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Remarks Introductory to a Discussion on Nosography.

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DISCUSSION ON NOSOGRAPHY.

REMARKS INTRODUCTORY TO A DISCUSSION ON NOSOGRAPHY.

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My first duty is to make a preliminary report from the committee appointed at our fourth annual meeting to consider the views then presented by Dr. Gouley on the subject of nosography.

To elicit in briefest form the general sentiments of the committee, the following queries were put to vote:

1. Is there need of a classification of diseases?
2. Should such classification be based on anatomy?
3. Should the nomenclature convey accurately the true nature of morbid conditions?
4. Should the method of classifiation conform as far as possible with that adopted in botany and other branches of natural science?
5. Is it desirable to establish an international system of classification and nomenclature?

The answers received were unanimously in the affirmative, with but one qualification, relating to the practicability, in the present state of our knowledge, of classifying upon an anatomical basis the exanthemata and parasitic diseases, or of satisfactorily conveying the true nature of morbid conditions by a nomenclature in strict accordance with anatomy.

Other mental reservations and explanatory modifications of the monosyllabic reply will probably be set forth in the papers which we are about to hear.

In debating a theme so intricate and difficult that the most enlightened industry of many successive generations has failed to satisfy even contemporary demands, it should be borne in mind that, from a purely critical point of view, classification and nomenclature are, to a certain extent, separable. The latter is, of course, necessary for the recording and interpretation of the former, and should convey with etymological correctness the ideas which it is intended to express; but, this condition being reasonably fulfilled, attention should not be distracted from the spirit by too myopic pedantic peckings at the letter. For the very sake of intelligibility, it may sometimes be expedient to depart from rigid pedagogic precept. For example, the Greek prefixes, "hyper" and "hypo," are unfortunately so nearly similar that the retention of the final "o" in the latter before a compounding vowel, though contrary to strict scholarly rule, may be defensible in the interest of the student of medicine, who, without a preliminary classical education, might easily confound opposite meanings.

That there is need of a proper classification of diseases must be evident, not alone to those who are engaged in exploring the labyrinth of mortuary statistics, but to every teacher and practitioner of medicine. Under the present method—or, rather, lack of method—lesions and symptoms, causes and consequences, are so interchangeably confused that our literature is robbed of the greater part of its value, and the progress of scientific education sadly retarded.

Until our knowledge of pathology shall be complete, an ever diminishing portion of any system of classification must of necessity be provisional, and there will remain an excuse for the symptomatic naming of unknown pathic conditions, such as "myxoedema," "progressive muscular atrophy," "glycosuria," and others, as there was in the past for "falling sickness," "white swelling," "fungus haematodes," "lochial or puerperal fever," etc. But, just as in the botanist's collection, as soon as the real characters of such doubtful specimens are ascertained, they should be withdrawn

from their temporary pigeon-holes, labelled with fitting specific and generic titles, and ranged in their appropriate order.

In nosography, hitherto, it has been forgotten that classification should be founded on differences rather than on similarities, proceeding from the individual to the variety, species, genus, order, and so on successively, as these differences become wider and characteristic of larger groups. The separation of the largest groups in accordance with their agreements is a later affair. This plan is followed in all other departments of natural science, and notably in botany and zoölogy (of which latter our study of man is but a highly specialised branch), and not the least of its advantages is, that any changes rendered necessary by advancing knowledge affect only the terminal members of subordinate groups. Evidently, also, as regards nosography, instead of antagonizing science and practice in medicine, the very groundwork of a scheme so arranged lies in accurate clinical observation of sub-varieties and varieties, and each specialist contributes what is of essential importance to the whole, as the ichthyologist, ornithologist, or entomologist furnishes the basic data of zoölogical tabulation. A correct system of classification, therefore, will not only be an invaluable aid to the practitioner of medicine, but must primarily depend on his trained power of differentiation.

