

upon *a priori* grounds one would hardly expect the organism or any part of it to be born old, and yet senility of tissue from extinction of function would seem unquestionably by far the most potent, if not the only proved predisposing cause of the carcinomatous process. The uterus undergoing involution, the atrophying mamma, the puckered lip wrinkling over the toothless gum, have all either temporarily or permanently outlived their usefulness, become supernumeraries, pensioners on the body at large, and these are the breeding-grounds of 70 per cent. of all cases of carcinoma.

When we attempt to approach the "white plague of the North" from this standpoint, the problem becomes a well-nigh hopelessly speculative one, on account of the vastness of the field and the utter inadequacy of definite information obtainable. Estimates are legion, but figures are few, and so nearly equally distributed, from 10 per cent. to 70 per cent. in single series, as to fail to inspire much confidence in their reliability. I have written to the medical directors of some four or five of our leading life insurance companies, asking for references to data bearing upon the question. Their replies have been most prompt and courteous, but all practically to the same effect; collections of cases are so few and on so microscopic a scale that, as one of them frankly says, "We have almost ceased to regard statistics as of practical value in the selection of life risks." Text-books and monographs on pulmonary tuberculosis usually carefully avoid statistical statements, and when the rule is relaxed it is principally to ring the changes on the fossil figures of Louis, Lebert, Barthez, *et al.* My researches have been far from exhaustive, but the results have been most disproportionately and distressingly meager. And yet, so far as they go, and biased as many of them evidently are, they fall far short of supporting the commonly accepted view of the question. There is probably no disease that both the profession and the laity are more confidently and unanimously agreed in ascribing largely to hereditary influence than "consumption." Our poor starveling, flat-chested patient assures us that she knows there can't be anything "wrong with her lungs," because "there is no consumption in the family." Of six intelligent and experienced practitioners, taken at random, approached on this subject, four gave it as their opinion that from 70 per cent. to 90 per cent. of all of their cases were traceable chiefly to heredity, while the other two placed the proportion at 40 per cent. But before giving the actual figures obtained, it may perhaps be as well to briefly consider their probable value on general principles. In the first place, they are likely to be fairly exhaustive and complete as far as they go. The patients are usually under observation for considerable periods of time; are not only not in any way incapacitated by their

condition for either remembering or relating the facts of their history, but are above the average in intelligence and conscientiousness. "The good die young," usually of pulmonary tuberculosis, and it is almost a question whether we are not entitled to regard conscientiousness as one of the leading morbid symptoms, so well-nigh invariably is it found in conjunction with pulmonary tuberculosis. There is but little motive for concealment, so that the percentages probably represent almost the total of those having such flaws in their family history in each group investigated. On the other hand, in no group of morbid histories is it more imperative ever to keep in mind that *post hoc* is by no manner of means *propter hoc*. A very brief mathematical statement of the case will illustrate this at once. According to our mortality-rates one seventh of our population ultimately dies of pulmonary tuberculosis, *ergo* any individual who could recall the histories of seven deceased ancestors or relatives would have the right, if we may use the expression, by the law of averages, to one ancestor dead of pulmonary tuberculosis, without being under any peculiar suspicion of "consumptive taint." The smallest possible family group must consist of six members, two parents and four grandparents, but when the investigation is extended, as it frequently is, to brothers and sisters, uncles and aunts, it may include from ten to thirty members, among whom it would be strange if one or more had not fallen victims to this commonest cause of death. What wonder, then, if the enthusiast upon heredity—and most of those who prepare tables are enthusiasts—is able by perfectly legitimate means to make a most imposing display of facts that apparently support his theories to the letter. But what most seriously impairs the scientific value of these tables is the fact that in a considerable minority, if not in a majority of them, the fundamental term itself denotes not merely a morbid process, but the degree of that process—in other words, that "consumption," means not merely "tuberculous degeneration," but tuberculous degeneration sufficiently extensive to seriously threaten life, or even in the usage of some authorities "tuberculous degeneration ending in death." It is by no means uncommon to hear or read such expressions as: "Mr. A. was threatened with consumption in his early days," or "Mr. B. had all the symptoms of phthisis at one time," "*but he recovered.*" I think we are inclined to markedly underestimate the prevalence, and if I might use the expression, the naturalness of this simple reversion to the amoeboid state on the part of certain of our tissue-cells. Now that Von Ruck, Trudeau, and other modern therapeutists, are assuring us that from 60 per cent. to 80 per cent. of cases of pulmonary tuberculosis in the earlier stage are curable, and that pathologists are informing us that over 30 per cent. of bodies dead of disease other than