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Original Communications.

ON THE CLASSIFICATION OF TUMORS.*

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Once it was established by histological studies that the different forms of neoplasms arise from different tissues, it became possible to group tumors according to their origin. Once again, when, through the observations of the embryologists, it was recognized that the tissues could be grouped according to their origin from the primitive cell layers, it became possible to group tumors in the same way. This was done more especially by Waldeyer, and we obtained thus a classification of tumors into those of mesoblastic origin and those of epiblastic and hypoblastic derivation, the tumors derived from the two latter cell layers being grouped together, for it was soon found that they were of the same general type.

Here was a broad and very important generalization, and, what is more, in the then stage of histological and embryological knowledge, it appeared not only to be founded on a sure and scientific basis, but to fulfil to the fullest the needs of the worker. For it appeared to separate two sharply differentiated orders of tumors—those of connective tissue origin and connective tissue type from those of epithelial and glandular origin and epithelial and glandular type. So that for long years this distinction remained dominant; even to-day, in at least one text-book published during the last twelve months, that by Dr. Nicholas Senn, this is given as the acceptable classification.

It is, however, scarcely necessary to say that, with increasing knowledge, many cases were discovered which did not fit

* The main body of this paper was contributed as an address to the Toronto Pathological Society, January 4th, 1902.

into this scheme. A classification which brings together unlike bodies, making them members of our group, is, on the face of it, inadequate and faulty. Now, more especially during the last ten years, *pari passu* with a recognition of the bearing of the fuller and more recent findings of the embryologists, this classification has been found to have the above failing. It is, for example, generally accepted that the specific and characteristic cells of several tissues of the glandular type—of the kidneys, suprarenal bodies, ovaries, testes and uterine mucosa—are of mesoblastic origin, but these, nevertheless, give rise to tumors which may and often do resemble most closely those of hypoblastic and epiblastic origin.

There has been grave doubt as to the embryogeny of the organs in question. The idea that tissues of glandular type can only be derived from the two primary cell layers is very firmly fixed, and in one direction the attempt has been made to show that the organs in question are of hypoblastic or epiblastic origin; in the other, to make out the distinction between these organs and what have been termed "true glands." But I am only expressing the general opinion of modern embryologists and histologists, when I say that all these organs are now accepted by the majority as being definitely derived from mesoblast. And thus the cancer-like tumors which originate in these organs must be accepted as being mesoblastic.

On the other hand, the gliomata have a structure which brings them into close alliance with the atypical or malignant connective tissue tumors, and yet the neuroglia, from which they are derived, is of epiblastic origin. The notochord, again, is an organ of hypoblastic origin. According to Ribbert, and the view is becoming accepted, the remains of this fetal organ may give rise to tumors somewhat resembling myxomata, that is to say, to tumors which, though of hypoblastic origin, are of connective tissue type. Histologically, and for practical purposes, the first series above mentioned ought to be grouped along with the adenomata and carcinomata, and the two last with the sarcomata and connective tissue tumors, but the old embryological classification forces us to make the very opposite arrangement.

These difficulties have induced so strong a reaction that one has only to read the recent text-books and articles published during the last ten years to recognize that pathologists in general, nowadays, refuse to consider embryogeny in their schemes of classification, and from Thoma, or even earlier, from Hamilton in 1889—onwards, through Ribbert and Lubarsch—the list is so long that I need not give it—the tendency has been to divide the autonomous neoplasms into those of typical and atypical connective tissue appearance, and those of typical

and atypical glandular appearance. Some, like Hansemann,* would go so far as to declare that tumors must be described purely according to their histological appearance, and while certain terms in general use must continue to be employed—terms such as adenoma, sarcoma, etc.—nevertheless the only right classification at the present time must be by the organ, the tumors originating from one or other tissue being grouped together. So that, for example, we must group together the adenomata and carcinomata of the liver as a class distinct from the adenomata and carcinomata of the stomach. In short, they urge that the topographical classification is the only one possible at the present time.

There is undeniably a virtue in this position, provided that it is assumed in a proper spirit and regarded in the right light; not as a final stage, beyond which it is impossible to advance, but as a temporary stage of careful collection and collation of all the facts bearing upon the tumors proper to each individual organ, to the end that we may, from the knowledge so gained, proceed to further and sounder generalizations, that we may utilize the facts so amassed, to formulate broad statements concerning neoplasms, their relationship one to the other, and their mode of growth.

But against such a position this has to be said: all these years, whatever the scheme of classification popular at one time or other, pathologists have not been idle, so that we are already in possession of an enormous amount of material, and, what is more, of accurate illustrations of the same. Hence, if preconceived notions as to embryological relationships modified the earlier conclusions reached concerning one or other form, the details have been honestly described, and the descriptions and the accompanying illustrations help us to determine where the earlier conclusions need correction. Nay, more, we already possess exhaustive studies upon the various forms of tumors affecting one or other organ, the mammary gland, uterus, kidney, skin, etc. Taking everything into consideration, the time ought to be ripe for attempting more than this individualizing method. So, to repeat, I believe that we have by us embryological and anatomical observations which permit us to proceed further. What is more, I believe that, for a sound classification, we must inevitably pass backwards to the developmental relationship of the different tissues, that we must accept an embryogenetic basis, but one more in consonance with our present knowledge.

It is not necessary here to dwell upon the relationship of morbid to normal processes, and to show that the former in

* Hansemann, D. "Die mikroskopische Diagnose der bösartigen Geschwülste." Berlin: Hirschwald, 1897, p. 22.

each case are but exaggerations in one or other direction of the latter; nor need I point out the importance of a knowledge of the development of each tissue in arriving at a determination of the modifications which may be undergone by that tissue. In his Middleton-Goldsmith lecture in New York, Minot* has during the last year treated this latter subject in so masterly a manner, that anything I could say would be but a feeble reflection of his admirable presentation of the bearing of embryology upon pathology. What I wish now to point out more especially is that we pathologists—and we are not by any means the only ones to blame—have during these years continued to hold fixed and stereotyped views with regard to the exact nature and development of the different germinal layers, and it has been this misconception of these layers and the changes undergone by them, and of the mode in which the various tissues have been derived from them, that has brought us to this stage of discarding classifications constructed along embryological lines.

We have, that is, held as a body, that from a given layer, as, for example, the epiblast, only tissues, and tumors, of one general type are developed, and in practice we have found that this is not wholly the case. We have concluded that embryogenesis is a broken reed, and this despite our willingness to discover in it the basis for sound classification.

In order to indicate how a classification, which is primarily embryological, can be developed, it will be necessary for me to indicate rapidly what are the leading facts with regard to the earlier stages in the development of the different types of tissue, and I must recapitulate matters of a most elementary nature; nevertheless, if by doing this I can make my argument clear, I trust that I shall be forgiven.

The earliest stage to be recognized in the development of the fertilized ovum, once it has proceeded to segment, is the production of a morula, in which the blastomeres form a cluster or group of cells of the same order, with almost entire lack of differentiation. Rapidly this gives place to a second stage in which the component cells arrange themselves into two layers, the epiblast and the hypoblast, so that, at a singularly early stage, the future epiderm and endoderm are recognizable. The next stage to be noted is that the hypoblast, or internal of the two primitive layers, gives rise by proliferation of its cells to a group or mass of cells which now lie intermediate between the primitive epiblast and the hypoblast, and form the anlage of the mesoblast and of the organs derived from that layer, the hypoblast itself still remaining as a distinct lining membrane.

* "On the Embryological Basis of Pathology," *Science*, U.S., 1901, vol. xiii, p. 481.

What I would here note is, that we are perfectly willing to advance thus far and recognize these two primary and the third secondary cell layer. But there, in our appreciation of embryology as bearing upon pathology, we have been strangely apt to stop.

But now, just as the hypoblast gives origin to the mesoblast, so it is perfectly legitimate for us to recognize a similar process on the part of the epiblast; for the epiblastic cells in the immediate neighborhood of the primitive groove proliferate rapidly, and, in so doing, project in part below the original line of the epiblast, and, being forced inwards, a regular mass of cells is developed, in the central portion of which, around the spinal canal, there still remains evidence of its origin, in the form of a definite epithelial lining. This second portion becomes cut off completely from the superficial epiblast to form the mother tissue of the nervous system. Similarly, the hypoblast gives off a second localized mass of cells to form the notochord. Professor Minot has pointed out to me that, while possessing special features, the cells forming this notochord retain throughout epithelial characters, and must assuredly not be regarded as being of connective tissue type. The nature of the cells forming the chordoma of Ribbert makes him more than doubtful as to the origin of this tumor from notochordal remains. I have thus, in reference to this authority, modified my original writing in this respect.

The point I wish here to indicate is that mesoblast, "neuroblast," and notochord are derived from the two primitive cell layers, and, the first two, at least, *lose the lining—membrane characteristic of these two earliest layers, and take on a less differentiated condition prior to further evolution.* At a somewhat later period the mesoblast repeats the process of differentiation, and, from being a simple undifferentiated cell mass which we may compare with the morula, certain of its cells growing outwards between the epiblast and hypoblast, become arranged into a definite layer, to form or enclose the primitive body cavity. From this point onwards we can distinguish two structures of mesoblastic origin—the mesothelium, or lining membrane portion of the mesoblast; and the mesenchyme, or, as I may term it, the mesoblastic pulp.

It will be seen that I here make no note of the separation of mesoblastic elements into archiblast and parablast, as laid down by His. His's conception of the parablast, as arising from the elements of the white yolk and from the "granulosa cells," is now known to be wrong, and indeed he has himself withdrawn his earlier hypothesis as to its origin. Add to this, that so hopeless a confusion has arisen among writers as to what is archiblastic and what parablastic, that we have no

option but to discard these terms. As pointed out by Minot, the recognition of the separation of the mesoblast into mesothelial and mesenchymatous elements respectively, suffices for all practical purposes to indicate that which is of real importance in His's observations, namely, the recognition of the ultimate evolution of the primitive mesoblast into two distinct series of cellular constituents.

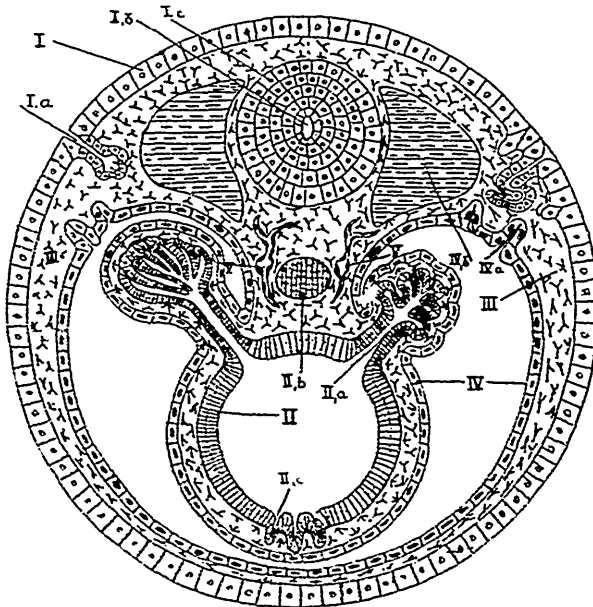
For our purpose, it is unnecessary to choose definitely between the two main contending views as to the origin of mesenchyme. Whether all the primitive mesoblast first passes into a mesothelial stage, from which by further proliferation the mesenchyme is derived; or whether, on the other hand, a portion of the mesoblast does not undergo conversion into mesothelium, but continues directly to develop into mesenchyme, is for us a relatively secondary matter. The important point is, that we have to recognize that the primitive mesoblast is eventually separated into these two sets of cells, and of these the mesothelium is differentiated into a layer of the lining membrane type.

At a still later date masses of mesothelial cells again accumulate, and, as was the case with the epiblast and the hypoblast in the earlier stage, they give off on either side a mass of more undifferentiated cells, and these masses form the mother tissue or anlage of the eventual striated muscle. Later, though still in this embryonic period, with the development of the first vessels, the mesenchyme gives off a series of cells of the lining membrane type, which form the eventual lining cells, or endothelium, of the vascular and lymphatic systems.

There is still some little uncertainty as to the exact relationship of the vascular endothelium, whether it be directly derived from mesothelium or from the mesenchyme. As Professor Minot has pointed out to me, His has of late indicated that it is of relatively very early development in certain forms. On the other hand, I learn from Professor McBride that relatively high up among the forms of animal life it may be wanting, as again it may only show itself at a period definitely later than the development of the vascular channels. What I have stated above, thus, may be taken as representing, as accurately as is possible at the present time, the generally accepted relationships in time, of endothelial to other embryonic developments.

Thus during early embryonic life we obtain a series of differentiations of the primitive cell layers leading to the production of two sets of tissues; one which we may term the lining membrane tissues, the other, the pulp tissues. I do not wholly like the latter expression, but can think of none other which more nearly expresses the conception which I wish here to impress on the reader, namely, that, in this very earliest

stage the mother cells from which certain tissues are derived already have a definite order and position, as constituting membranes, whereas the mother cells of the other group of tissues lack this definite order and exhibit no marked differentiation.



SCHMATIC REPRESENTATION OF THE BODY LAYERS.

I. EPIBLAST.

- I. a. Epiblastic gland (skin glands, etc.).
- I. b. Epiblastic cell layer, lining the neural canal.
- I. c. Neuroblast, hyle tissue of epiblastic origin.

II. HYPOBLAST.

- II. a. Hypoblastic gland (lungs, liver, intestinal glands, etc.).
- II. b. Notochord.

III. MESENCHYME.

IV. MESOTHELIUM (lining body cavities, etc.).

- IV. a. Mesothelial gland (kidneys, ovaries, etc.).
- IV. b. Myotomes (origin of striated muscles, hyle tissue of mesothelial origin).