Touching the proposed principle of classification, it must be remembered that the word anatomy is employed in the work under discussion in its most modern and widest sense, as comprising the actions as well as the gross and microscopic structure and chemical constitution of the various component parts of the body, in both normal and abnormal conditions; and, in this sense, it is impossible to think of any alteration or derangement which could not find suitable place, or of any clinical phenomenon which could not be satisfactorily registered, if it were satisfactorily investigated. It fully covers what Hughlings Jackson has called the three-fold clinical problem of a disease,—"anatomical, seat of lesion; physiological, functional nature of lesion; pathological, dis-

order of the nutritive process,"[1]—and gives provisional room for what we must be content to term "functional" disorders until we shall have discovered the structural alterations which undoubtedly induce them. A sorry sort of empiricism would result from the general adoption of Moxon's dictum, that the physician "must know diseases, not as the zoölogist knows his species and his genera and his orders, by descriptions of comparative characters, but as the hunter knows his lions and tigers,"[2] and he who "goes a gunning" therapeutically with such superficial lore will be apt to waste snipe-shot on a rhinoceros or explosive bullets on a reed-bird. This lion-and-tiger kind of notation almost inevitably degenerates into mere symptomatology, and is responsible for the insoluble ambiguity of many of the death certificates which used to bewilder me while I was engaged in superintending their registration, and for the shallow diagnoses which too often discredit the profession and injure the patient. It has led to regarding a prominent effect or congeries of effects as a morbid entity, and afforded ground for the irrational dogma of Hahnemann, that "the totality of the symptoms constitutes the disease." It is a surprisingly common thing to find deaths ascribed to "paralysis," "dropsy," "coma," etc., and to hear of "general debility," "biliousness," and "complication of diseases," which are really coördinate results of a single cause. A patient whom I was asked to examine some months ago, suffering from mitral regurgitation and cardiac dilatation, has since then passed into the care of another diagnostician, who has shamed me by the brilliant discovery that she has both "asthma and dropsy," and similar instances are doubtless within the almost daily experience of many here present.

If it be admitted, as it is by most modern thinkers, that pathological phenomena are but perversions of physiological actions, "governed by the same fundamental laws which direct the normal processes of life" (Michael Foster,) then

[1] "On Diseases of the Brain," Brit. Med. Jour., July 14 and 21, 1888. Quoted by Jackson, loc. citat.

it is manifest that pathology is potentially classifiable by the same method as physiology, namely, on an anatomical basis; but it is equally manifest that our knowledge of both of these branches of biology must be perfect before our classification can be permanently established. The existence of symptomatic titles is a virtual confession of ignorance of the pathic conditions which they conceal, as is most remarkably exemplified in the terra incognita of mental diseases, where contending classifications are founded principally on single symptoms. "General paresis," "reasoning mania," "erotomania," "kleptomania," "folie circulaire," "agoraphobia," "aboulomania," etc., mean as little as possible, therein conforming with the amount of our information as to their pathogeny; such terms as "folie a deux" mean absolutely nothing; and "melancholia" means a superfluity of black bile, in survival of the ancient hypothesis of its aetiology. "Cholera" is the direct opposite of a flow of bile, and "struma" means building up, instead of breaking down.

Having gained, by observation and comparison, a sufficient knowledge of things to begin to classify them, the next step —since our knowledge can neither be recorded nor imparted to others save by words—is to name them; and it is a truism to assert that the name should convey our notion of the thing, epitomising, so to speak, its description. Furthermore, for the intercommunication of ideas between different nations, it is necessary that names be derived from universally intelligible roots; hence, Greek and Latin, the languages of scholarship throughout the world, must, for our purposes, supplant vernacular tongues.

When an artificially assumed meaning of a current word has been clearly defined and generally accepted, its retention in any branch of science is permissible if it be not grossly incorrect etymologically, as in the case of "geometry," which has long ceased to signify merely measurement of the earth; "electricity," which nowadays has little connection with amber; or "politics," whose ravages extend far beyond the philological bounds of a city. The very terms which desig-

nate the fundamental parts of our professional education are of this kind. Anatomy means a cutting asunder, and is etymologically as applicable to the trenchant disseverance of inorganic matter as to the structure of the animal organism. Physiology covers the entire range of natural phenomena, from astronomy to conchology, and, even in an arbitrarily restricted sense, was formerly construed as synonymous with physics. Chemistry refers strictly to liquid juices. Surgery is an abbreviation of "cheirurgia," and as pertinent to the manual labor of the blacksmith or hod-carrier as to the work of Astley Cooper, or Dupuytren, or Valentine Mott. To cavil at such time-sanctioned technics would be rank hypercriticism.

