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TORONTO, MAY, 1899.

No. 5.

Original Articles

No paper published, or to be published elsewhere as original, will be accepted in this department.

RECENT CASES FROM PRACTICE, ILLUSTRATING FOUR TYPES OF OVARIAN CYSTOMATA, WITH PHOTOGRAPHS.

BY HUNTER EMORY, M.D., TORONTO.
Surgeon to Grace Hospital, Toronto.

CASE I.—Papillomatous cystoma of both ovaries. Mrs. A., age 36, kindly referred to me by Dr. Hall; mother of four children, youngest four years of age; no miscarriages. Some nine months ago she consulted a city physician for pelvic pain, and was treated for retroversion. About this time a small lump began to show itself low down in the right inguinal region, which steadily increased in size, until now the whole abdomen is enlarged (see Fig. 1), so as to resemble pregnancy at about the eighth month, and patient believed herself pregnant, having had all the usual symptoms, even to distinct "life," except that she has menstruated at irregular intervals, perhaps five times during the eight months. This fact, together with a general progressive emaciation, led her to seek medical advice. Examination showed abdomen enlarged, as indicated; there was a considerable quantity of free ascitic fluid. On deep pressure above and to right of umbilicus, a firm, distinctly outlined tumor was felt, which was somewhat movable in free fluid; also a similar, though smaller, mass was discernable on the left side, at a lower level—the two, however, seeming to be quite distinct. Pelvic examination showed the whole pelvis occupied by

masses somewhat irregular in outline, soft and boggy, but not fluctuating. The uterus could not be isolated from the masses beyond the portio vaginalis; a bruit could be heard on both sides, low down. Patient was advised to enter Grace Hospital for further examination, which she accordingly did. At subsequent examination the before-mentioned conditions were verified, and the sound showed the uterine cavity to be of normal depth. Laparotomy was performed October 28th, 1898. On opening the peritoneal cavity, some two gallons of normal ascitic fluid escaped, and a long cord-like structure, shown in Fig. 2, floated out of the incision. This was white in color, as thick as a lead-pencil, and suggestive of a shrunken umbilical cord. One end appeared to be free, while the other was adherent to the anterior abdominal wall, a couple of



FIG. 1.—Showing contour of abdomen, large quantity of free ascitic fluid, together with papillomatous ovarian tumors—shown in Fig. 2. Note the bulging of the flank, and very gradual rising of outline from the ensiform cartilage downwards, as also the abrupt rising of line from pubes towards umbilicus.

inches to the right of the umbilicus, where it was spread out in a circular mass, a quarter of an inch thick and an inch and a half in diameter. It was, however, easily detached, no bleeding following its separation. The larger mass showed in Fig. 2 was then separated from its pelvic adhesions, and the rather broad pedicle by which it was attached to the uterus was ligated by a triple interlocking ligature of silk, and divided. The cyst contained four imperial pints of fluid and had proliferating papillomatous masses growing from both inner and outer surfaces. The smaller mass shown in Fig. 2 was then removed in similar manner from left side. The position of the Fallopian tubes is indicated in the illustration. Several gallons of normal saline solution were used, temperature 120° , in flushing out the abdominal cavity, thus washing out

large quantities of extremely slimy fluid, besides much of the papillomatous debris, which had been broken and rubbed off the masses growing from external surfaces of the cysts. These masses were exceedingly friable, scarcely bearing the strain of their own weight, and covered with thick, slimy mucilaginous mucus, very much like thin, soft soap. After thorough cleansing of the abdominal cavity, the incision was closed with through and through sutures of silk-worm gut, leaving several pints of the normal saline solution in the peritoneal cavity. Patient made a very smooth recovery, neither pulse nor temperature ever reaching 100° ; the entire convalescence being quite uneventful, and is to-day enjoying excellent health.