V. ENDOTHELIUM (lining blood and lymph vessels).

If, now, we follow up these two orders of tissues to their full development, we find that from the lining membranes are developed tissues of one character, from the pulp, tissues of a different character. These lining membranes, from whatever layer they originate, may either remain as functional membranes covering an extensive surface, or they may become

modified so as to form the various highly specialized and specific constituents of various organs. To reach this latter stage the epithelium either undergoes extensive infolding, or sends downward tubular processes, which branch to a greater or less extent, or again which sends downward solid processes, as occur, for example, in the development of the suprarenal. In quite a large number of instances it would seem that the first process in the production of the tubular glands is one of budding, or projection downwards into the underlying mesenchyme, of solid processes, which subsequently became hollowed out and tubular (*e.g.*, sudoriferous glands and renal tubules). Thus it comes to pass that the various glandular organs are formed of a parenchyma originating from one of the primitive lining membranes and a stroma of connective tissue which is of mesenchymatous origin. And even in cases where there is the widest divergence from the original type of lining membrane, we find that this distinction still holds, that the parenchymatous cells form *layers or groups into which the vessels do not penetrate, and in which there is an absence of stroma between the members of the cell groups*, the cells being at most united by bridges and by a fine cement material. While, contrariwise, regarding tissues originating from the embryonic pulp, we notice that in them the prominent characteristic is that there is an *intercellular ground substance, either homogeneous or fibrillated, separating the specific cells of the tissue.*

Accepting this conception of the different characters of the different tissues, it will be seen that these may be divided into two great groups, which we may term, provisionally, the lining membrane group and the body pulp group. This division appears to me most important. While some pathologists, like O. Israel* and Buxton,† have already in part noticed this distinction, I do not know that histologists and embryologists have called adequate attention to it. Though I am strongly against the coinage of new scientific terms, there are occasions when this is absolutely necessary, and this appears to be pre-eminently one of these occasions. Thus I would term the lining membrane tissues *lepidic*, from *λεπις, λεπιδος*, a rind, skin, or membrane; and what I have termed the pulp tissue *kylic*, from *ύλη*, crude or undifferentiated material or matter.‡ We can go further and subdivide each of these main groups according as to whether the tissues are of epiplastic, hypo-

* Israel, O., *Berliner klin. Wochenschr.*, xxxvii, 1900, pp. 609, 644 and 667.

† Buxton., *Journ. Cutan. and Genito-Urin. Dis.*, N.Y., February and April, 1901.

‡ I would here acknowledge my indebtedness to Principal Peterson, of McGill University, for aid in the selection of these terms.

blastic, mesothelial, mesenchymatous, or endothelial origin. On this basis we obtain the following classification of normal tissues :

I. LEPIDIC, OR LINING MEMBRANE TISSUES,

in which the blood vessels do not penetrate the groups of specific cells, and in which there is an absence of definite stroma between the individual cells, although such stroma, of mesenchymatous origin, may be present between the groups of cells.

1. EPIBLASTIC—

Epidermis. Epidermal appendages—Hairs, nails, enamel of teeth etc. Epidermal glands. Epithelium of the mouth—Salivary glands. Epithelium and glands of—Nasal tract and associated spaces. Epidermal portion of hypophysis cerebri. Lens of eye. Epithelium of—Membranous labyrinth of ear, anus, male urethra (except prostatic portion).

2. HYPOBLASTIC—

Epithelium of—Digestive tract and glands connected with it. Specific cells of—Liver, pancreas, tonsils, thymus, thyroid. Epithelium of—Trachea, lungs, bladder, female urethra, male urethra (prostatic portion.)

3. MESOTHELIAL—

Lining cells of—Pleuræ, pericardium, peritoneum. Specific cells of—Suprarenals, kidneys, testes, ovaries (Graafian follicles). Epithelium and glands of—Fallopian tubes, uterus, vagina, vasa deferentia, vesiculæ seminales, etc.

4. ENDOTHELIAL—

Lining endothelium of—Blood vessels, lymphatics.

II. HYLIC, OR PRIMITIVE PULP TISSUES.

Organs and tissues in which the special characteristic is that the specific cells lie in, and are separated by, a definite stroma, homogenous, or fibrillar in which there may or may not be blood and lymph vessels.

1. EPIBLASTIC—

Nerve cells, neuroglia.

2. HYPOBLASTIC—

3. MESENCHYMATOUS—

Fibrous connective tissues, cartilage, bone, reticulum of lymph glands, bone marrow, fat cells, involuntary muscle tissue, spleen, blood vessels, blood corpuscles.

4. MESOTHELIAL—

Striated muscle, including cardiac muscle.

With this conception of the two great groups of tissues, we can now proceed to classify the tumors, by which term I refer

here to what Thoma has called "autonomous neoplasms." Of these there are two great orders, the Teratomata and the Blastomata. The former I have elsewhere defined as "tumors composed of the products of growth of one individual within the tissues of another individual of the same species," the latter as "tumors composed of the products of aberrant growth of cells and tissues of the individual in whom they are developed."* It is not necessary here to discuss the correctness of these definitions, for, however defined, I wish here to leave the Teratomata very largely out of consideration; they form a class by themselves, and whether we accept or do not accept the definition above given, we find that their mode of development and their characteristics follow—with complications—the lines about to be laid down with regard to the Blastomata. These latter form the more important class, and it is with them that I wish especially to deal.

Following this scheme of the classification of the normal tissues we may now divide these into two main genera—the lepidomata, originating from the above lining membrane tissues; and the hylomata, originating and derived from tissues developed from the embryonic pulp.

I. LEPIDOMATA, OR "RIND" TUMORS.

A. *Primary Lepidomata.*

1. EPILEPIDOMATA.

Tumors whose characteristic constituents are overgrowths of tissues, derived directly from the epiblastic lining membranes, or true epiblast.

- (a) *Typical.*—Papilloma, epidermal adenomata (of sweat, salivary, sebaceous, and mammary glands, etc.).
- (b) *Atypical.*—Epithelioma proper, carcinoma of glands of epiblastic origin.

2. HYPOLEPIDOMATA.

- (a) *Typical.*—Adenoma and papilloma of digestive and respiratory tracts, thyroid, pancreas, liver, bladder, etc.
- (b) *Atypical.*—Carcinoma developing in the same organs and regions.

B. *Secondary Lepidomata.*

3. MESOLEPIDOMATA.

Tumors whose characteristic constituents are cells derived in direct descent from the persistent mesothelium of the embryo.

Classification of Tumors

- (a) *Typical.*—Adenoma of kidney, testicle, ovary, urogenital ducts; adenoma of uterus and prostate; adenomas originating from the serous membranes, "mesothelioma" of pleura, peritoneum, etc.

* *Brit. Med. Journ.*, 1901, I, p. 621.

- (b) *Atypical*.—Cancer of the above mentioned organs ; squamous endothelioma, so-called, of serous surfaces, epithelioma of vagina.

4. ENDOTHELIAL LEPIDOMATA.

Tumors originating from the endothelium of the blood and lymph vessels ; endothelioma, perithelioma.

II. HYLOMATA, OR "PULP" TUMORS.

1. EPIHYLOMATA.

Tumors whose characteristic constituents are overgrowths of tissues, derived from the embryonic pulp of epiblastic origin.

- (a) *Typical*.—True neuroma, glioma.
 (b) *Atypical*.—"Gliosarcoma."

2. HYPOHYLOMATA.

Tumors derived similarly from embryonic pulp of hypoblastic origin. Chordoma.

3. MESOHYLOMATA.

A. MESHCHYMAL HYLOMATA.—Derived from tissues originating from the persistent mesoblastic pulp or mesenchyme.

- (a) *Typical*.—Fibroma, lipoma, chondroma, osteoma, myxoma, leiomyoma.
 (b) *Atypical*.—Sarcoma (derived from mesenchymatous tissues), with its various subdivisions, fibro-sarcoma, spindle-cell sarcoma, oat-shape cell sarcoma, chondro-sarcoma, osteo-sarcoma, myxo-sarcoma, melanotic sarcoma, etc.

B. MESOTHELIAL HYLOMATA.—Tumors which are overgrowths similarly of tissues derived from embryonic pulp of definitely mesothelial origin. Rhabdomyoma.

It will be seen that in this classification I do not include the deciduoma malignum. As I have pointed out elsewhere,* accepting the view that the syncytium is of fetal origin and not maternal, these tumors have to be classed with the Teratomata, *i.e.*, with the tumors originating in the growth of the cells of a second individual within the tissues of an individual of the same species.

If this classification be studied, it will be seen that we have done away with that deficiency in the earlier embryological classifications, whereby tumors of unlike orders and histological appearances were grouped together, and those of like characters separated. Gliomata, for example, come to be placed close to the mesenchymatous tissues, the gland-like tumors of mesoblastic origin become grouped along with those of epiblastic and hypoblastic origin.

* *loc. cit.*

Have we, accomplishing this, introduced any new difficulties? One objection will undoubtedly present itself, namely, that among the mesolepidomata we have grouped together tumors, some of which are of a strongly epithelial or glandular type, for example, the cancers of the uterus, with others, like the endotheliomata, which tend to be distinctly of a sarcomatous type. But further consideration will show that this, instead of being a weakness, is a strong point in this classification. We have, that is, to recognize that among these mesolepidomata, as above defined, we meet with several forms of tumors of transitional type—tumors which in their least aberrant portions show characters which approximate them to the carcinomata, and in their more aberrant portions are undistinguishable from sarcomata. And, indeed, it is only by a study of the embryogeny of the tissues from which these tumors are derived that we gain any satisfactory comprehension of the why and wherefore of these peculiar characters.

Here let me point out that, employing the terms here introduced, based as they are upon the embryogeny of the different tissues and the tumors derived from them, we may allow the terms "carcinoma" and "sarcoma," to revert to their earlier and purely histological significance. And I would emphasize, that it must not be understood that these terms, carcinoma and sarcoma, are to be regarded, and are by me regarded, as being synonymous with "atypical lepidoma" and "atypical hyloma" respectively. Rather, I would lay down that, accepting this nomenclature, we may safely speak of any tumor of the aberrant glandular type as carcinoma, whether it be of epiblastic or mesothelial origin, and any tumor of aberrant and so-called embryonic connective tissue type, as sarcoma, whether derived from the mesenchyme, the epiblast, *e.g.* glio-sarcoma, or even from the endothelium or mesothelium.

Of late years there has been an ineffectual attempt to restrict these two terms. Thus, many authorities have refused to speak of malignant adenomata of the kidney and suprarenal as being true carcinomata, and others have strenuously opposed the employment of the term gliosarcoma. Nevertheless, the same authorities, while refusing to speak of a cancer or carcinoma of the kidney, freely refer to carcinoma of the uterus, although, like the renal tubules and the suprarenal, the uterine mucosa is of mesothelial origin. In short, it has been proved impossible to employ these terms with embryogenetic limitations, and this introduction of a nomenclature, which is based upon embryogeny, ought, if accepted, to permit us to use them, as they ought to be used, in the purely histological sense.

It will be seen that I in no sense urge that (were it possible!) the use of these terms be done away with. For routine clinical purposes they are

most valuable. When a tumor has assumed a carcinomatous or a sarcomatous appearance it is coincidentally locally malignant, if not in all cases generally malignant also. The terms, therefore, have a clinical significance and value. Only, let me repeat, they are valueless for purposes of relationship and classification and must bear no embryogenetic signification.

To explain these peculiarities of lepidomatous tumors, let me point out that:

1. After the embryonic period, it would seem that hylic tissues never take on lepidic characters. We have no instances, that is, in which, after embryonic life, we recognize that lining membranes or glands become differentiated from connective tissues.

2. It is generally held that the converse is also true.* With regard to tumors we find the same principle evidently in operation.

3. We may confidently lay down that all tumors and portions of tumors, containing cell layers or cell groups of the lepidic type, have been derived from pre-existing lepidic tissue. Possibly this so-called principle is more of the nature of a postulate than of a proved law; we take it for granted, and may not be able to prove our position in every case. We have, that is, fairly numerous examples of neoplasms of lepidic type, developing in situations in which normal lepidic tissue is not present—adenomatoid tumors of the bone, gland-like follicles in the midst of uterine fibroids, cysts, or tubular spaces lined by cubical or columnar epithelium in gliomata—and the list might be lengthened.

In by far the larger number of cases of this order, either the structure of the tumor so conforms to known neoplasms, the origin of which has been traced positively to some glandular organ, that we are convinced that the growth has originated from the inclusion of a portion of such glandular tissue, or we recognize that the growth occurs in some region, in which, during fetal life, there has existed some duct or portion of lepidic tissue, in a region, likewise, in which in the adult we occasionally encounter the persistent remains of the same. But pathologists, I believe without exception, agree to the sense of this postulate; we may not know, in all instances, what is

* True, that is, until Beard's rather startling observations upon the origin of leucocytes is confirmed. According to this observer the first, and indeed the main development of leucocytes is to be found as a process of proliferation and metamorphosis of the hypoblastic epithelium of the follicles of the fetal thymus gland. Beard's observations were published eighteen months ago, but to the best of my knowledge they still lack confirmation. Leo Loeb, also (*Arch. f. Entwicklungs, Mech.*, 1898, Bd. vi., and *Medicine*, April, 1899), has thought to see connective tissue cells undergoing origin from the Malpighian layer of the skin: his observations have not gained acceptance. In lower forms of life, however, some definite cases have of late been brought forward of regeneration of hylic from lepidic tissues.

the original tissue from which a heterotopic glandular tumor has had its origin, but we are absolutely sure that that original tissue giving rise to a glandular tumor has not been of the connective tissue type. We may therefore, I think, lay this down with confidence that tumors in which the cell arrangement is of the lepidic type, presenting columns or groups of cells, devoid of any stroma between the members of these columns or groups, have been developed from one or other lepidic tissue, and not from one of the hylic or pulp tissues.

4. We cannot, with equal confidence, make the converse statement, that tumors of the hylic type have always originated from hylic tissues and not from lepidic.

4a. I believe that I am right in stating that lepidic tumors of epiblastic and hypoblastic origin, however rapidly they grow, however extensive and distant be their metastases, always even in their most aberrant portions, retain lepidic properties. Wherever two or three of the specific cells of such a tumor are gathered together, they form alveoli with no stroma and no interstitial capillaries. To the best of my knowledge, no case is on record in which it has been satisfactorily proved that peripheral or metastatic growths of a typical carcinoma of epiblastic or hypoblastic origin have assumed definitely sarcomatous characters.

Possibly the careful studies now being made, in connection with the melanotic tumors originating in connection with the skin, may prove that this statement will need eventual revision. Authorities are still so much divided, as to the exact origin of sundry tumors of sarcomatous type belonging to this group, that it is not possible to make an absolute statement concerning their origin. If, however, it can be proved that under certain conditions, tumors originating from the malpighian layer of the skin can in their growth lose their lepidic characters, *i.e.*, can become possessed of a definite stroma passing between the individual cells, then we shall have to acknowledge that epiblastic lepidomata can, in the course of their growth, revert to a more undifferentiated sarcomatous type.

In one very interesting tumor of the prostate, examined by me some years ago, I was for a time of opinion that I could recognize such a transition. Sections taken from the prostate itself, showed beautifully the existence of a very typical carcinoma almost scirrhus in appearance; passing towards the bladder the type became that of carcinoma simplex. The abundant, apparently rapid growth, forming a projection into the bladder itself, was so wholly cellular as to resemble a round-cell sarcoma, but more careful examination showed that even here the cells were arranged in alveoli, although the stroma between the individual groups was so delicate as to be traced with considerable difficulty.

