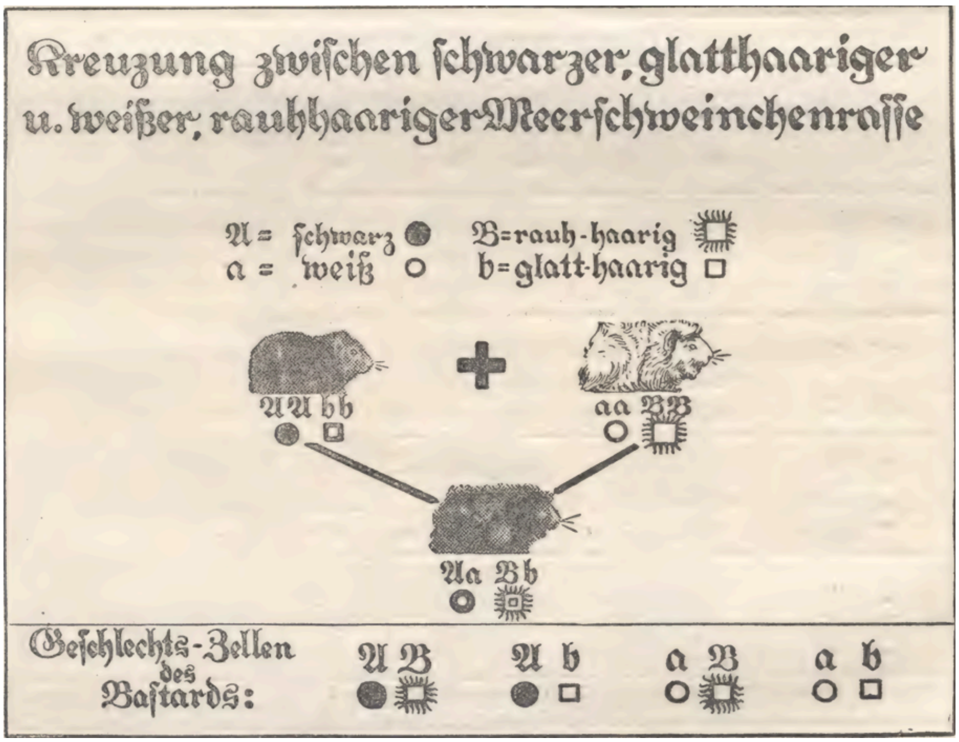

Figure Six
Cross Between Black Smooth-Haired and White Rough-Haired Guinea Pig Breeds

A = black
a = white
B = rough-haired
b = smooth-haired

Sex cells of the bastard:

It is necessary that we at least deal with the question of how heredity works when the initial individuals differ in more than one characteristic, or, when their genetic material differs in more than one genetic trait. This question has also already been addressed by Gregor Mendel and a solution has been found:

One of the best-known of the numerous "dihybrid" crossing experiments is the crossing between a smooth-haired black guinea pig and a rough-haired white guinea pig (Figure Six). Let the symbol A stand for black, a for white, B for rough-haired, and b for smooth-haired; the choice of capital letters already indicates that black is dominant over white, and rough-haired is dominant over smooth-haired. A homozygous black, smooth-haired guinea pig has the formula AAbb, a homozygous white rough-haired guinea pig has the genetic formula aaBB. The cross between the two animals will only produce black, rough-haired offspring, since black and rough-haired are dominant; of course, the offspring are heterozygous, meaning that they also have the "masked" trait for white and smooth-haired in their genetic makeup. These AaBb hybrids produce four different types of gametes:

1. with the trait for black, rough-haired ... AB
2. with the trait for black, smooth-haired... Ab
3. with the trait for white, rough-haired... aB
4. with the trait for white, smooth-haired... ab