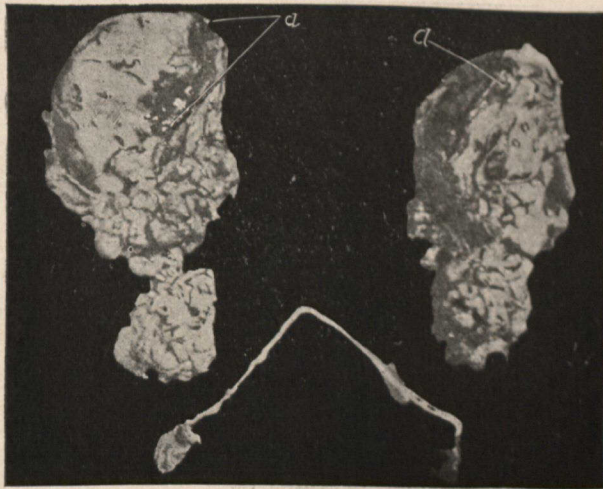


FIG. 2.—(a. a.) Fallopian tubes adherent to cysts. $\frac{1}{2}$ natural size.

CASE 2.—Suppurating dermoid cyst of right ovary. Miss E. McP., age 20. Was well up to two years ago, when she began to have some pelvic pain and dysmenorrhea. Eighteen months ago noticed a small lump in right inguinal region, which has been steadily growing, till now it occupies the whole lower abdomen (Fig. 3.) Has had several attacks of abdominal pain, accompanied by some fever and tenderness. Mass quite immovable, fluctuating, extending some distance above umbilicus. Uterus tilted over to left side of pelvis, so that fundus rests against left pelvic brim. A diagnosis of cystoma of right ovary was made, the history of pain, inflammatory attacks, etc., suggesting it was thought a dermoid. The patient was very much emaciated and quite anemic in appearance, and so was put upon constructive treatment for a couple

of weeks, when laparotomy was performed in Grace Hospital, February 21st, 1899. On opening the abdomen, the tumor was found densely adherent to the abdominal wall and the peritoneal structures so thickened and altered by frequent inflammatory processes, and the cyst wall itself so very deep in color, and in structure so resembling muscular tissue, that the whole condition presented a decidedly puzzling appearance. It was quite difficult, to be sure, when the true cyst wall was reached, as layer after layer had been divided, each of which could as easily be separated from its surroundings as its predecessor; and when the cyst wall was reached, it had a very suspicious resemblance to normal uterine structure. After separating cyst from abdominal wall for a space

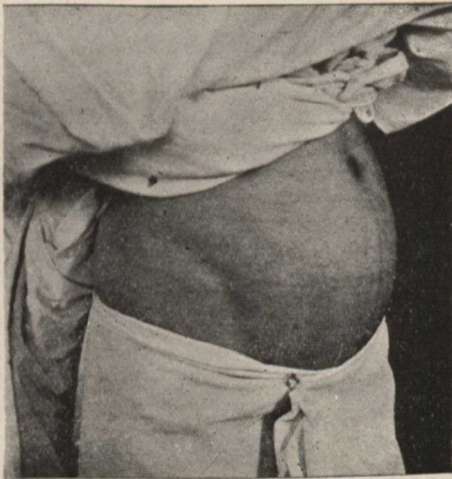


FIG. 3.—Showing contour of abdomen containing dermoid of right ovary shown in Fig. 4.

of an inch or so in radius, a large ovarian trocar was introduced and fluid the consistency of thick gruel, of a pea-green color, flowed through the tube, containing quantities of short, black hairs. After evacuating the contents, the puncture in the cyst was securely closed by clamping, so as to avoid any possible leakage into peritoneal cavity during the process of freeing the sac from its attachments, and this proved the most formidable procedure in the way of dealing with adhesions that it has ever been my lot to encounter. The entire surface of cyst was densely adherent to every structure in contact with it, including abdominal and pelvic walls, omentum, intestines, uterus, opposite tube and ovary, and the bladder. After nearly an hour's work, the entire sac, with right Fallopian tube, was enucleated, ligatures only being required at site

of infundibulo-pelvic ligament, and on the pedicle, which was rather small and easily disposed of by double interlocking ligature. The most dense adhesions were encountered in the attachment to the bladder during the separation, of which the outer layer of cyst wall gave way, remaining attached to the bladder, and opening up several small abscess cavities in the cyst wall proper, which would undoubtedly very soon have ruptured into the bladder, and thus constituted a very unpleasant complication.