4b. With mesothelial and endothelial lepidomata the same is not always so; the older or earlier portions of the tumor may show distinct adenomatoid or carcinomatoid characters—occasionally the whole tumor is typically adenomatous; but more rapidly growing portions are peculiarly liable to depart so far from type, so peculiarly liable to take on the appearance of embryonic connective tissue, that it becomes impossible, basing our terminology upon histological appearances, to say whether we are dealing with a carcinoma, or a sarcoma, or a mixed growth—a carcinoma sarcomatodes, or a sarcoma carcinomatodes. More particularly the increased recognition of the frequency of endotheliomata and peritheliomata has forced us to see the difficulties in our present mode of classification. The perithelioma when developing characteristically, apparently as an endothelioma of the perivascular lymphatics, may strongly resemble an adenoma in the regular columnar arrangement of its cells, and yet other parts of the same tumor may be absolutely sarcomatous in type. And while the ordinary endothelioma, such as one so commonly meets with, forming tumors in connection with the membranes of the brain, is in general characteristically sarcomatous in structure, areas to be detected here and there, indicating its origin as a squamous proliferation of the lymphatic or blood vascular endothelium. Without, I trust, taking anything from the interest and value of his forthcoming article upon this subject, I would here note that Dr. P. G. Woolley, Fellow in Pathology at McGill University, has just completed a most elaborate and minute study of a tumor, originating in the zona fasciculata of the suprarenal, in which a similar transition from adenomatoid to purely sarcomatous structure is to be followed without the possibility of doubt.

Here, then, are tumors which, showing in the least aberrant regions, indications of origin from a lining membrane or lepidic tissue, are apt to take on the appearance and structures more characteristic of "pulp" tumors.

Now this difference in behaviour between the epilepidomata and hypolepidomata on the one hand, and sundry of the mesotheliomata and endotheliomata (mesolepidomata) on the other, is but consonant with embryological observations and the broadest biological principles. One great principle which we see constantly in evidence, is that those structures and properties which are of oldest acquirement are those which are last to be lost; it is the most recent acquirement which tends to be the earliest to disappear. We see this exemplified continually in connection with the blastomata. The more rapid the growth—the more the cells of a tumor depart from their normal mature environment—the more do we observe

that those features of the tumor cells, which are specific for one or other tissue, tend to disappear. In the most rapidly growing and most aberrant tumors, the individual cells afford us little or no clue to the tissue of origin. It is the general arrangement of the cells that aids us in making our diagnosis, and even the general arrangement is not so much that peculiar to the fully grown tissue, as that common to connective tissues in general, or to glandular or lepidic tissues in general. We recognize a reversion to an earlier, simpler, or, we express it, embryonic type. As I have pointed out elsewhere a distinction must be recognized between the functional and the proliferative, or vegetative, activities of cells; the essential feature of the cell of the atypical tumor is the replacement of functional by vegetative activity, and the consequent loss of those features which are directly associated with the performance of function.

I would now suggest that we carry the working of this principle a little farther back. The first lining membranes to be differentiated are the epiblast and hypoblast; their differentiation, indeed, is one of the earliest events in developmental history; and this being the case, we should expect—and we find—that tissues, whether normal or neoplastic, derived in direct line from these two layers, are singularly tenacious of their properties as lining membranes, and so it is that epilepidomata and hypolepidomata always show evidences of their lepidic nature. We should not expect—and we do not find—that where this direct line has been departed from, where, for example, hypoblast has given off masses of cells to form mesoblast, and the epiblast similar masses to form the neuroblast, that, in reversion, tissues derived from mesoblast and neuroblast respectively, should again enter upon the lining membrane stage. Where in the process of development an organ or part is formed by the cells of tissue of a higher order assuming a less differentiated condition, and from this lower state proceeding to develop along special lines, we do not find that in reversion and degeneration that tissue passes beyond the less differentiated stage, and then proceeds to show characters of a primary more differentiated condition. Thus it is that the mesenchymatous tumors and sarcomata in general show no tendency to assume lining membrane or lepidic characters, even though, without exception, all these tissues have primarily arisen as derivatives from either epiblastic or hypoblastic lining membrane.

If occasionally in gliomata we find cysts lined with columnar epithelium, this is not an example of such reversion to the more primitive epiblastic characters of the glial tissue. Those who have studied cases of this order have, without exception, ascribed such conditions to inclusions of rests of embryonic tissue containing portions of the *anlage* of the central nervous canal.

But now, coming to the mesoblast, we know that it is at a later date in the history of the embryo that this becomes differentiated into mesothelium and mesenchyme, and the development of the mesothelium is in the direction of increased specialization. Thus we should expect—and we find—that in processes of a reversionary type these more lately acquired characters are more capable of being lost, so that growths formed from organs of mesothelial origin are more liable to pass back and to assume characters approaching those of the primitive mesenchyme and mesoblast, than are growths from hypoblastic and epiblastic organs to revert to what we might term the morula stage. And if it be correct to regard the endothelium as a still later development from the mesenchyme, then we can understand how it is that endotheliomata are peculiarly liable to take on the characters of the primitive pulp tissue from which endothelium became differentiated.

Israel (*loc. cit.* p. 668) recognizes fully this same dependence of the characters of the endotheliomata upon the embryogeny of the mother tissues, for he remarks (the italics are mine): “Diese (endotheliale) Deckzellen haben sich nicht unter allen Umständen in ihren Eigenschaften von diejenigen ihrer, Inter-cellularmasse bildenden, Stammes genossen soweit entfernt, dass auch sie gelegentlich wieder befähigt würden, Inter-cellularmasse hervorzubringen, deren Qualität von den ererbten Eigen thümlichkeiten abhängig ist. . . . Gelegentliche Vorkommnisse in den endothelgeschwülsten und auch bei gewissen entzündlichen Neubildungen zeigen, dass die Fähigkeit Inter-cellular substanzen zu produciren, manchen in Tumoren gewachsenen endotheldescendenten, *nicht unwiederbringlich gegangen ist* wie den Epithelien. Das ist aber auch der für die Diagnose praktische bedeutsamste unterschied endothelialer krebse gegenüber den epithelialen, und er macht von allem die Uebergangs formen vom Epitheliom zum sarkom verständlich.”

I am far from saying that this is the one and sufficing cause why certain orders of the mesolepidomata have this marked tendency to assume more sarcomatous characters. I do not think that this is everything; nevertheless it does, I think, materially aid us to understand why this peculiarity in the progressive development of these tumors manifests itself; it is one factor. Indeed, it is not all the mesolepidomata which present these same tendencies. To give one example: we never, to my knowledge, find that carcinomata of the uterus, either in their more rapidly growing parts or in their metastases, show other than well-developed cancerous structure. In fact, there is singularly little distinction to be drawn between the characters of cancers originating from the uterine mucosa and those of epiblastic and hypoblastic origin. The same is

true with regard to the tumors of the Fallopian tube. And, so far as I see, we have to lay down also that the high grade of specialization and differentiation of the lining cells of a membrane is accompanied, *pari passu*, by a lack of capacity to undergo reversion to the simplest type. While, for example, the glial cells are apt to undergo rapid proliferation and form tumors of a simple cellular type, true neuromata are extraordinarily rare, and in general we may lay down that the high degree of differentiation which has been reached by the neurone has taken from it, to a very large extent, the power of proliferation. This is, it is true, an extreme example. The cells of the uterine mucosa are not nearly so highly differentiated; they are, however, distinctly more specialized than are endothelia, and the cells lining the serous cavities. And, I would add, more differentiated than, for example, the cells of the cortex of the suprarenal, which but attain an arrangement in solid columns resembling that seen during the process of development of certain other glandular organs.

Thus it may be that simplicity of type is one factor determining why certain tumors revert from a more carcinomatous to a more sarcomatous structure. I mention this as a possible factor, and would not dwell too strongly upon it; rather I would admit, and that willingly, that here we are in the region of analogy and hypothesis. Just as we are unable to explain why in one case, in a given organ, we have produced, for example, a relatively benign adenoma; in another, in that same organ, an actively growing and malignant carcinoma; so it may be that full consideration will show that here also we have to recognize, without possibility of explanation, that, in connection with tumors of one organ, the lepidic properties are retained with remarkable persistence, while in tumors of another organ, derived from the same cell layer, these same properties are lost with comparative ease. But it seems to me not without its use, to point out tentatively a possible factor in the development of the different properties of different tumors. As a group it has to be admitted that mesothelial and endothelial tumors exhibit this tendency to assume a more sarcomatous appearance.

We are thus justified in separating lepidomata into two main divisions,—the primary lepidomata, wherein we include the tumors derived from tissues of direct descent from the epiblast and hypoblast, and the secondary or transitional lepidomata, which include tissues of indirect descent from the same, and which may as a consequence show what I may term transitional characters. Making this division, I leave it open as to whether we speak of the tumors of the first order only as the true carcinomata, and refer to those of the second order as at

most carcinomatoid, or speak of all tumors of what I may now without confusion refer to as having lepidic characters, as being carcinomata. My preference, as I have already stated, is for employing this term purely in a histological sense.

Recognizing that many years have passed since I was engaged in the active study of embryology, I have not ventured to publish this paper without consulting those most capable of pronouncing authoritatively upon the embryological problems here involved; and I would here express my sincere thanks and sense of deep obligation to Professor Charles Sedgwick Minot, of Harvard, and Professor Carl Huber, of Ann Arbor, for their most kind criticism and suggestions in connection with the views here elaborated. I very gladly acknowledge also that I owe more particularly to a correspondence with Professor Huber, now some months ago, my recognition of the importance, from a pathological point of view, of distinguishing between the mesothelial and mesenchymatous derivatives of the mesoblast.

ABDUCTOR PARALYSIS OF THE LARYNX.*

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In presenting the subject of abductor paralysis again for your consideration, and keeping in mind the paper read before you in 1900 by Dr. Norton L. Wilson (1), I may premise by apologizing that I have nothing new to add with regard to etiology or treatment. Only two cases have presented themselves to me thus far, but as one of these has been under observation for over four years, and as it exhibits some doubtful points in diagnosis as well as other points of interest, I may be pardoned for bringing the subject under your attention.

Both of my cases have been males. The first presented himself on the 28th of May, 1898, at St. Michael's Hospital, suffering from marked dyspnea. At the age of 18 the patient had suffered from a slight attack of gonorrhoea, and from what may have been a chancre. There is an indefinite history of the appearance of four gummata, one on the left temple, but there was no appearance of swelling of the glands, or of a rash upon the skin at any time. It would seem that a diagnosis of syphilis had been made at that time, as the patient states that he was treated for nine months with blue pill and sarsaparilla. From that time on he appears to have been thoroughly healthy and well. At the age of 26 he married, and became the father of four children, all of whom have been healthy from birth.

Two years ago, that is to say thirty-seven years after the chancre, the present disease manifested itself. For the first twelve months all that was noticed was a numbness along the outside of, and in the heel of the left foot. Eight months ago he noticed a numbness in the tongue, similar to that of the feet. This numbness spread to the left side of the nose and cheek, and most of the left side of the face. Three months later hoarseness developed, gradually increasing, while the voice became noticeably weaker. Two months ago swallowing became difficult for the first time, and this was accompanied by a tendency toward the regurgitation of fluids through the nose. Respiration also became noisy, and somewhat difficult, especially on exertion. During the past six years there has been a loss of weight, amounting to 35 pounds, and night sweats have not been uncommon. At the present time he has a sensation of walking on wool, equally in both feet. The legs

* Read before the American Laryngological Society at its meeting in Washington, D.C., June 3rd, 1902.

are also numb, and the patient has great difficulty in keeping his feet and legs warm. The left side of his face, the lips and the chin, and the tongue are numb, and he does not use the left side of his mouth in chewing his food. Swallowing is performed without any pain or difficulty. The respiration is very noisy, the chief difficulty lying with the inspiratory movement. The noise becomes worse when the patient is sleeping, which he does very soundly, and in the prone position. The character of the breathing at night is best described by the statement that the only person upon the flat upon which he is quartered, who has been able to sleep since he was admitted, is the patient himself.

Prior to his entrance into this hospital the man had been under charge of Dr. McDonagh, in the General Hospital, for a month, and an operation advised but refused.

I am indebted to my colleague, Professor Anderson, for the following account of the patient's general condition.

These notes on the patient's general condition were made on June 4th, 1898, a few days after tracheotomy by Dr. Wishart.

The patient is a man of good physique, but rather emaciated, weighing 135 pounds; has a nervous, rather anxious expression. Heart and circulatory system are normal, pulse 84. Chest is well formed, though there is slightly increased depression in the supra-clavicular and supra-sternal fossae. Physical examination discovers nothing abnormal, chest movements free and easy, respirations 24. Alimentary system—no difficulty in swallowing at present, though a short time previously food had regurgitated through the nose. Digestion is good and the bowels are regular. Genito-urinary system—patient has had incontinence of urine which dribbles away from him, with his being able to feel it passing through the urethra. Examination of the urine reveals nothing abnormal, no albumen and no casts. There is loss of sexual power. Nervous system—there is marked loss of sensation on the left side of the face from the forehead to the chin, also on the left side of the lips and tongue. The left temporal and masseter muscles show great atrophy; he has little power to bite with the left side of the jaw; cannot whistle from inability to approximate the lips; the tongue is protruded straight and shows no atrophy. Sterno-mastoids are normal. Hearing is not impaired. Sight is good, though the eyes tire readily. Patient has diplopia; pupils are of medium size and equal, they react sluggishly to both light and accommodation. There is no loss of power in any of the ocular muscles. Patient complains of a feeling of constriction about the lower part of the abdomen, also severe darting pains through the lower extremities. Has a peculiar

feeling in the feet, as if walking on springy rubber, and he also complains of coldness in the lower extremities, and tires readily on walking. There is no evidence of atrophy. The shooting pains are not constant and are worse at night. Ordinary sensation is lessened in both the feet and lower half of the legs in front and behind. Muscular sense is good. Patient says he has to steady himself to prevent falling when washing his face. On standing with the feet together and the eyes closed, he sways very much from side to side, but does not fall. There is considerable inco-ordination of the lower extremities in walking, the feet being thrown out and brought down with more force than normally. He has had much difficulty in attempting to walk in a straight line. The knee jerk is lost on both sides completely, even after reinforcement. There is no tremor of the lips, facial muscles or hands, and no inco-ordination in the upper extremities, or evidence of other trouble.

The examination of the larynx showed the vocal cords lying almost in apposition, or what may be styled the position of phonation. In expiration they appeared to be pushed apart, chiefly through a yielding of the right cord by the force of the breath, while in inspiration they sagged somewhat and came closer together. There was no lesion of the larynx, and the color was normal, sensation being somewhat diminished. The voice was hoarse and coarse, speech being free so long as the air in the lungs held out, when the patient paused and made a forced inspiration accompanied by a marked elevation of the shoulders. This exertion was painless but fatiguing. The facial expression indicated considerable anxiety.

Immediate operation was decided upon, and tracheotomy performed two days later, considerable difficulty being experienced with the anesthetic owing to the inspiratory effort. The incision was made below the isthmus of the thyroid. A tube has been worn constantly ever since (over four years) to the entire relief of the patient, who has had, however, several uncomfortable experiences owing to the tube having accidentally slipped out, the sinus showing at the same time a marked tendency to contract.