Many of the names used in pathology, however, are misnomers so monstrous, that, while possibly pardonable in the past as cloaks for ignorance, later research demands their retirement; others never had a valid apology for their existence. "Rhachitis," manifested in the long bones and internal organs, means inflammation of the vertebral column; "gout" means a drop, and is only suggestive of the occurrence of the malady in persons who are in the habit of "taking a drop too much;" "rheumatism" implies a watery discharge; "croupous" signifies "crying out," and "catarrhal," "pouring down," rendering their adjective connection with pneumonia ridiculously inapt; and, to cap the climax of absurdity, we frequently read of "hysteria in the male" and "gonorrhoea in the female." Baseless imaginings of remote similitudes to lower animals or to plants have encumbered us with a farrago of nonsensical appellations, such as "ranula," a little frog; "lupus," a wolf; "cancer," a crab; "scrofula," pertaining to a sow; "sycosis," fig-like; "molluscum," primarily from "mollis," soft, and mediately from a so-miscalled excrescence on the maple; "framboesia," from the raspberry; "urticaria," from the nettle; and, with consistent inconsistency, sundry sorts of tumors, either sessile or with a solitary pedicle, are congregated under the title "polypus," connotating a many-footed thing.

Then, to make confusion worse confounded in the overtaxed memory of the novice, and to discomfort oftentimes the older practitioner, we have a multitude of personal names irrelevantly attached to diseases, or even to single symptoms of disease. "Paralysis agitans" is indefinite enough, but to dub it "Parkinson's disease" is adding insult to injury. "Bell's palsy," "Duchenne's paralysis," "Landry's paralysis," are unmeaning sacrifices of pathology at the shrines of uncanonised saints, who surely would, if they could, spurn the offerings. "Dupuytren's contracture" crippled many a hand before his day; and it requires some mnemonic effort to recollect that "Dupuytren's fracture" is only an exaggeration of "Pott's fracture;" that this fracture is a totally different thing from "Pott's disease;" and that neither Pott nor Colles had any passive or active proprietary interest in the solutions of continuity which bear their respective names. How many of us are likely long to remember that "Weil's disease" is a simulacrum of "abortive typhoid fever;" that "Friedreich's disease" is a phase of locomotor ataxia, without ocular or neuralgic accompaniments; or that "Kaposi's disease" is an alias for what Hebra christened "xeroderma"? It is easier to fancy than to depict the state of mind of a student when he hears of a patient with a Naegele pelvis, Cheyne-Stokes respiration, or an Argyll-Robertson pupil, or is asked whether, in a case of suspected Menière's disease, he would try Valsalva's or Politzer's method.

With such a preposterous and perplexing jargon as has been partly sketched,—with Germans writing of "Basedow's disease," and Britons of "Graves's disease;" "carbuncle," a little Latin coal, and "anthrax," a great Greek one, both applied to a local inflammation of the corium, and the latter name, or its French translation, "charbon," assigned with equal inaccuracy to the "splenic fever" of cattle (wherewith the spleen has no causative connection), and to its inoculated effects in man; "struma," indicating in one place an enlargement of the thyreoid body; in another, lymphadenitis; in a third, tuberculosis; and in a fourth, no one knows what;

numerous mobid malefactors roaming about Europe, each with as many pseudonyms as a veteran fugitive from justice,—it is quite time to ask if an endeavor should not be made to revise our incongruities and to secure international concurrence in giving to every known thing a name which shall everywhere intelligibly express the same notion. The task is a cumulative one, involving long labor, close study, and keen debate in many lands; but the sooner it is begun the nearer will be its accomplishment; for while it embodies present knowledge, it must facilitate farther learning.

Of the precise position to be assigned to microbia in relation to disease, it is not possible at present to speak with certainty; but there is a growing opinion, supported by observation and experiment, that their intrinsic potency of evil has been overrated. The majority of the numerous varieties which have been carefully studied apparently exert a beneficent power in destroying refuse organic matter, and if an universal "germicide" could be effectually employed the human race would probably be exterminated by its own waste-products.