With the tumor now entirely disposed of, we had a large cavity lined throughout by a raw, torn, freely oozing surface, and in one place, when a portion of outer layer of cyst wall was left adherent to bladder, a surface which had been bathed in pus. This was carefully cleansed, and then the entire cavity tightly packed with iodoform gauze, the end of which was brought out at the lower angle of the incision, which was then closed around it with through and through sutures of silk-worm gut. The patient was then put to bed with a pulse running between 80 and 85, which almost immediately ran up to 100, 110, 120, and in about two hours to 140, with other symptoms of shock, which, however, yielded to hypodermic injections of strychnia and normal saline enemata; and after the first twenty-four hours the convalescence was absolutely normal. The gauze was removed on the fourth day, saturated with dark, bloody fluid, and two rubber drainage tubes substituted, one passing down to bottom of Douglas's pouch, and the other just through abdominal wall, and the cavity was thereafter flushed out daily, at first with sterilized normal saline solution, and after a couple of days with solution of boracic acid, introducing the douche tip into the long tube, and allowing the fluids to return through the short one. This was continued until the cavity was practically filled up, which took about three weeks. This patient was one of those whom it was a pleasure to wait upon, always cheerful and appreciative, her invariable answer after the first day to the query, "How are you this morning?" being, "Just splendid." Fig. 4 shows the cyst, with a perfectly developed tooth, which was attached to interior of cyst, lying on top.

CASE 3.—Large monocyst of right ovary with twisted pedicle. Miss F. B., age 18; always enjoyed good health; menses normal and regular. On Sunday, March 5th, was taken with severe paroxysmal abdominal pain, which prevented her lying down, as pain was aggravated, and induced by lying down. These symptoms and the accompanying tenderness passed off in a few hours. On March 9th, being called in consultation by Dr. Hall, I found, on examination under anesthesia, the following conditions: The abdomen presented the appearance of pregnancy at about the beginning of the eighth month (see Fig. 5), the enlargement reaching up half way between umbilicus and ensiform cartilage. Palpation

revealed globular mass, smooth surface, elastic fluctuating. Pregnancy was excluded by the following means: No fetal parts could be palpated or movements excited by repeated jarrings; a faint souffle could be heard low down on either side, but no fetal heart sounds. By bimanual recto-abdominal examination the finger

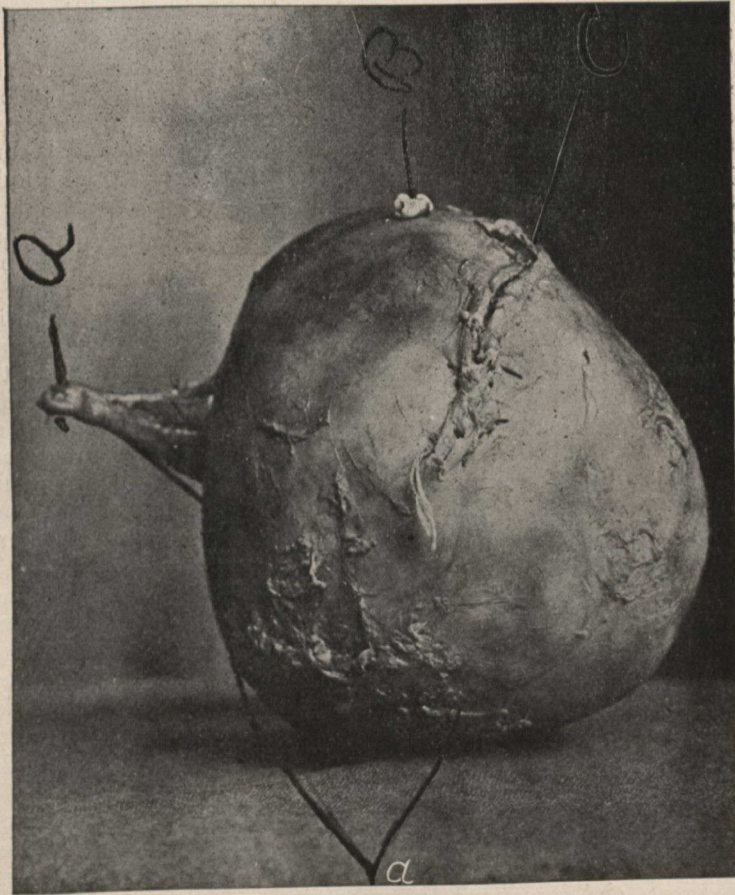


FIG. 4.—Suppurating dermoid cyst of right ovary. (a) Fallopian tube. (b) Tooth found attached to inner surface of cyst. (c) Incision in cyst to empty contents. (d) Area of attachment to bladder showing small abscess cavities.