Coincident with the operation, that patient was put upon strychnia and arsenic, and a mixture of iodide of potash and mercury. Three weeks later the latter mixture was reduced owing to symptoms of salivation. The patient was kept in the hospital for over four months, during which time he gained considerably in weight and appearance, but complained of an increasing sensation of loss of power in the lower jaw. When he was discharged from the hospital he weighed 140 pounds. Examination made May 31st, 1902, by Professor Anderson.

Sensation on the left side of the face is practically normal. The atrophy of the left temporal and masseter muscles is much less marked, and the patient can bite well with the left side of the jaw. The ocular movements are perfect; no reduction of the visual field; left pupil is slightly larger than the right; both pupils react to light and accommodation, but still sluggishly; no mystagmus. Tongue is protruded straight, and there is no atrophy of its muscles. Shooting pains are much less marked in the lower extremities. Numbness of feet continues, though inordination of the lower extremities is much less marked. Patient still sways considerably on standing with the eyes closed, but less than when last examined; knee jerks still completely absent; no muscular atrophy. The incontinence of urine continues, though the patient says he can now feel the urine passing through the urethra. Bowels are normal. Weight 176 pounds.

At the end of last week I was fortunate enough to be able to make another examination of the larynx of my patient. Speech was as clear, if not clearer than before, although he fancied that at times his voice was somewhat thicker, and enunciation not so clear. The vocal cords are not lying in apposition, but are separated about one-eighth of an inch throughout their entire length, coming together in phonation. In inspiration there is a distinct lagging of the cords towards each other, and no perceptible movement of abduction could be made out. The position of the cords is not cadaveric but perhaps points to a weakening of the power of abduction. When the finger was placed over the mouth of the tracheotomy tube patient stated that he breathed with more ease than formerly.

Diagnosis: *Tabes dorsalis* with bilateral involvement of the bulbar, nuclei of the spinal accessory and unilateral involvement of the facial, trigeminal, and slightly of the oculo-motor nerves.

While some of the classical symptoms of locomotor ataxia, as the Argyle-Robertson pupil, are absent, and while the improvement in the patient's condition to so considerable an extent is unusual, still the absent knee jerks, Romberg's sign, the lightning pains, the altered sensations in the feet, slight inco-ordination and the bladder symptoms, occurring in a patient with a previous history of syphilis, are sufficient to justify this opinion.

In his last edition McBride (2), after re-stating Semon's well-known law, "that paresis confined to the abductors is commonly, if not always due to organic changes in the pneumogastric or recurrent trunk, or in the medulla," goes on to say that having had access to the manuscript of a work now in

preparation by this painstaking investigator, he (McBride) feels inclined to doubt whether any incontestable evidence can be brought forward as to the existence of laryngeal paralysis due to organic changes affecting the nervous system, and confined to the abductors alone. I am not aware that the work above referred to has issued from the press, at any rate I have not had access to it, but I believe we are safe in assuming that the conclusions above quoted are correct, and represent the sum of the opinions of the leading investigators of the day. While it is true that the statement of this law has met with great opposition from such observers as Herr Grossman (3), the conclusions above referred to would seem to be still soundly enough established.

It is not in my power to show anything in connection with my cases that will throw any light upon the rights of the spasm theory of Krause, or upon that of Semon as stated above. Perhaps, however, if I can manage at some future date to obtain a *post mortem* examination upon this case, and to observe its progress from time to time, up to that date, something may be brought to light that will be of service. So far as we have gone, however, we have certainly here a primary purely abductor paralysis, which continued stationary (laryngeally speaking) for over three years, thus seemingly confirming the statement that any lesion which affects the motor fibres of the larynx tends to involve the abductor fibres first. On the other hand, the conjoined disorders of the other nerve centres point strongly to a bulbar origin for this paralysis.

The following opinions would tend to favor the view that the causal condition in this case is tabes: McBride (2), after enumerating some twelve different conditions, in which double abductor paralysis may arise, goes on to say that when it is met with as a comparatively stationary condition locomotor ataxia or the cerebro-spinal affections are the probable cause. Lennox Brown (4) considers that "it is essentially the product of tabes," but when "it is due to disseminated sclerosis, or progressive atrophy, there is a tendency towards complete recurrent paralysis." The tendency here mentioned has not been present in my case so far, the cadaveric position not having been assumed by the cords. On the other hand, Bosworth (5) seems to consider that the blood poison in syphilis is productive of a local ankylosis of the crico-arytenoid joint with fixation of the cords in the mid-line. The history in this case points undoubtedly to syphilis, but I cannot look upon the crico-arytenoid joint as to blame for the position of the cords. Again, we are informed by Lennox Brown that where bilateral paralysis arises from a central, or peripheral cause,

the commoner condition is one of incomplete abduction of one cord, and of complete abduction of the other. Repeated observations have failed to bring this out in my own case, unless the more marked yielding of the right cord in expiration, referred to above, is in evidence.

In discussing the operative treatment of this case, in my opinion there is very little to be said in favor of either intubation or excision of the vocal cords. The former can surely only be a temporary measure at best, used to avert the sudden death which has occurred in some of these cases, and manifestly intubation would in my first case soon have required to be followed by tracheotomy. The operation of excision of the vocal cords, depriving the patient as it does of all power of speech, and condemning a man to eternal silence, is surely not to be weighed in the balance with the trifling discomfort of the constant wearing of a tracheotomy tube. The external part of the tube can easily be concealed, especially if the low operation is done, and the size of the tube selected should always be small enough to allow of the free passage of air along its sides through the larynx itself.

Resection of the recurrent laryngeal nerves, as advised by Geronzi (8) may be justified if the causal disease is steadily progressive, as by this means the so-called cadaveric position of the cords will be attained and respiration made safe and easy, but the surgeon necessarily must hesitate to make use of this operation where there is any prospect at all of recovery.

In this instance the Semon's (7) indication for early tracheotomy, namely, "when the objective widening of the glottis cannot be attained by treatment within a short time," was certainly present.

With regard to the medication, as both iodide of potassium and arsenic were used, it is impossible to determine to which credit is due, but it is well to remember that Gower states emphatically that anti-syphilitic remedies are absolutely useless in the treatment of tabes.

The Faradic current advised by Newcombe (6) was not employed.

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THE KING'S ILLNESS.

THE "LANCET'S" COMMENTS.

The solemn and magnificent rite at Westminster Abbey which was to set the symbol of sovereignty over a vast empire upon the brow of one whose career as Heir Apparent had fully qualified him for the higher dignity and responsibility of kingship cannot, alas, at present be performed, for the central figure in the ritual lies upon a grievous bed of sickness. The deep anxiety of his subjects in the critical position in which their ruler is now placed is marked on every face. He has convinced his people of his zeal for their welfare and of his ability worthily to uphold the traditions of the throne. Throughout his life he has not only performed with exactness and willingness the duties that came in his way as the natural consequence of his position, but he has sought work and done it in many directions, for the good of those whom he was to reign over. This is known to all, and as we acknowledge the influence of the powerful and practical sympathy which has ever been displayed by His Majesty with sickness and suffering, our hearts go out to him on his bed of pain. We need hardly remind our readers of such recent incidents as his presiding at Marlborough House over the foundation of the National Association for the Prevention of Consumption in July, 1898, or of the keen interest which he has evinced in the investigation into the causes and possible prevention of the dreaded scourge of cancer. In such matters as these his has not been the perfunctory intervention of an exalted personage; his grasp of the subject has been real and his action judicious and effective. He has acted obviously upon deeply moved feelings and we may be sure that in his turn, now that he has been struck down by illness, he is receiving from his people no mere loyalty of lip-service, but the truest and most affectionate sympathy.

King Edward's fellow-invalids of all sorts and conditions have particular reason to bless his name and to pray earnestly for him in his hour of trouble. In 1897 Her Majesty Queen Victoria celebrated her Diamond Jubilee, when her eldest son found himself called upon to assist the decision of her subjects as to how they might best commemorate the occasion. On the sixth of February the newspapers contained a letter signed by His Royal Highness, which inaugurated the Prince of Wales' Hospital Fund for London. King Edward in that letter exhibited the warm-hearted feeling for the needs of his poor subjects, the appreciation of the demands of the occasion, and the business-like grasp of detail that have always been prominent in his actions and utterances. He showed that he knew well that the fittest object on earth for assistance of every sort—ungrudging, open-handed and immediate—is the sick man whose purse cannot command adequate medical attention,

suitable diet, or a proper environment. By his prompt recognition that the sick poor of the metropolis constituted a class with paramount claims upon him, as the figurehead of the kingdom, he proved himself to be at the same time observant, practical, and tender-hearted. It is not only, moreover, with his more conspicuous actions that the medical profession associates the zeal of King Edward in the cause of the sick and the suffering. Over and above aid given in the raising of funds on behalf of individual hospitals or by ready participation in the opening ceremonies that inaugurate new buildings, new wings and new wards,—besides all these, there have been acts of kindness and individual sympathy that have won hearts even more completely because fewer have known of them. There have been visits to hospitals without ceremonial accompaniment, informal inspection of organization and detail, kind words spontaneously spoken but ever remembered by those whose claim upon royal attention lay only in the fact that they were poor and in pain. Instances of unpretending kindness such as these show that amid the conventional surroundings of royalty, the King, and here we should include also the Queen of this great realm, are endowed with a human sympathy that holds nothing human alien to it. To the sweet lady whose smile has inspired and whose voice has cheered so many of her humble subjects the heart of those subjects goes out to-day in her sore trial.

The king is no stranger to illness and suffering. The deep anxiety felt by this country when he lay upon a bed of sickness more than 30 years ago will still be remembered, as well as the gloom that overshadowed the British dominions when the grave relapse of Dec. 8th, 1871, was made known. Eagerly every symptom of recovery was noted in the constantly issued bulletins throughout the world, and great was the rejoicing that celebrated the Prince of Wales' restoration to health. The country must be prepared to go through a similar period of sickening apprehension. We do not belittle the gravity of His Majesty's condition when we urge that it is quite a common one, relieved daily in our hospitals by just such an operation as has been successfully performed upon him; nor do we magnify its gravity when we say that until convalescence is established every symptom must be watched with the deepest solicitude. In the circumstances Sir Frederick Treves' address on appendicitis, which is published in our columns this week, will have an absorbing interest for our readers. All our surgical records serve to show that such apprehension of evil sequelæ, cannot be justified. In God's hand is the issue.

But to one point in the first bulletin we must draw attention. It is evident that the King fought with the utmost gallantry to

fulfil his great engagement, an engagement the constitutional importance of which is enhanced by its sanctity. Indeed, it is possible that had he not resisted so strenuously the idea of a postponement of the Coronation ceremonies he might have escaped the ordeal of the surgeon's knife. The ceremonies of the Coronation could hardly fail to prove exhausting, even to a vigorous physique. Yet, despite his pain, the King had braced himself to go through with them at all cost, until, fortunately in time to avert a tragedy, nature proved too strong for him. Men of our nation cannot fail to recognize and admire the courage which fought so nearly to the end and despite all risks that the people might not be disappointed. We all love a brave man, and when His Majesty King Edward VII. resumes his place among his people he will find them moved to the depths of their heart in gratitude for his restoration to them.—(Major portion of Editorial, *Lancet*, June 28.)

CRITICISM FROM PHILADELPHIA.

That the King was ill for several days before the operation was well known, but the public seems not to have suspected that he had appendicitis. His treatment and mode of life during those several days certainly did not indicate it. He was allowed a measure of liberty which is not usually accorded to a patient with this disease. A man with acute appendicitis, or "perityphlitis," is not in a fit condition to be crowned king. The medical world will doubtless be wondering how the evil hour was put off so long, and why in the meantime the sick man was pushed along through the preliminaries for the great state ceremonial.

Whatever the issue may be, the case of King Edward will be looked upon as an awful example. Whatever the responsibility for delay may be, and wherever it may rest, the case will be an object-lesson to the world—not soon to be forgotten—of the dreadful disadvantages that come from delay.

We believe that this responsibility does not rest entirely upon the distinguished men who have had the King's case in charge. Statements in the press, which seem to be authentic, indicate that the royal patient himself opposed the operation until the alternative was bluntly stated to him—the knife or death. The circumstances were altogether extraordinary. A nation was waiting for the consummation of a brilliant and exceptional ceremony. There was every temptation to delay and to take chances. The King himself took the chances, and his surgeons should be exempt.

The object lesson to the world will have this value—that it will teach how little is to be gained by delay and how great a peril is incurred by it. We have recognized for a long time

that the teaching and practice in this country on the subject of appendicitis were in advance of those that prevail in Britain. The conservatism there has been extreme. The practice has verged upon timidity. The American rule, we believe, is the better one; and, whether the King lives or dies, this fact will remain proven. If the King lives, it will only be by passing through a great peril which in almost all similar cases can be averted by prompt operation.—*Philadelphia Medical Journal*.

KIND WORDS FROM WASHINGTON.

While most of the extracts and abstracts published in this issue are taken from medical journals, we offer no apology for inserting the following article which appeared in the *Washington Post*, and which we copy from the *Literary Digest*, July 5th:

"Edward has been a noble and high-minded gentleman always. During the long years—almost half a century—of his apprenticeship he has set the example of a genuine chivalry of conduct. With him '*noblesse oblige*' has been more than a mere phrase; it has been a law. An ideal prince, a man no less than a monarch, he has drawn to him not only the reverence but the friendship and affection of his subjects. He has had his intimates like any private citizen; he has mingled freely and unaffectedly with them. The people have known him at close quarters. His virtues and weaknesses have been open to inspection. But from first to last, throughout the long period, of his 'apparentcy,' he has won admirers—made new ties and strengthened old ones—and all this by force of his personal and private qualities. He is beloved and honored, not so much because he is King as because he is a kind, considerate brave and honorable gentleman. There is, beyond all this, something peculiarly pathetic in the untoward consummation which now confronts us. He might have been crowned long months ago had he so willed it. Of course, the coronation would have been a form and nothing more. He was King and he reigned without the celebrations and the mummery which were to have taken place to-morrow. But in reverence for his august mother, whose heart had been broken and whose death hastened by the appalling tragedy in South Africa, he had postponed his coronation until that frightful blot could be erased from England's 'scutcheon. For him, as for Victoria, the bloodshed, the rapine, and the desolation involved in the war upon the Orange and the Transvaal republics poisoned his peace of mind and turned to dust upon his lips the glory of his accession to the greatest throne in Europe. He wished his diadem to be the crown of peace. But heaven has willed it that this kind heart should be denied. There he lies—a poor mortal, sorely stricken and brought low. All the crowns and thrones and sceptres in the world cannot help him now. His chance is the same as any

beggar in the street. His has been a fine and sweet life, nevertheless. His is a stout and gentle heart. We can pray for him as lovingly as though he were a neighbor. What more, in his extremity, could befall the proudest autocrat in all the world?"