A few infective diseases are unquestionably associated with the presence of peculiar micro-organisms; others, from the simple analogy of their infectiveness, are presumed to have similar relations, but in these, hitherto, microscopists have either found no "microbes" at all, or else too many, and have quarrelled as to which among several cocci and bacilli should bear the special pathogenic blame. Microphytes, indistinguishable from each other morphologically, have been discerned in both health and disease, until at last the microscope has been almost set aside, and, as in the examples of the "comma-shaped" spirilla and sundry micrococci, specific definitions are predicated on assumed physiological actions alone, in as direct violation of every principle of classification as it would be to erect flatulent dyspeptics and diabetic patients into separate species of the genus homo; although cautious bacteriologists have admitted "that changes in the nutrient medium may have some effect on the form and size of the (protophytic) cells, on their mode of multiplication,

and on their physiological or fermentive properties," and that, to induce disease, the viciously disposed intruder "must find within the body, and in proper combination, all the conditions necessary for its growth and multiplication" (Ziegler), thus tacitly imputing some morbific influence preceding bacterial invasion. All individuals are not equally susceptible to infection, as they should be if certain specific micro-organisms were the verae causae of disease and capable of disorganising previously healthy tissues;—the field mouse and the domestic mouse reciprocally resist each other's so-called septicaemic schizophytes; one animal falls easy prey to an inoculation which another of the same genus absorbs with impunity; while, on the other hand, the same micro-organism is credited with producing different morbid effects in animals of different genera. In laboratory experiments it has been shown that the same ferment may evolve different products, or various ferments the same product, according to their environment; and from a clinical point of view it has seemed to many acute observers that several contagia may arise from the exaggeration of common putrefactive processes —a belief fortified to some extent by the "intensification" or "attenuation" of microbial virus through successive cultures in varying media.

Long before the transcendental evolution of modern bacteriology, the seeming analogy between the phenomena of fermentation and the manifestations of infectious disorders led to the grouping of these under the title of "zymotic diseases," and early in the career of the "germ theory" the minute organisms discovered were called "microzymes"—little ferments — the aptest of their ordinal appellations. Subsequent experience and the most recent research tend to bear out this analogy, and to suggest that the action of the bacteridiae is catalytic, and that the chemical product of fermentation—the real materies morbi—depends as much, or even more, upon the character of the fermenting medium.

One of the first observations in this direction was that septicaemia could be excited by a virus which, though proba-

bly the product of a bacterially originated fermentation, was itself demonstrably inanimate. Later, it was noticed in several instances that after certain "cultured" (or fermented) media had been freed from all micro-organisms, a something remained which was sufficient to communicate infection. Finally, chemistry is coming rapidly to our enlightenment with its already brilliant investigations into the genesis and composition of the various ptomaines, leucomaines, and still unbaptized "extractives."

In their clinical relations, it is worthy of passing note that, while the production or the ptomaines is presumably due to catalytic bacterial intervention, it is held by some of the best authorities that leucomaines may be generated by the degraded action of the tissue-cells themselves; and the question may arise, whether the somatic development of some of these leucomaines cannot, perhaps, prepare the soil for microzymotic implantation, thus constituting the individual susceptibility to exogenous infection. Again: The fact that different ptomaines, some poisonous, others innocuous, are formed successively in different stages of the same fermentation, may possibly hereafter be connected with the self-limitation of many zymotic maladies. Of the ptomaines heretofore catalogued, thirteen are stated to be more or less toxic, five to be innocent, and of the remaining nine the action is not yet known. It is not inconceivable that some of these may counteract others, and if future study shall lend weight to the conjecture, it will aid in solving the obscurest problems of pathology. Among the leucomaines, there is even now alleged evidence that a few, at least, are mutually antagonistic. Of the nature and mode of operation of the virulent "extractives" we have little beyond surmises, but a wide field is opened for farther exploration. I shall leave to the distinguished chemists who have kindly consented to join our discussion a definite survey of the boundaries of exact information concerning these and the preceding groups of alkaloids; and to my medical colleagues a more elaborate elucidation of the questions which I have cursorily introduced.