could easily reach above, and clearly palpate the fundus uteri, which was in the middle line in extreme retroversion. The tumor could also be reached in this situation, and ascertained to be separate and distinct from the uterus. The left ovary also was

felt, but the right could not be found. The sound was next passed, and showed the uterine cavity to be of normal depth. The history, however, was rather unusual, as the young lady and her friends stated that the abdomen had always been that peculiar shape, and no history of recent growth or small beginning could be elicited; this, together with the painful attack a few days before, inclined me to expect the tumor to be dermoid in character. Operation was advised, and on Saturday, March 11th, patient was admitted into Grace Hospital, and operated on March 13th. A simple monocyst of right ovary was removed, which contained seven imperial pints of clear fluid. The pedicle was twisted, the tumor having rotated twice. A large ecchymotic

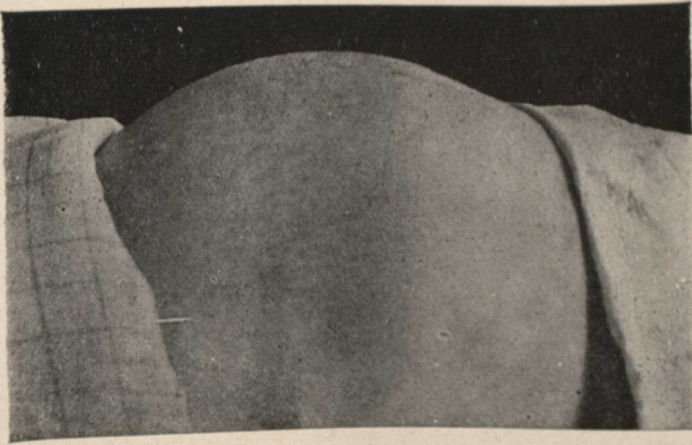


FIG. 5.—Showing contour of abdomen containing monocyst of right ovary, shown in Fig. 6. The linea albae similar to those showing in advanced pregnancy, which were well marked in this case, are plainly discernable in the photograph.

surface shown by dark area in Fig. 6, marks the site of blood infiltration into sac wall, and discolored patch (see Fig. 6), shows site of commencing necrotic process, which would very soon have proved a dangerous and, unless avoided by timely operation, a fatal complication. This rotation of tumor and consequent torsion of pedicle, undoubtedly accounted for the attack of pain a week before, and inability to lie down, which latter symptom persisted in some degree till time of operation. After reverse rotation, thus untwisting the pedicle, it was secured by a double interlocking ligature. After dividing the pedicle, the vessels in stump were caught up with forceps and ligated individually with fine silk. While doing this in the outer portion of the stump, the

portion nearest the uterus retracted through the ligature, thus allowing two good-sized arterial branches to spurt in quite a lively manner. These were controlled by including each one in a mattress suture of fine silk passed lower down in broad ligament and the rent in upper border of broad ligament, consequent on slipping off of ligature, was closed by running suture. There were absolutely no adhesions in this case, although presenting a history of