CRITICISM FROM BOSTON.

Many American surgeons of the largest experience believe that all cases of appendicitis should be operated upon by the immediate and invariable removal of the appendix. In a case of localized abscess they would never content themselves with simple drainage. Simple drainage in appendicular abscess of long standing and of firm adhesions seems to us, however, the safer and the more reasonable procedure, removal of the appendix being reserved until after the restoration to perfect health. We therefore heartily approve the choice of operation made by the surgeons of the King.

We know but few of the facts in the King's case. We are, however, sure that in a mild attack of undoubted appendicitis which was progressing favorably in a man of sixty, with large abdomen and thick abdominal wall, of unfavorable general condition, we should insist upon the most conservative course of treatment. Even if we knew beforehand that such a patient had an appendix which was to certain degree pathological, we should hesitate a long time before subjecting him to a prophylactic operation. In a case like that of King Edward's, after recovery from the palliative operation, we should long hesitate before advising appendectomy, even if everything was as favorable for that operation as circumstances would admit, hoping either that no occasion for surgical intervention would arise, or, if it should, that the appendix might then be removed in the very beginning of the attack.

It must, we think, be admitted that under no course of treatment, except removal of the appendix in the very beginning, could this particular case have pursued a more favorable course. Indeed, an operation in the increasing stage, when the adhesions were fragile, could hardly have failed to contaminate extensively the peritoneal cavity. Infections of an abdominal cavity loaded with omental and mesenteric fat, in a patient past middle life and of impaired resistance, is, in our opinion, a calamity to be avoided whenever possible, and especially when the disease, constitutionally and locally, is progressing favorably. From all that we can learn of King Edward's case, an operation, had the diagnosis of appendicitis been clear, would have been indicated in the very beginning of the attack, even if that beginning was a mild one; or at any time during the attack, if the symptoms were severe; or when, after progressing favorably, they showed the least unfavorable sign; and, finally, whenever there was positive evidence of a localized abscess,

We do not feel sure that, had he recovered from this attack without operation, the so-called *interval operation* would later have become justifiable without renewed evidence of persistent and threatening disease.

We wish again to congratulate the English people and their sovereign upon the successful efforts of their physicians and surgeons in this most trying case.—*Editorial Boston Medical and Surgical Journal.*

THE RELATIVE MORTALITY UNDER OPERATIONS AT DIFFERENT STAGES OF THE DISEASE.

BY ALEXANDER H. FERGUSON, M.D., CHICAGO, ILL.,
Professor of Clinical Surgery, College of Physicians and Surgeons, etc.

The unfavorable features of the King's case are his mental forebodings, age, reported state of his constitution, and late operation.

Judging from even the meagre data at hand, of operative findings by Treves, and of the post-operative conditions, I am inclined to give a grave prognosis. If he were a beggar instead of a King, I judge that an early operation, within twenty-four hours of onset of the attack, as is our rule in Chicago, would probably have been done and the disease have been thereby promptly robbed of its dangers.

The surgeon whose fingers are in the abscess cavity is the best judge of whether the appendix should be removed then or not. When local conditions are favorable and the patient is behaving well under the anesthetic, the appendix should be removed. I do not think it wise to temporize; once the diagnosis is made, an operation is the only rational and safe treatment for appendicitis. Whereas clinical manifestations do not interpret truly the anatomical changes, or the virulency of the infection, why should we wait? The King's case is an object lesson to the world on appendicitis. It must be remembered that in his case there were extraordinary national and international environments and considerations which no doubt naturally influenced him and his attendants to favor the postponement of surgical aid, and in the meantime to avoid it if possible. It is evident that at the beginning of the attack and for a few days thereafter the symptoms and signs were not alarming, and herein lies the deception in appendicitis. This we all know. The symptoms improve, and then light up again as they did with the King.

It may now be said that His Majesty has survived the immediate effects of the operation, and if no complications

arise to interfere with his resisting powers or to check his normal elimination, the prognosis is fair.

In their trying positions and treatment of their distinguished patient the surgeons have my sympathy and approval.—*Abstract New York Medical Journal Telegraphed, June 26th.*

THE CHANCES OF RECOVERY DEPENDENT UPON THE CHARACTER OF THE ABSCESS.

BY JOHN B. MURPHY, M.D., CHICAGO, ILL.,
Professor of Clinical Surgery, Rush Medical College.

The official bulletins are very vague and indefinite, as the doctors do not state whether the perityphlitic abscess was due to appendicitis, carcinoma, or perforating ulcer. If it is an appendiceal perityphlitis, opened and drained with no attempt at removal of the appendix, his chances of recovery, allowing for his age and mode of living, should be 97 per cent. Even if there is gangrene of a small area of the cecum from a peri-appendiceal abscess, his chances of recovery should be good unless the infection is very virulent. One would infer from the mild symptoms on the day previous to the operation that it is not virulent. If the perityphlitic abscess is from a perforating ulcer of the cecum, the prognosis is more grave, for these perforating ulcers are grave in themselves, particularly the tuberculous. If the perforation occurred from a malignant ulcer, his chances of recovery would be very meagre, as a resection of the caput coli would be demanded, and this is such a long and grave operation that he could scarcely withstand it, as it would involve an immediate risk of from forty to forty-three per cent. The assumption that the abscess is of appendiceal origin is the most logical, judging from the symptoms of pain and syncope on the fifth or sixth day preceding the operation, and there was every reason for his physicians withholding information from the public as long as possible. If the diagnosis of appendicitis had been made early, it is probable the operation would have been performed immediately, as the consensus of opinion of the American medical and surgical profession is that the immediate operation, *i.e.*, operation within the first twenty-four hours after the onset of symptoms, gives the best results and subjects the patient to the least risk. There is a unanimity of opinion in the profession that no one, no matter how familiar with the disease, is able to predict from the early symptoms what will be the subsequent course of the disease. It is therefore incumbent upon the profession to operate early to avoid the probability of later and most dangerous pathologic conditions.—*Abstract New York Medical Journal Telegraphed, June 26th.*

THE CASE OF THE KING IN THE LIGHT OF HIS PREVIOUS
MEDICAL HISTORY.

By ROBERT F. WEIR, M.D.,
President of the New York Academy of Medicine.

Perityphlitis or, as it is known here, appendicitis, can be divided in its results into 3 classes: (1) Those where the operation is done within 36 hours (which is the period of election), after the inception of the disease, where the mortality is under 3 per cent.; (2) where done from that time to the fifth day where the mortality is from 4 per cent. to 15 per cent., and the most critical judgment has to be exercised by the surgeon in respect to the time of operation; and (3) those operated on after the period named, when the disease often limits itself to a circumscribed abscess, where the mortality after operation again markedly diminishes.

In the present instance which occupies the attention of the whole world there is a factor that has not been alluded to. In an ordinary case after the existence of the disease of a week or thereabouts, with the formation of an abscess, there would be a very favorable prognosis as above detailed, but it is well known in the inner medical circles in London that King Edward has been the subject for several years past of diabetes. It was this complication that decided, some time ago, when he sustained a fracture of the patella, the abstention from an operative treatment, and that it was advisable to resort to the old method of immobilization of the limb, with its risks of imperfect union, rather than to take the chances of the modern and better method of suturing the broken ends of the bone together after an incision.—Abstract *New York Medical Journal*, Written, June 26th.

THE OPERATION MASTERLY IN ITS SIMPLICITY AND
CORRECTNESS.

By ROBERT ABBE, M.D., NEW YORK,
Surgeon to St. Luke's Hospital.

It sounds strange to the ears of American surgeons to have the cable send back the word "perityphlitis" in describing the grave illness and momentous struggle of King Edward. It is like an echo of the early studies and battles that were waged in New York twenty years ago, when that inadequate and unsatisfactory word was displaced by "appendicitis."

Accumulating experience shows that not once in hundreds of operations in this region does the surgeon find any cause for perityphlitis, or inflammation around that part of the intestine, except as a result of a diseased appendix.

The extreme importance of this organ, and the gravity of its diseased condition, have been recognized and studied nowhere in the world as much as in America—and its treatment perfected by a score of able surgeons.

In England no surgeon has kept more nearly in touch with advanced American work than Sir Frederick Treves, personally an intimate friend of some of our surgeons, and known and admired by all through his writings and visits to America. No one can doubt that he has suffered the greatest anxiety in being forced to delay operating, owing to circumstances over which he had no control—until the abscess matured about the diseased appendix.

If reports are correct, that he simply opened and drained the abscess, using rubber tube and gauze, and desisted from search for the appendix, his action was masterly in its simplicity and correctness. A more ardent, enthusiastic, or fearless operator, might have pursued the matter to its finish and secured an appendix as a trophy, but sacrificed his patient. Science and the people may be congratulated that so conservative a surgeon was in control.

The vexed question as to searching out the appendix in such cases, has been one of many in this great problem—and to-day it stands answered as follows. It does no harm for the time to leave it in the abscess wall, so long as the drainage outward is free. The risk of damage by tearing it out when deeply buried, as often is the case, is too great to be excused when life is at stake. In four out of five cases the appendix has ended its own existence by the explosion, as it were, which produced the abscess, and one frequently finds a ragged remnant of the organ hanging free in the abscess. The age factor in a patient of sixty years, so well cared for as the King, is not so much to be dreaded as the public fears.

The greater lesson to be learned from exhaustive study of the appendices taken out after one or more attacks, and during quiescence, is that an appendix once diseased is always diseased and a perpetual menace to its owner.

The King's appendix must have been diseased for many years, whether it gave evidence of it or not.

Insurance companies now debar the victim of one attack from insurance for two years—and of two or more attacks, until the appendix is out. What better argument of the gravity of the subject?—Abstract *New York Medical Journal*, Written, June 26th.

THE CASE OF KING EDWARD.

By ROBERT T. MORRIS, M.D., New York.

Professor of Surgery, New York Post-Graduate Medical School and Hospital.

King Edward's case appears to be one of appendicitis of a rather common type, following his exposure to chilling winds last week, with consequent engorgement of mucous surfaces. Bacterial infection progressed to the point of abscess formation about the cecum before it was determined by the medical advisers that the King's life depended upon the performance of some emergency operation. Apparently wise counsel prevailed, and the very conservative procedure of simple evacuation of the abscess was chosen. The cable reports lead us to believe that the infective process had been very well cared for by the peritoneum, and that the area of infection was walled-in by the phagocytes. In some cases of appendicitis with the complication of perityphlitis and abscess formation, the appendix is completely destroyed, and the patient escapes the danger of further infection at that point. In other cases only a part of the appendix is destroyed, and sometimes it is left almost intact excepting for scar strictures, and local peritoneal adhesions. In both of the latter cases the patient may anticipate recurrence of appendix infection at some time in the future. Aside from further infective processes, the adhesion complications may become sufficiently important to require operation for their relief at any time during the life of a patient who has suffered such a severe peritoneal inflammation. In addition to new infection and adhesion complications, one must expect also the development of post-operative ventral hernia at the site of an abdominal wound that has been left open for drainage. All of these things could have been avoided by early operation in advance of abscess formation, but we readily comprehend the kind of responsibility that was placed upon the King's medical advisers at just this critical time, and we must believe that they have acquitted themselves in a manner that is most acceptable to responsible medical authorities the world over.

In King Edward's case we are gratified to observe that the anesthetist, the surgeons, and the physicians are all men who have international reputations in their respective fields of work. This is apparently the result of some system in England that does not obtain in this country, where it is rather the exception for a man of great consequence to have well chosen medical advisers, excepting as a matter of accident, and while we are apt to think that European methods in the management of appendicitis are far from being as successful as those

employed in America, there seems to be the compensating advantage that in England a method is adopted for obtaining the services of the best authorities on an occasion of great public importance.—Abstract *New York Medical Journal*, Written, June 26th.

THE SURGEONS AND PHYSICIANS IN ATTENDANCE.

THE RIGHT HONORABLE LORD LISTER.

No man of the empire, no man in the world, has ever received a more cordial welcome from Canadians than Lord Lister. The members of the medical profession of this Dominion were especially enthusiastic over his visit to Canada in 1897. We recognized the fact that we had amongst us the greatest surgeon of this century—the greatest surgeon of all time. We all admire him for the great work he has done for the human race; we all love him for his kindly manner; we all respect him as a hero among men. The whole world is paying homage to Lister for his greatness; and yet he, who has received the highest honors ever bestowed on any man of science, is one of the most modest and unpretentious men living.

SHORT HISTORY OF LORD LISTER'S LIFE.

Lord Lister was born in Essex county, England, in 1827. As a youth he lived in a good atmosphere with his father, Joseph Jackson Lister, who was a Quaker, and at the same time a man endowed with a great love of science. He received the degree of B.A. from the University of London in 1847, and the degree of M.B. from the same university in 1852. During his student life he worked faithfully in the laboratories, carrying out original investigations in physiology and pathology. He was also active in the hospital wards, and was one of the first house surgeons under the late Sir John Eric Erichsen.

After graduating he went to Edinburgh, where he continued his researches in physiology and pathology, devoting most of his time to pathology. While in Edinburgh he became closely associated with the late Professor Syme. In a paper by Dr. Stewart, of Halifax, we learn something about the great importance of Lister's researches for several years in pathology. His results were published in the Transactions of the Royal Society for 1858. He was appointed Regius Professor of Surgery in the University of Glasgow in 1860, and did much of his earlier work in connection with antiseptic surgery in the Royal Infirmary of that city. His work in Glasgow and Edinburgh made him famous, and in the latter part of 1876 he

was induced to go to London to take a position on the staff of King's College Hospital. He entered on his duties there with the distinct understanding that he was to have complete seclusion of his own wards, with a house surgeon, and nurses completely under his control.

At this important time in his career he encountered considerable opposition. Many of the surgeons of London endeavored to belittle his results so far as they were published. Many of those who criticized his methods had no clear conception of the principles underlying his system of treatment. The spray was unduly exalted to such an extent that its use was considered by many to be Listerism, while it was, in reality, only one, and the least important, feature of his treatment. At the same time many of the continental surgeons, especially those of Germany, understood Lister and his methods better than the majority of his confrères in Great Britain. Some prominent surgeons went so far as to state that he suppressed statistics because "he had none that he would not be ashamed to produce." The following is an example of some of the unpleasant things insinuated: "The publication of isolated cases, however good, proves nothing, whereas the withholding of the whole suggests much." These were the words of Mr. Bryant, of London, and were endorsed by Mr. Savory (afterwards Sir William Savory) who quoted them with approbation in his address on surgery, at the British Medical Association meeting at Cork in August, 1878.