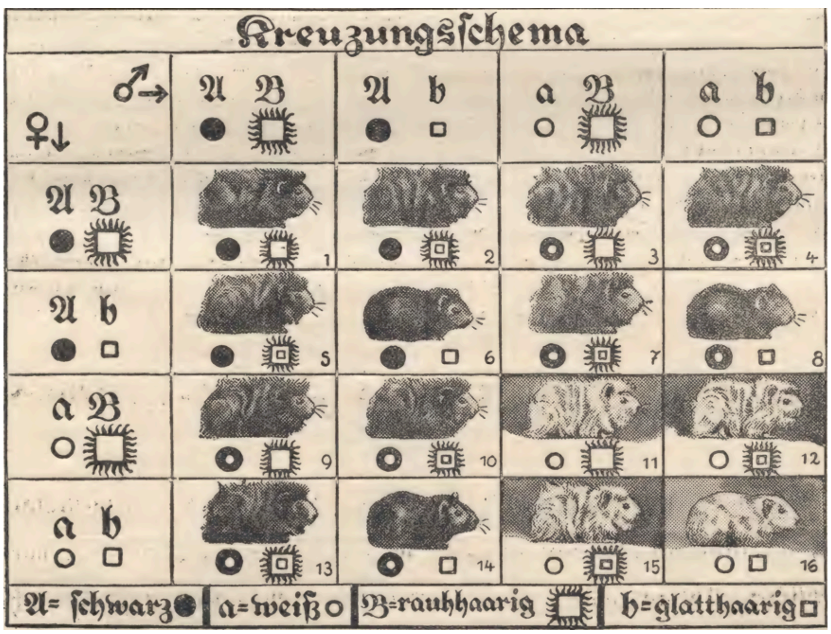

Figure Seven
Crossbreeding Diagram

If hybrids AaBb are crossed with each other (see Figure Seven), there are 16 possible combinations of gametes. The most important result of such a crossbreeding experiment is that – naturally only detectable with a sufficiently large number of offspring – the two traits for hair color and hair texture are inherited completely independently of each other - this is Mendel's third law, the law of independence. Research over the last quarter of a century has found very specific exceptions to this law, which cannot be discussed in this introduction; the newly obtained results have not changed the fundamental validity of Mendel's third law.

Physical characteristics and mental and emotional traits in humans are also inherited independently of each other; it is therefore fundamentally wrong to draw unqualified conclusions about a person's character based on their physical appearance; this would only be possible in the case of purebred humans, but there are practically no truly purebred humans in Central Europe, which is very racially mixed. Blood from different races flows in every human being's veins - therefore, a physically Nordic, slim, tall, blond person does not necessarily have Nordic mental and spiritual characteristics, and it is also entirely possible that a Nordic soul resides in a short, stocky, round-headed body. However, if we have a group of 100 physically Nordic people and, alongside them, 100 physically East Asian people, it is more likely that Nordic souls will be found in the first group than in the second.

It has been shown that if offspring do not completely resemble their parents but exhibit differences, this can be attributed firstly to environmental influences—we refer to these as secondary changes—and secondly to the fact that the offspring are a mixture of the parents' genetically different traits, i.e., there is a mixture of changes; finally, a third possibility must be briefly considered, namely that the genetic material itself undergoes a change, a genetic change; a genetic change or mutation must be assumed when a new, previously unobserved trait appears that proves to be hereditary in further breeding; hereditary diseases are therefore also genetic changes.
Although a great deal of scientific material has been compiled in recent years, we still know relatively little about the cause of hereditary changes. However, one thing is of practical importance: we know of a number of environmental influences which – in some cases without any visible effect on the appearance itself – are highly likely to cause a hereditary change, or germ damage. In addition to radiation (X-rays), these primarily include alcohol abuse; the fact that alcohol acts as a germ toxin in animals has been proven by Agnes Bluhm's extensive research on mice. There are no fundamental scientific objections to transferring the results from animal experiments to humans; however, a number of other observations and experiences also speak so strongly that there can be no serious doubt about the germ-damaging effect of alcohol abuse in humans.

Anyone who is aware of their high obligation as the temporary responsible bearer of their genetic material in the long line of generations; anyone who feels themselves to be a bearer of National Socialism, a soldier of our Führer, will know how to protect their genetic material from damage for the sake of their people and their fatherland.

"It is therefore probable that the mixing of races, which gradually erases their characteristics, is not beneficial to the human race, despite all the supposed philanthropy."

- Immanuel Kant