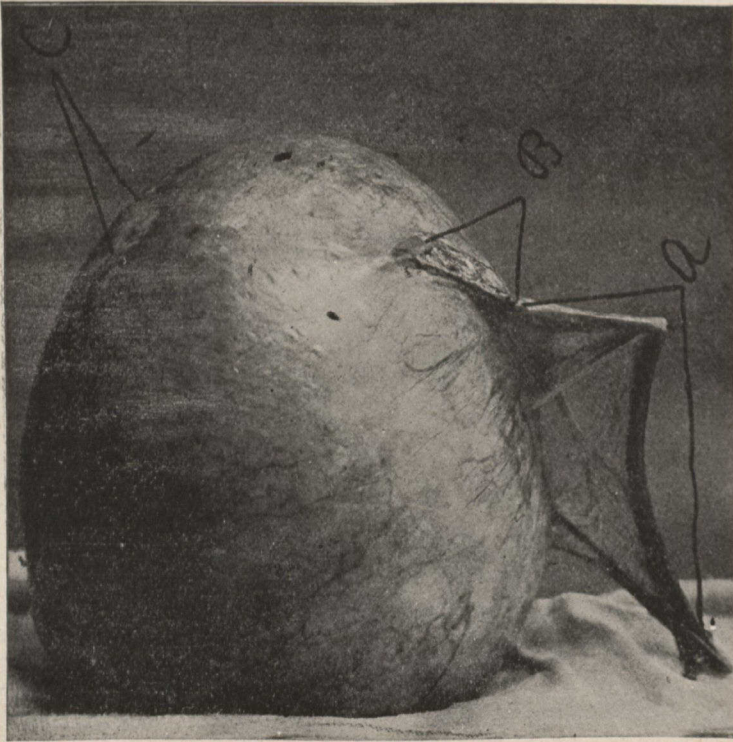


FIG. 6.—Monocyst of right ovary. (a) Fallopian Tube. (b) Pedicle. (c) Area of commencing necrosis due to twisted pedicle. $\frac{1}{4}$ natural size.

so long standing, A half gallon of hot (temp. 120°) normal saline solution was introduced into the peritoneal cavity and the incision closed with through and through sutures of silk-worm gut. The objects sought to be obtained by leaving this quantity of saline solution in the abdominal cavity were to prevent shock, provide for the small amount of blood lost, prevent adhesions to stump, and in some measure compensate for reduction in intra-abdominal

pressure, caused by removal of so large a tumor. The convalescence was absolutely uneventful, the temperature never reaching 100°; vomiting did not occur at all. The pulse was rapid for the first three days, but this was largely nervous in origin, as it immediately lowered during sleep. Patient was sitting up in chair in two weeks, and left the hospital in less than three weeks.

CASE 4.—Large multilocular cyst-adenoma of left ovary and small one of the right ovary. Miss M. H., age 19; first menstruated at 15, always regular and normal; has always enjoyed good health. About nine months before admission to Grace Hospital, noticed a lump the size of a goose egg low down in left side of abdomen, which gradually grew larger and became central, increasing slowly in size till last two months, during which time it has grown very rapidly. Consulted a physician solely on account of burdensome size and weight of abdomen which compelled her to give up work (waiter in dining-room of restaurant) a fortnight before admission to hospital.

A few days before admission had been examined under anesthesia by Drs. McCullough and Hay, of this city, who made a diagnosis of multilocular cyst of left ovary and advised operation, for which she entered Grace Hospital, March 28th. Abdomen enlarged to correspond in size with eighth month of utero-gestation, wall tense, elastic, enlargement symmetrical, except in left hypochondriac region, where the outline of tumor curved several inches higher than at corresponding point at opposite side, the upper border projecting quite up under margins of costal cartilages. Operation on March 30th., assisted by Dr. J. T. Clarke, Drs. McCullough, Hay, Cotton, Cuthbertson, McPherson, Hardy and Wickens, of Toronto, and Dr. Ernest Hall, of Victoria, B. C., being present. On opening peritoneal cavity the omentum was found shifted towards left side, so that right edge did not extend more than half an inch to right of median line, it was easily pushed to left side of incision and was found quite adherent to abdominal wall over considerable portion of left half of abdomen. The cyst presenting itself in incision was tapped by large Spencer Wells' trocar, but contained fluid of a colloid nature too thick to run through cannula. So the opening in cyst was freely enlarged and contents evacuated; cyst cavity after cavity was entered by breaking through partition walls with scissors' points, until some ten were emptied and adhesions dealt with, so that entire sac could be delivered through the incision when the pedicle was secured with multiple interlocking ligature of strong silk and divided. The right ovary was then sought out and brought up through incision and found to contain three cysts, the size of an English walnut, and numerous smaller ones studded over entire remaining surface, so that it was deemed unsafe to leave any portion of ovary behind and it was accordingly removed. The abdo-

men was then closed after flushing with several gallons of normal saline solution, leaving a considerable quantity of the latter in the



FIG. 7.—Showing large multilocular cyst of left ovary ; also right ovary suspended by cord containing three cysts the size of English walnuts, one containing blood, the other mucus fluid. $\frac{1}{4}$ natural size.