While referring to such adverse criticisms, we will quote the following as an example of a very friendly opinion concerning Lister and his methods, from the address of Mr. John Wood, F.R.S., during the discussion of Sir William MacCormac's paper on antiseptic surgery before the South London Division of the Metropolitan Counties Branch of the British Medical Association, December, 1879: "While thus defining the limits of my agreement with my esteemed colleague, Professor Lister, I must take this opportunity of congratulating him sincerely upon the possession of those advantages which have made him so powerful an advocate of antiseptic surgery, and will give him so high a niche in the temple of fame; upon the professional position, which has given him the authority; upon the gifts of fortune which gave him the means; upon the gifts of nature, which gave him, in happy combination,

"The patient thought, the steadfast will,
Resolve and foresight, strength and skill,"

which he has laid upon the altar of suffering humanity."

Lister continued to work with earnestness and zeal, and gradually, but surely, gained ground until he finally triumphed to such an extent that he practically overcame all opposition.

His uniform kindness, and courtesy towards his opponents, did much to secure this happy condition of things. He was able to simplify his appliances in a few years, especially when, in 1885 or 1886, he decided to disregard the influence of atmospheric dust on open wounds, and discarded his spray apparatus. His improvements in these respects did much to popularize his methods in various parts of the world.

Lord Lister is one of our best specimens of the modern, cultured scientific surgeon. Since boyhood he has been diligently searching after truth, and helping others in the same direction. Thoughtful physicians and surgeons, obstetricians, general practitioners, and specialists in all civilized countries have learned something—generally much—from this great and good man. Never in the history of the world has any one man taught so much, and done so much to ennoble our profession. He it was, or such as he, that went to Drumtochty, and performed the operation which saved the life of Tammas Mitchell's wife. It is rather pleasant to have a picture in one's mind of Lister and MacLure driving together through the flood, in Drumsheugh's dog cart, to see Annie Mitchell, "whose life was slowly ebbing away." It is easy to imagine how Lister would tear into fragments poor kindly MacLure's cheque, and how he would hold out his hand as the train was starting, and say: "Give us another shake of your hand, MacLure; I am proud to have met you; you are an honor to our profession. Mind the antiseptic dressings."

Many are the honors that have been literally heaped upon Lister at home and abroad. Great was the delight of the medical world when he was elevated to the Peerage on account of the great services he has rendered mankind by his practical researches, and his clinical work in aseptic and antiseptic surgery. Great was our regret when we understood he was to relinquish the name Lister—the name we had learned to love so well—and become Lord Kinnear. Great was our pleasure when we discovered our mistake, and found that we were not in any sense to lose our Lister, whom we now know as the Right Honorable, the Lord Lister. Many are the ovations he has received outside of Great Britain. One of the most memorable was that which he received at the great International Medical Congress in Berlin, August, 1890. There were seven thousand persons in the Circus Renz at the opening ceremony. When Professor Virchow, attended by a brilliant company of ministers, and other distinguished men, ascended the tribune, applause burst forth again and again as various celebrities came into view; but it was Lister who was met with the most prolonged applause. Again at the first general meeting, when he stood up to deliver his address on Antiseptic

Surgery, he was greeted with applause so long continued that he had to wait some time before he could make himself heard.

Lord Lister's distinguished confrère, Sir Frederick Treves, in a paper on "The Progress of Surgery," during the Victorian Era, published in the *Practitioner* (English) in 1897, speaks as follows about Lister and his work :

"The great feature in Victorian surgery has, it is needless to say, been the introduction of the antiseptic method, and the great name which stands out above all others in the array of Victorian surgeons is the name of Lister.

"Lister created anew the ancient art of healing; he made a reality of the hope which had for all time sustained the surgeon's endeavors; he removed the impenetrable cloud which had stood for centuries between great principles and successful practice, and he rendered possible a treatment which had hitherto been but the vision of the dreamer. The nature of his discovery—like that of most great movements—was splendid in its simplicity and magnificent in its littleness. To the surgeon's craft it was but 'the one thing needful.' With it came the promise of a wondrous future; without it was the hopelessness of an impotent past. It might well have been in Browning's mind when he wrote—

'Oh! the little more and how much it is!
And the little less and what worlds away!'"

—*Canadian Practitioner, Special Lister Number, Sept. 1897.*

SIR FREDERICK TREVES.

Sir Frederick Treves was born in 1853, and was educated at the Merchant Taylor's school, and at the London Hospital. He became a licentiate of the London Society of Apothecaries in 1874, a member of the Royal College of Surgeons of England in 1875, and a Fellow in 1878. He became in due course surgeon to and lecturer on surgery at the London Hospital, and has the distinction of having been the youngest man that ever held a double professorship at the Royal College of Surgeons of England, having been appointed Wilson Professor of Pathology in 1881, and later, Hunterian professor of anatomy. He was surgeon extraordinary to Queen Victoria, and is sergeant-surgeon to the King, and surgeon in ordinary to the Prince of Wales. As consulting surgeon to the South African Field Force with the Ladysmith Relief Column he rendered signal services to the soldiers and the empire, for which service he received the C. B. and the Knight Commandership of the

Victorian Order. His recent promotion to a baronetcy in the coronation list of honors comes at a singularly apposite time. He has done more work on intestinal surgery possibly than any other British surgeon.

SIR FRANCIS LAKING.

Sir Francis Laking took his first diploma as Licentiate of the London Society of Apothecaries, in 1869, being an alumnus of St. George's Hospital, London. In 1868 he became a licentiate, and in 1872 a member of the Royal College of Physicians of London. In 1869 he took the degree of M.D. at Heidelberg. He was surgeon apothecary to Queen Victoria and apothecary in ordinary to her household, as also to those of H. R. H. the late Duke of Edinburgh (reigning Duke of Saxe Cobourg Gotha), and the Prince of Wales. When the latter became King Edward VII. Sir Francis Laking became his physician in ordinary and surgeon apothecary in ordinary. He is apothecary in ordinary also to the King's household, to the Duke of Cornwall and York (the present Prince of Wales) and to H. R. H. the Duke of Connaught. He is a Knight Commander of the Victorian order.

SIR THOMAS BARLOW.

Sir Thomas Barlow became a member of the Royal College of Surgeons of England in 1871. In 1867 he became B.Sc. at London University, M.B. and B.S. with double honors in 1873, and M.D. in 1874. In the latter year he became a member, and in 1880 a Fellow of the Royal College of Physicians of London. He is physician to His Majesty's household, and late physician extraordinary to Queen Victoria; professor of clinical medicine at University College, London, and examiner in the practice of physic to the Victoria University, Manchester, Durham University, and the Conjoint Examining Board of the Royal College of Physicians and Surgeons. He is a Knight Commander of the Victorian order.

SIR THOMAS SMITH.

Sir Thomas Smith became a Fellow of the Royal College of Surgeons of England in 1858. He is consulting surgeon to St. Bartholomew's Hospital, and Honorary Sergeant-Surgeon to the King. He has been Vice-President of the Royal College of Surgeons and examiner in surgery at the Royal College of Physicians of London. He is a Knight Commander of the Victorian order.—*New York Medical Journal*.

THE CAVENDISH LECTURE ON SOME PHASES OF
INFLAMMATION OF THE APPENDIX.*

BY SIR FREDERICK TREVES, K.C.V.O., C.B., F.R.C.S.,
Sergeant-Surgeon to His Majesty the King; Surgeon in Ordinary to His Royal Highness the
Prince of Wales; Consulting Surgeon to the London Hospital.

THE APPEARING OF APPENDICITIS.

Mr. President and Gentlemen,—Among those circumstances which are remarkable in the history of medicine in the closing years of the nineteenth century, few are more curious than the almost abrupt appearance of the disease now known as appendicitis.

I think that the writing which did more than any other to force upon the medical world a recognition of the true pathology of pericecal peritonitis was the monograph of Fitz, published in 1886.

It may be claimed for this communication that it gave the first precise, detailed, and fully demonstrated account of the disease now known as appendicitis.

THE PART PLAYED BY THE PERITONEUM.

In dealing with the pathology of appendicitis it is desirable to appreciate clearly that the clinical phenomena, which are familiar under the name of "an attack of appendicitis," are due to peritonitis in the region of that organ.

The disease is essentially a variety of peritonitis. Its manifestations, its effects, and its possibilities are those only of peritonitis. Whatever may be the antecedent condition, an attack of appendicitis is not in evidence, and, indeed, does not exist until the peritoneum is implicated.

It is needless to say that this peritonitis is induced by inflammatory changes in the appendix itself; and it was to these primary changes, which are antecedent to an attack, that Fitz first proposed to give the name of "appendicitis."

APPENDICITIS WITHOUT SYMPTOMS.

It is interesting to inquire what symptoms, if any, belong to pure appendicitis—to that uncomplicated inflammation of the appendage which precedes the familiar manifestations of an attack, and which are, in other words, preliminary to the peritonitis.

On this subject, three propositions may, I think, be made:

1. Extensive inflammation of the appendix, leading to great thickening of its walls, to widespread ulceration of its mucous

* Portion of address delivered before the West London Medico-Chirurgical Society on June 20th, 1902.

membrane, and to some degree even of stenosis, may exist without producing symptoms of any kind. This is illustrated by those cases in which attacks of appendicitis appear without a single preliminary abdominal symptom, and also by those forms of recurring appendicitis in which the patient is entirely free from the least consciousness of trouble in the right iliac fossa during the interval between the attacks. Once in removing a simple ovarian cyst I encountered and excised a much diseased appendix of which neither the patient nor her doctor had had any suspicion, and which had caused the former no appreciable inconvenience. There is a disposition on the part of some writers to assume that no morbid changes can take place in the appendix unless they be accompanied by the phenomena of appendicitis in the sense in which that term is usually employed. Thus Mr. Lockwood, in his excellent work upon the pathology of appendicitis, describes an instance in which "the mucosa of the appendix was destroyed and its lumen obliterated by one attack of appendicitis." The organ was certainly found in the condition named in a patient who had had but one attack of perityphlitis, but it is needless to say that the destruction of the mucosa might have been complete weeks and months before the solitary attack set in, since such process of destruction need not be attended by clinical manifestations of any kind. The onset of the attack indicated not the commencement of the destruction of the mucous lining, but the moment at which the peritoneum became involved in the inflammation.

2. In the second place an acute attack of appendicitis may be preceded by occasions on which the patient has minor seizures of pain in the cecal district which are of short duration and irregular appearance. Such an individual will complain of an occasional sharp pain in the iliac region which may "double him up" and, for a moment, make him feel sick and faint. The peculiarly sensitive may actually vomit. There may be some tenderness manifest. There is no rise of temperature and no notable tympanites, and the episode ends in an hour or so, leaving behind an aching or a vague sense of weakness or discomfort in the region of the right groin, and often a troublesome constipation. These little disturbances—known sometimes by the quite unsuitable and indeed erroneous title of "appendicular colic"—depend upon changes in the appendix which are short of actual implication of the peritoneum. In a few it is possible that there is a minute infection of the serous membrane and an infinitesimal peritonitis. The most severe represent an outbreak of appendicitis in miniature. These little attacks may become so persistent as to weary the patient and impair his health; and on several occasions I have removed the appendage, although there has never been a definite "attack

of appendicitis." The organ on examination has now and then revealed a degree of inflammation and ulceration of its lumen which has been actually in excess of that met with in some cases in which there have been definite attacks of the accepted type. Usually the appendix is found to be of normal aspect, but to have its walls stiff, thickened, and ulcerated. Concretions are common, and in an instance or so I have found the organ adherent.

3. In a third series of examples the patient has an abiding trouble in the right iliac fossa which may continue for months, and may or may not be associated with acknowledged attacks of appendicitis. In examples in which there are no such attacks the condition merits the title of true appendicitis because there can be little doubt but that the symptoms are due to abiding gross changes in the vermiform process which have never spread in an abrupt manner to the peritoneum and so have never produced "an attack of appendicitis." These patients are never well. They are the subjects of unending digestive disturbances, of colics, of constipation, and of occasional severe pains. There is often tenderness in the right iliac fossa with a sense of weight or dragging, pain in the right thigh, and a disposition to walk with the body bent. There need be no rise of temperature.

The condition of the appendix in these cases will vary greatly. It may appear to be normal when viewed externally and to be yet inflamed as to its inner coats, it may contain a concretion, may be twisted or bent upon itself, or clubbed at its extremity. In several of these cases I have been surprised to find the little process full of pus. I cannot avoid the distinct belief that in these and other examples of uncomplicated inflammation of the appendix any advance of symptoms from mere discomfort to acute pain implies an advance of the mischief from the inner coats to the peritoneal surface.

Before leaving this subject I imagine it will be generally allowed that it is not possible (except in gross instances) to predict the state in which the appendix will be found from a mere study of the clinical manifestations. Of the futility of such prophecy I have had many examples.

THE CLASSIFICATION OF APPENDICITIS.

On the subject of the classification of appendicitis from the pathological standpoint, I think very little is to be gained by the elaborate divisions and subdivisions which are affected by many in dealing with this matter.

We are at the present day fairly well informed as to the pathology of inflammation of the intestines and its consequences. The appendix is a portion of the intestinal canal, and it

possesses no exclusive pathology of its own. Like the rest of the bowel, its mucous membrane is liable to catarrh, but not to a peculiar catarrh. That catarrh may pass on to ulceration, and the consequences of that ulceration are the same in the appendix as they are in the rest of the intestine. The ulcer may perforate, and the usual results of perforation will follow. The peritonitis induced is in no way a peculiar peritonitis. It may lead to rapid septicemia or to adhesions of various kinds with possible deformity of the appendix, or it may leave no trace behind. The ulcer may heal and may then lead to stricture of the little process, just as it leads to stricture of the bowel. Both the tube and the intestine may give way behind the narrowed part.

The few peculiarities which can be claimed for the appendix are mainly these. It ends in a blind extremity. It favors the formation of concretions. It is liable to gross disturbances of its blood supply from torsion. Its utter destruction leaves no function impaired.

A PHANTOM APPENDIX.

On palpating the abdomen above the right iliac fossa in a patient suspected of appendicitis an elongated body can occasionally be felt which is often mistaken for a swollen appendix. The little tumor is pipe-like and is either vertical or is more usually placed obliquely. The oblique phantom is always found to be external to the vertical one. Over and over again the discovery has been announced of a diseased appendix lying vertically or obliquely in the iliac fossa. When the part is exposed by operation it may be usually safe to assert that the diseased organ will not be found to occupy the site of the elongated body. Indeed, experience induces a great suspicion of the existence of that diseased appendix which is said to be placed vertically or nearly so, and which is so readily felt.

This phantom is due without doubt to muscular contraction. This contraction is sometimes in the outer edge of the rectus muscle, sometimes in the fibres of the internal oblique or transversalis muscles.

It must be remembered that the bowel, the parietal muscles over it and the skin which again covers them are all supplied by the same nerve. Moreover the eleventh dorsal nerve lies just beneath Munro's point and is no doubt capable of being irritated by deep pressure in that region.

