

then the individual, the sum of cells, cannot vary from his cellular type; and, finally, they insisted if all the cells in the individual have been derived through the generations from cells of the same type, then the original cells, at the beginning of things, must have been the products of a special and miraculous creative act. Unfortunately, however, for this specious logic, Virchow taught, in effect, that like cells beget like cells, only, however, under like circumstances, and that, as the circumstances vary, so does the cell type vary. This is, indeed, the point of departure from the standard of health, the very beginning of pathological phenomena. As a matter of fact, Virchow simply declined to discuss the origin of species until sufficient evidence to justify him in doing so could be derived from a careful search of the tissues. He recognized the mutability of the cells, and realizing, logically, that variations in type must begin in these vital units, he, without denying the truthfulness, or affirming the falsity of Darwin's hypothesis, simply awaited the demonstration of the actual changes within the cell. It is an interesting fact, and one bearing testimony to Virchow's scientific acumen, that this very variation was reduced to a physical demonstration in 1900 by Professor Guyer, of the University of Cincinnati, whose investigations are recorded in his valuable contribution on "Hybridism and the Germ-Cell." It is also of striking interest, at this time, and one bearing testimony to the reliability of Virchow's deduction, not only that these observations of Guyer's, but that Mendel's Law promulgated through an obscure periodical at Brunn, Austria, in 1865, seemed to cover the entire point. This Law of Mendel's or, as I believe we should call it, the Mendel Guyer Law, is in effect that, as the result of definite and demonstrable changes in the germ cell, the second and later generations of a hybrid possesses every possible combination of apparent characters, and that each combination appears in a definite proportion of the individuals, the whole reduced to the terms of a definite equation. This law, revealed by observations in both the animal and vegetable world, seems to be one of general applicability, and one that is calculated to invest the conclusions of Virchow with an increased value.

The next point at which Virchow was brought in contact with the general problem of anthropology, or more particularly that of ethnology, grew out of his studies of cretinism and of the causes of variations in the growth of the skull. It was precisely this study of the pathologic phases of craniology that enabled him to detect morbid changes in the celebrated Neanderthal skull, which, with its protruding supraorbital ridges, its low forehead, and its small cranial capacity, even the scientific world was too disposed to accept as the normal index of