THE OPERATIVE TREATMENT OF APPENDICITIS.

Time will not permit the discussion of either the prophylactic treatment of this affection or of the medical management of a case during an acute outbreak. It will be impossible to attempt

more than a hasty review of the treatment by operation, and such review must naturally arrange itself under two headings—the question of surgical interference during an acute attack, on the one hand, and during the period of quiescence which has followed an attack, on the other.

A perusal of the literature of the subject makes the course which the surgeon should take by no means clear. A right estimate of the value of operation in appendicitis and of the right moment of its application is obscured by conflicting statements, by bewildering statistics, and by contradictory propaganda.

There is, indeed, so great a diversity of opinion among surgeons who are qualified to speak with authority that it is difficult to imagine a mediate line of action which will reconcile extremes and provide grounds for common acceptance. Profuse as are records of a kind, we still lack ample and reliable statistics of the general mortality of the disease, of the results of operation during an attack, and especially of the work of those surgeons who urge that the abdomen should be opened in all non-chronic cases as soon as the diagnosis has been made. The last-named operators would justly, in their turn, demand a full return of all cases in which the practice they observe had been ignored. This, again, is not forthcoming.

Hospital statistics are satisfactory only up to a certain point, since they of necessity deal with cases of the most severe type, the cases ill enough to be admitted into the wards. A *précis* of results derived from isolated examples in the various journals is not satisfactory, since it is human to record success and to show little eagerness to acknowledge failure. The best record which could be obtained would be based upon the experience of a number of medical men in large general practice, or upon the systematic records of an army during times of peace. Some general statistics on these lines have been forthcoming, but when the mortality shown has been low, it has been objected that the cases were not true instances of appendicitis, and when the mortality has been high it has been claimed that the slight cases had been omitted from the record.

As the subject is not yet ripe for dogmatic treatment I have ventured to express no more than the opinions which have been forced upon me by my own experience, with the full knowledge that such opinions are apt to be ill-founded.

OPERATION DURING AN ACUTE ATTACK.

The question of surgical treatment during an acute attack has led to greater differences in practice than has any other matter arising out of the treatment of this disease.

The extremes are represented by those on the one hand who

advise abdominal section as soon as the diagnosis is made, and by those on the other hand who would operate only on compulsion, and in the presence of either intensely acute symptoms or the evidence of pus.

The former place the necessity for operating in the same category with the need for interference in strangulated hernia, or perforated ulcer of the stomach, and are particular to claim that a case starting with trifling symptoms may end fatally.

The latter are occupied with the danger of operating during an attack, with the largeness of the proportion of cases which recover spontaneously, and with the evidence that the diseased appendix is most safely dealt with during the period of quiescence.

In the consideration of this vexed question I would venture to bring forward the following points:

1. In the advocacy of what may be termed indiscriminate operation it is misleading to use the expression "gangrene or rupture of the appendix," "perforation of the appendix," and "appendicitis with acute peritonitis," in exactly the same sense as the terms "gangrene or rupture of the bowel," "perforation of the stomach," and "acute peritonitis" are employed in association with urgent operation.

In every case of acute appendicitis of the accepted type there is acute peritonitis. Limited gangrene of the appendix may be recovered from without operation, and without the formation of an evident abscess, and the same may be said of limited perforation of the process. In a large proportion of examples of acute trouble in this organ there is a perforation, although it may be microscopic. I have found a concretion lying outside a ruptured appendix one month after recovery from an acute attack, the affected area having been isolated by adhesions.

I do not wish to minimize the gravity of these lesions, but merely to protest against a course of action being influenced by the misleading use of terms and unjustified analogies.

2. The greater proportion of cases of appendicitis recover spontaneously, and it is probable that the general mortality of the disease—if examples of all grades be included—is not above 5 per cent.

3. Operations carried out during an acute attack are attended with a risk to life which is considerable, and which is probably expressed by a mortality of over 20 per cent. Certain hospital records and collections of cases appear to place the death-rate even higher than this.

4. It must be remembered that relapses may occur after operation carried out during the acute stage. Dr. Mynter incidentally mentions that out of 27 cases so treated there were two relapses. (It is possible, however, that these relapses were due to complications from abscess.)

5. The removal of the appendix during the quiescent period is attended with a very trivial risk, which may be expressed by a mortality of 1 in 500.

Regarding the above propositions as bases for some sort of definite action in the management of the acute case, it has appeared to me that a reasonable course may be established upon some such lines as the following :

(a) I venture to think that our knowledge of the pathology of the disease and its general mortality will not sanction the practice of opening the abdomen in every case of appendicitis as soon as the diagnosis has been established.

(b) Immediate operation is demanded, at the earliest possible moment, in all ultra-acute cases. These cases embrace those very hopeless examples which present from the onset the phenomena of intense infection, and in which it is evident that a very large dose of poison has suddenly been introduced into the system. In these examples death may occur in thirty-six or forty-eight hours. In the same category are also included cases in which the symptoms are on a par—as regards acuteness—with the phenomena attending the perforation of an ulcer of the stomach. In spite of expressions to the contrary, I do not think that these ultra-acute cases are difficult of recognition.

(c) Immediate operation is demanded in every example in which there is reasonable suspicion that suppuration has taken place.

(d) In cases outside those above named, I venture to think that the question of operation may be kept in abeyance for the first few days of the attack, and may usually be left open for decision until the fifth day or after.

I may lay stress upon the fact that the great majority of cases of appendicitis recover spontaneously without either an operation or the formation of an abscess, that the ultra-acute cases are actually rare, and that, relatively to the whole mass of examples of all degree, suppuration may be said to be uncommon.

OPERATION DURING THE PERIOD OF QUIESCENCE.

In a paper laid before the Royal Medical and Chirurgical Society in September, 1887, I ventured to suggest that cases of recurring appendicitis should be treated by the removal of the appendix during the period of quiescence. My proposal was not very enthusiastically supported and it is interesting to note that in the debate which followed the reading of the paper, one physician of great experience stated that he had seen a good many cases of typhlitis, but that none had gone to a point requiring surgical operation.

Since the discussion took place I have removed the appendix during the quiescent period over one thousand times with two deaths. The very trifling risk attending the measure has led gradually to fewer and fewer restrictions as to the condition under which it should be carried out. I venture to think that when any patient has had one definite attack of appendicitis it is desirable that the appendix should be removed as soon as all active phenomena have vanished. While I cannot agree with Lennander that a recurrence is to be anticipated, at some period or another in the history of every case, I think there is no doubt that the balance of probability is in the direction of a second attack.

It is manifest that the risk of the operation is infinitely less than the risk of such attack, and that immunity can be obtained and a weight of doubt removed at a trifling sacrifice. If any attack has been attended by the formation of an abscess which has healed, then the question of removing the appendix may be indefinitely deferred, since by the occurrence of suppuration the patient is—in all but a very small percentage of cases—cured of his trouble. Should there be any recurrence of symptoms after the abscess has closed, then the removal of the appendix is certainly to be advised. Complications arising from the abscess itself may also call for surgical interference.

Some little caution must be exercised in accepting the statement that an abscess has, in any given case, burst into the bowel. In more than one instance the material which has escaped from the rectum, and which has been regarded as pus, has proved to be decomposed and long-retained mucus from a catarrhal colon.

In addition to the cases attended by abscess there are at least two types of appendicitis in which the question of removing the affected organ after the first attack may be reserved for some consideration. A slight or moderate attack of appendicitis in a child, which has definitely followed upon the lodgement of a mass of undigested food in the cecum, may never be repeated if the error in diet be also not repeated.

There are, moreover, cases in adults in which the attack would appear to be led up to by gross deviations from what might be regarded as normal food taking. Among such individuals are those who have no masticating teeth and who "eat anything"; those who habitually bolt their food, eat ravenously, or take irregular meals; those who have a leaning towards a particular kind of indigestible food, or constantly neglect their bowels. If these errors, or any combination of them, be corrected, there may be no repetition of the initial attack.

These examples are not cited as affording definite exceptions

to the general rule of operating, but rather as the cases which, in my experience, are most prominent among those in which there is no recurrence after the primary outbreak.

Removal of the appendix is also to be recommended in chronic appendicitis, in those examples in which there are no actual attacks, but in which there is abiding discomfort in the right iliac fossa with exacerbations of uneasiness.

In conclusion, it may be in accord with certain signs of the times if it be remarked that the removal of the appendix is not a panacea for all ills, nor even for all those manifold pains which seize upon the lower segment of the abdomen.—*British Medical Journal*.

Editorials.

THE ILLNESS OF OUR KING.

We did not appreciate how much we loved our King until we heard, Tuesday, June 24, that he was dangerously ill, and that a serious operation had been performed upon him. During those dark days which followed we began to realize that he, our Sovereign, was not only dear to us, but was also the most influential and most highly respected man in the councils of the nations of the world.

At the time of writing we are depending chiefly upon information derived from the official bulletins issued by the attending physicians and surgeons, reports sent out by the *Lancet* and *British Medical Journal*, and special reports cabled to the *New York Medical Journal*.

On June 16th the King, after attending a military review at Aldershot in bad weather, somewhat suddenly collapsed, and suffered from chills, nausea, pains, and other symptoms of abdominal trouble due to perityphlitis. On June 18th his temperature was elevated, and there were swelling and tenderness in the right iliac fossa. On June 21st the temperature was normal and swelling and tenderness gone. Rapid recovery was hoped for. On June 23rd the temperature was 102, and there was considerable swelling. On June 24th (Tuesday), at 10 a.m., an operation was decided upon, and was performed at noon by Sir Frederick Treves, assisted by Lord Lister, Sir Thomas Smith, Sir Francis Laking and Sir Thomas Barlow, Dr. Frederick Hewitt administering the anesthetic. The abscess around the cecum, of large size and deeply seated, was opened, evacuated, and washed. Two large drainage tubes were introduced and the wound was packed with antiseptic gauze. There was no resection of the bowel (as reported by certain newspapers). The recovery from anesthesia was satisfactory. The King passed a restless night.

June 25th (Wednesday)—At noon, twenty-four hours after the operation, condition favorable.

June 26th (Thursday)—A good day, followed by a fair night, the patient having refreshing sleep. The state of the wound satisfactory, although occasional pain is experienced, the dis-

charge healthy, the temperature normal. A fair amount of nourishment taken.

June 27th (Friday)—Wound comfortable; general condition good.

July 3rd—Constitutional condition admirable. Temperature normal since June 26th. It has been necessary to remove the drainage tubes, as they could not be tolerated, and gauze plugs are now used instead. The wound is granulating satisfactorily; the discharge has diminished and is perfectly inodorous. At no time has it been necessary to use sedatives to induce the King to sleep.

July 6th—Continues to improve. His surgeons and physicians announce by bulletin that they consider the King now out of danger.

The tone of the medical and lay press in the United States has been, as a rule, more than kind. We in Canada, who have been more in touch with the views of the surgeons of the United States than the average physicians and surgeons of Great Britain, can fully appreciate this fact. We are publishing in this issue certain extracts from articles which have appeared in the *New York Medical Journal* and other journals or newspapers published in the United States. We think they will be found interesting, although they, in many instances, give opinions expressed only two days after the operation, based on information received by cable.

In some respects the surgeons of Great Britain and the United States agree as to appendicitis, but there is more conservatism in the former as compared with marked radicalism in the latter. And yet we might say that there is, to some extent at least, a similar difference between Boston and Chicago as to conservatism and radicalism. In the former city they endeavor to make a diagnosis of appendicitis before operating; in the latter it is said some of the most strenuous surgeons consider that no patient should be allowed to have a pain or an ache in his belly for more than fifteen minutes without an operation. We, of course, have our differences of opinion in Canada, but we think we can say for Toronto that our surgeons would be found to be pretty well in accord with those of New York and Boston in most respects.

Occasionally we find a regular fault-finder in the United

States. Our friend, Dr. Carstens, of Detroit, expressed the opinion soon after operation that the King was in the hands of old fogies and was not likely to do well. It is quite true that the operator was actually forty-nine years of age. That would naturally seem rather old to a youth like Carstens; but in England they do not think that a surgeon or physician should be retired at 49. The inhabitants of Great Britain, both professional and lay, have implicit confidence in Treves, notwithstanding his great age. But Britain is not Detroit, and Treves is not Carstens.

We are glad to be able to publish in this issue the greater portion of an editorial in the *Lancet* written in the afternoon of the operation, and the greater portion of Sir Frederick Treves able address on inflammation of the vermiform appendix delivered four days before the operation.

THE MEETING OF THE ONTARIO MEDICAL COUNCIL.

At the recent meeting of the Council of the College of Physicians and Surgeons of Ontario all the members were present, excepting Dr. Williams, of Ingersoll, and Dr. McLaughlin, of Bowmanville, both of whom were unable to attend on account of illness. Dr. W. J. H. Emory, of Toronto, and Dr. J. A. Robertson, of Stratford, were elected President and Vice-President respectively.

One of the most important discussions was that on a motion by Dr. Brock, seconded by Dr. Moore, that in the opinion of the Council no change should be made in the present membership. The motion was carried by a vote of 20 yeas to 3 nays. We may say that if it is true, as reported in the lay press, that any member has repeated the old accusation that the College representatives hoodwinked the profession at the time of the organization of the Council, he has made a statement that is most unjust to the memories of Drs. H. H. Wright, W. T. Aikins, and others who showed a most unselfish disposition during the negotiations leading up to the formation of the Council. As far as the "hot talk" went, the astute leader of the small opposition appears to have carried off the honors, and to have driven his opponents into a sad fit of hysterical frenzy.

The Council decided to recommend to the Provincial Legisla-

ture the necessary amendments to the Ontario law governing the admission of candidates to the study and practice of medicine, and permit of the operation of Federal law regarding registration in this Province. The matter is, however, really left in the hands of the Committee on Dominion Registration.

A committee, composed of Drs. Geikie, Britton and Macdonald, was appointed to further the proposal to establish the nucleus for a pathological and anatomical museum in Toronto. It was considered that at present many valuable and interesting specimens were lost because of the absence of such a place.

Dr. Bryce, the Secretary of the Provincial Board of Health, requested that fifth-year students be allowed to take charge of isolated camps, because there was a scarcity of licensed practitioners available for such purposes, especially in cases of emergency. Most of the members considered that the Council had no power to grant such privileges.

Dr. Spankie last year gave notice of a motion to raise the standard of the Matriculation Examination. After careful consideration, the Educational Committee recommended the proposed change. This recommendation caused considerable discussion when presented to the Council. Some contended that the present standard was as high, and probably higher, than that of Great Britain. Others, while favorable to a stiffening of the Matriculation test, thought it inexpedient to have a dying Council make any change. Others strongly favored the increase, arguing that we should not stand still, especially as many students were commencing their medical course at too early a stage. It was stated by some that the standard in Quebec at present was actually higher than that of Ontario, although many, if not the majority, believed such a statement to be incorrect. The recommendation finally carried by a vote of 16 to 11. It is supposed by Dr. Spankie and others who have studied the question carefully, that the new regulations will make the standard of matriculation about equal to that of the examination at the end of the first year in Arts in our Canadian Universities.

On motion, the congratulations of the College of Physicians and Surgeons were presented to Sir Frederick Borden on the dignity of Knighthood which had been conferred on him by His Majesty the King. Sir Frederick Borden, a licensed physi-

cian of Nova Scotia, was also made a member of the College of Physicians and Surgeons of Ontario.

A resolution of sympathy with His Majesty the King was moved by Dr. Moorhouse and seconded by Dr. Moore, and ordered to be cabled to Sir Francis Knollys. The resolution, which was carried by a standing vote, was worded as follows: "The members of the Ontario Medical Council, in session assembled, desire to offer most respectfully their profound sympathy to their Sovereign and the Queen Consort, in the King's great and most dangerous affliction. They humbly pray that the Sovereign Lord and Disposer of all Things may see fit to bless the efforts of those in attendance, and to grant his complete restoration to health and strength."

A MEDICAL MAN'S WAR.

"The usual row over the proposed changes to the Ontario Medical Act took place at the annual meeting of the Medical Council yesterday, and some of the language used in the debate, which was a heated one, reflects little credit upon the members of the Council who indulged in it.

The merits of the quarrel between the opposing factions in the Council are well known, and there may be room for much difference of opinion, but even the widest difference of opinions held in the strongest possible manner does not warrant the use of such intemperate language in what ought to be a dignified body, discharging important public functions.

For years this same row has been an annual occurrence, and at each succeeding annual meeting the language used during the debate has grown more unparliamentary and intemperate in its character. It is difficult to estimate where this violence of language will end, if the quarrel is not soon settled.

Some effort ought to be made by the members of the Council, all of whom individually are sensible and respectable men, to stop this annual exhibition of intemperate language, which can only serve to bring the Council into disrepute."—*The Toronto Evening News*.

An editorial such as this makes rather unpleasant reading for the ordinary physician. We, in this Province, are somewhat proud of our Medical Council. We feel that it has done

much to advance the standards of medical education, not only in Ontario, but in other parts of Canada, and in many parts of the United States, through a desire on the part of the latter to imitate our methods. We are anxious to send our best and most level-headed physicians to this our Provincial Medical Parliament. We desire to respect our representatives, and are inclined to resent such aspersions and insinuations concerning them as are contained in this and many other editorials which have appeared in the lay press. Great big head lines, containing such expressions as the following: "An Infernal Lie," "A Degraded Mind," "Choice Remarks Made at the Meeting of the Ontario Medical Council," "That Same Old Quarrel Bobbed Up Once More," appear in some of the daily papers. What is the meaning of all this? Among those who have investigated the matter, the general result has been to cause a feeling of surprise sorrow and shame. Extended comment seems unnecessary.

MEDICAL COUNCIL FOR CANADA.

At last, after many years of discussion in all parts of Canada the Dominion Parliament has passed a Bill incorporating the Medical Council of Canada. We have so frequently published Dr. Roddick's explanations as to details, that we consider it unnecessary to make any extended reference to the provisions of the Bill at present.

No attempt has been made to interfere with provincial autonomy. Each province may accept, or not, as it pleases—moreover, it is expressly stated that the Council shall only commence to act, or even exist, when all the provinces have, by proper legislation, decided to accept it. It is, we fear, unlikely that all will do so at once.

Representation on the proposed Council has been based, to a large extent, on the numbers of physicians resident in the different provinces, the rights of the various universities being at the same time recognized. Under the provisions in this regard the Council, if it ever came into existence, will be large, and the cost of its machinery great.

The general feeling in this part of Canada is that it is a very important step in the right direction. We are all inclined to give due credit to Dr. Roddick for the magnificent work which he has done. Considering what he has done in overcoming great obstacles of almost innumerable kinds, we entertain great hopes that he will continue his good work until the time comes when a candidate can get a license to practise in any part of Canada.

THE CANADIAN MEDICAL ASSOCIATION.

The Canadian Medical Association will meet this year in Montreal, on September 16th, 17th and 18th. This time of the year has been selected by the Local Executive Committee in order that all may avail themselves of the meeting, and it is expected that an unusually large number of members will be present.

To those who contemplate attending the meeting, the following facts will be of interest:—

ARRANGEMENTS FOR TRANSPORTATION.

The following arrangements will be in effect for the meeting of the Canadian Medical Association and the Canadian Dental Association at Montreal, September 16th to 18th, 1902:

In order to take advantage of these arrangements it will be necessary for members to obtain, from agent at starting point, a Standard Convention Certificate showing purchase of one way first-class ticket to Montreal between September 12th and 18th both dates inclusive), which certificates will be honored on or before September 22nd, 1902, in Montreal by ticket agent of the line on which they arrive, for ticket back to their original starting point when certificate is endorsed by Secretary to the effect that delegate has been in attendance at the Convention, on following basis:

From Points South and West of Montreal:

If 300 or more attend, holding Standard Convention Certificates, they will be given tickets for return, free, to original starting point via same route as used to Montreal.

If less than 300 (and more than 50) delegates are in attendance, holding above-mentioned certificates, they will be given tickets for return to original starting point via same route as used to Montreal, at one-third of the one way first-class fare.

From Points West of Fort William:

Should special concessions be made *re* time limit, particulars will be announced later.

If 50 or more delegates are in attendance, holding certificates, delegates from Toronto or Kingston travelling to Montreal via Richelieu & Ontario Navigation Co. may return by Grand Trunk or Canadian Pacific on payment of \$5.00 to Toronto or \$3.25 to Kingston. Delegates from Toronto or Kingston travelling to Montreal via Grand Trunk or Canadian Pacific, may return via Richelieu & Ontario Navigation Co. on payment of one half the fare paid on going journey.

From Points East of Montreal :

If 10 or more delegates are in attendance holding Standard Convention Certificates, delegates east of Montreal will be given tickets, free, for return.

Any further particulars may be obtained from the General Secretary, Dr. Geo. Elliott, 129 John St., Toronto, or from the Chairman of the Transportation Committee, Dr. J. Alex. Hutchison, 70 Mackay St., Montreal.

LOCAL ARRANGEMENTS.

The meetings will be held in the various rooms of the Medical Faculty of McGill University.

PROGRAMME.

There will this year be two sections of the Association, one mainly Medical, the other mainly Surgical. The Address in Medicine will be given by Dr. Wm. Osler, of Johns Hopkins University, Baltimore; that in Surgery by Dr. John Stewart, of Halifax.

In addition to this, on one or two days of the meeting clinics will be held in the Hospitals at such times as will not interfere with the general programme of the meeting, and will yet enable all those who care so to do, to see or to exhibit living cases or specimens which may be of interest to the members.

PATHOLOGICAL MUSEUM.

The Museum will this year be one of the features of the meeting, and circulars have been issued by the Secretary of the Museum, Dr. M. E. Abbott, announcing the intentions of the Committee. Any contributions in the way of specimens will be gratefully received by the Secretary, and every care will be taken of specimens lent and as soon as the meeting is over they will be repacked and reshipped to the owners by a responsible person. Specimens for the exhibition should arrive not later than September 6th. The Committee is desirous more particularly of obtaining series of specimens illustrating diseased conditions of the liver, gall bladder and pancreas. To all those who may not have received circulars containing details of the Pathological Exhibit, the same may be had on application to Dr. M. E. Abbott, McGill Medical College, Montreal.

The Museum of Commercial Exhibits, which is under the special charge of Dr. J. W. Stirling, 255 Mount Street, Montreal, will be found in the most suitable part of the Medical Buildings, the space allotted therefor occupying one of the main halls of the building. Many applications have been received from various manufacturers and instrument dealers, so that a large and interesting exhibit is expected.

EXECUTIVE COMMITTEE.

President, Dr. F. J. Shepherd; Vice-President, Dr. J. Alex. Hutchison; Local Secretary, Dr. C. F. Martin; Local Treasurer, Dr. J. G. McCarthy; Council, Drs. James Stewart, F. G. Finlay and J. M. Elder.

PAPERS.

Some of the papers already promised are as follows:—

Dr. W. Corlett, Cleveland—Lantern Demonstrations on Exanthemata. Dr. J. O. Orr—Artificial Astigmatism. Dr. C. A. Wood, Chicago—Empyema of Frontal Sinus. Dr. P. G. Goldsmith, Belleville—Management of Cases of Nasal Obstruction. Dr. J. F. MacDonald, Hopewell, N. S.—Tuberculosis. Dr. A. R. Robinson, New York—X-Ray in Cancer. Dr. D. A. Shirres, Montreal—Degeneration of Spinal Cord Associated with Anemia or other forms of Malnutrition. Dr. James Stewart, Montreal—On some points in Cerebral Localization, illustrated by a series of morbid specimens and some living cases. Dr. A. Primrose, Toronto—Case of Filariasis in Man, cured by Operation.

Papers also have been promised by Drs. Armstrong, Ingersoll Olmstead, D. C. Meyers, G. S. Ryerson, F. A. L. Lockhart and many others.

Membranous Gólitis.

Foster (*Edinburgh Medical Journal*) uses this name where membranes or complete casts of the bowel are at varying times passed per annum. The main features of the disease are, the passage of mucus in the form of glairy fluid, shreds or membrane, irregularity of the bowels, and abdominal pains of greater or less intensity and frequency. Most of the patients suffer from neurasthenia. There may be slight fever in each attack. In treatment, the first aim should be the treatment of the neurasthenia, by exercise and rest, plain and digestible diet, and regulation of the bowels. For the intestinal pains, bael, in drachm doses of the confection opium, during the attacks only, perhaps aromatic sulphuric acid in 20 m. to $\frac{1}{2}$ dr. doses. Many patients derive great benefit from a course of treatment at the Baths of Plombiers in the Vosges; the value of the waters probably consisting more in the method of employment than in their chemical composition. Warm water baths, ascending douches, and warm abdominal douches while the patient is under water, are the main points in the treatment. In more hopeless cases a right-sided colotomy may have to be performed.—*Charlotte Medical Journal*.

Personals.

Dr. Fred J. Hart, of Barrie, was married to Miss Helen M. Bain, of Winnipeg, June 5th.

Dr. C. E. Coke, Watford, Ont., registered at the *Globe* office, London, England, June 16th.

Dr. Samuel McCallum, of Thornbury, was married to Miss Maude E. Andrews, July 3rd.

Dr. George Sills Young, of Prescott, was married, July 1st, to Miss Eva Elizabeth Greenhill.

Dr. Chas. MacLachlan, of St. Paul, Minnesota, was married to Miss Etta L. Patterson, June 25th.

Dr. J. W. Forster, Assistant Superintendent at the Asylum for the Insane, Kingston, has been appointed Assistant Superintendent for the Asylum for the Insane, Mimico, and Dr. Barber. Assistant Superintendent at the Mimico Asylum, has been appointed Assistant Superintendent at Kingston Asylum.

The following changes and promotions have been made in the staff at St. Michael's Hospital:—Dr. Uren, from assistant surgeon to senior surgeon, in place of the late Dr. Sweatman; Dr. McConnell, of Parkdale, visiting physician; Dr. Winnett, assistant surgeon; Dr. O'Brien, of last year's interior staff, physician to the out-patient department; Dr. Parent, also of last year's staff, official anesthetist; Dr. Marlow, official anesthetist.

Among the medical men upon whom coronation honors have been bestowed are Sir Francis Henry Laking, physician-in-ordinary to the King, and Sir Frederick Treves, sergeant-surgeon to the King, who performed the operation upon him, who have been created Baronets. Among those upon whom Knighthood has been conferred are Dr. Arthur Conan Doyle, the author, and Dr. William Selby Church, president of the Royal College of Physicians.

The following appointments of house surgeons to the various hospitals of Toronto have recently been made:—Toronto General Hospital: Toronto University—J. D. Chisholm, Berlin; R. A. Mullin, Hamilton; T. R. McCollum, Toronto; A. B. Rutherford, Owen Sound; P. W. Saunders, Toronto. Alternatives—D. Lancaster, Toronto, and G. Davies, Cayuga. Trinity University—C. R. Elliott, Toronto; S. Johnston, Toronto; R. Neil Kyles, Camilla; W. H. Lowry, Guelph; R. Parsons, Emery. Alternates—S. J. Farrell, Toronto, and G. B. Jamieson, Barrie. Hospital for Sick Children—Arthur B. Wright, Joseph S. Graham and James Waters. St. Michael's Hospital—F. J. Colling, F. J. Doherty and C. S. Wainwright.

MEDICAL ITEM.

The Ontario Medical College for Women has just completed one of the most successful years in its history. The classes in attendance have been large, and all of the students going up from the college for their final examinations at Trinity and Toronto Universities have, without exception, been successful, while at the College of Physicians and Surgeons, although about 35 per cent. of all the candidates presenting themselves for examination failed to pass, yet all of the students from the Women's Medical College who tried the examinations were successful.

Five out of the eight members of the graduating class have already secured appointments as house physicians in American hospitals:—Dr. Emma Connor, at the Women's Hospital, Philadelphia; Dr. Elizabeth McMaster and Dr. Isabella Thompson, at the West Philadelphia Hospital for Women; Dr. Isabella Wood, at the New England Hospital for Women and Children Boston, Mass., and Dr. Lazelle Anderson, at the Children's Hospital, Staten Island, N.Y.

At a meeting of the American Congress of Tuberculosis, held in New York June 3, 4 and 5, a reorganization was effected and the following officers elected for the ensuing year:—Honorary President, Dr. Henry D. Holton, Brattleboro, Vt.; President, Dr. Daniel Lewis, New York, N.Y.; 1st Vice-President, Dr. J. A. Egan, Illinois; 2nd Vice-President, Dr. Frank Paschal, San Antonio, Texas; 3rd Vice-President, Dr. E. J. Barrick, Toronto, Canada; 4th Vice-President, Dr. J. A. Watson, Concord, N.H.; 5th Vice-President, Dr. Romola, Guatemala; Secretary, Dr. George Brown, Atlanta, Ga.; Treasurer, Dr. P. H. Bryce, Toronto, Canada.

The suggestion to hold a World's Congress of Tuberculosis in St. Louis in 1904 met with approval, and steps are being taken to advertise this fact and secure the aid of medical journals, societies, physicians and scientists in making this movement a grand success.

Wet Surgical Dressings.

Sometimes it is desirable to maintain moist surgical dressings upon a wound, and where a plain sterile solution is desired Van Schaick recommends eight parts of salt, twenty parts of glycerine and one thousand parts of water. Dressings moistened in this solution remain dampened for a much longer time than when water alone is employed.—*The Clinical Review.*