peritoneal cavity. Contrary to our expectations, in view of the entire absence of pain in the history of this case, the adhesions

between the large tumor and its surroundings were almost universal, and some of them, notably to the meso-colon, in region of splenic flexure were very firm and extremely vascular, requiring many ligatures. The adhesions to anterior abdominal parietis were easily broken up, while those attaching cyst to posterior wall in renal regions were more firm, though not requiring ligatures. Taking all things into consideration, the operation was one of considerable difficulty, being rendered more disagreeable and tedious by the exceedingly slimy, slippery nature of the contents of cyst cavities, varying from a pale amber to a deep brown in color and from the consistency of glycerine to that of the thickest soft soap. The patient made an absolutely uneventful recovery, vomiting did not occur at all. The temperature rose to 100 degrees the first evening, and gradually fell to normal by the fourth day. No pain was complained of at any time, the patient passing flatus voluntarily from the rectum within twenty-four hours, and the bowels were moved freely by enema on the third day. Sutures were removed on the twelfth day disclosing primary union throughout entire length of incision, which measured just three and a quarter inches. Patient sat up on fourteenth day and left the hospital on the twentieth day.

Fig 7 shows the tumor, the bottom portion distended with water, one cavity at upper central portion of irregular outline is stuffed with gauze. Upper left hand, wrinkled portion, shows collapsed empty condition of several cavities, while on right hand, upper portion, an unruptured cyst presents. The right ovary is shown suspended by twine, the whole figure being one-quarter natural size. The fraction used in all these figures to indicate the reduction from the natural size, refers to the reduction in diameter.

SOME FEATURES OF MEDICAL NOMENCLATURE.*

BY DR. A. F. MCKENZIE, MONKTON.

Gentlemen,—Allow me to thank you for the honor which you have conferred upon me in appointing me your president. I can assure you I am anxious to prove myself worthy of your confidence by doing what I can to make the meetings for this year as successful as possible.

Medical nomenclature is a subject of such scope that a complete consideration of it would exhaust more time than we have at

* President's inaugural address, delivered before the Huron Medical Society, April 19th, 1899.

our disposal, and would require more erudition than I possess. I shall not, therefore, attempt to go into the subject exhaustively, but shall content myself with a consideration of some features of it which I think may be of interest to us as busy, general practitioners.

In approaching this subject it may not be amiss to say a few words regarding what we understand by the term disease. John Hunter is credited with the remark that "definitions are the most damnable things," and probably most writers who have attempted to give a definition of disease, have had some sympathy with the frame of mind Hunter must have been in when he gave utterance to this expression.

Clifford Allbutt, in his recently issued system of medicine, makes the following remarks: "Absolute health is an ideal conception, as the line of the mathematician, the ether of the physicist and the atom of the chemist. It is a positive conception of a perfect balance of the moving equilibrium which we call systemic life. Disease is a negative conception and signifies something less than this balance. In other times, nay, even in our own, there has been a disposition to regard disease as something imported into the system, as a possession of it by a malign agent, which may be expelled by some sorcery or virtuous herb. In this sense health and disease are not different attitudes of the same thing, but a binary combination. Insensibly this personification of disease falls by a sort of refinement into the principle of the vitalists, or it becomes the peccant humor of a less unscientific pathology; or, again, it may be identified with a microbe or a virus. To speak thus is to confound disease with its causes. The perilous stuff from which the bosom must be cleansed is no more a disease than a blackthorn staff is a broken head. The blackthorn may be the cause of a green wound. By this gate other bacilli less gross in kind may enter the body and cause the oscillations in the system which we term fever. The consequent dislocations and disturbances in the body are properly called diseases. A cancer is no more a disease than the hyssop on the wall. A cause of disease it may be, but the disease is in the damaged tissues which are irritated, invaded or choked by the growth."

According to this writer, therefore, a disease is a particular state of an individual, a series of symptoms which are departures from the manifestation of health, so that some recent writers sometimes use, instead of the word disease, the compound word "symptom-complex," which appears to be an addition to our technical phraseology. Although this view of the nature of disease is probably the one which is generally taught in recent works on medicine, it is difficult for us to free our minds entirely of the idea that in some cases, such as the specific febrile affections, parasitic disorders, etc., diseases appear as entities. It would not

be profitable for me to take up any more of your time in discussing this question. It borders too much on what the Scotchman would call the "metaphysical," and some of you have probably heard of the immortal Abraham Lincoln's opinion of metaphysics. He said it reminded him too much of splitting rails—you no sooner got one piece of timber split off than you had to go to work and split it in two again. If there are any present, however, who are particularly interested in this question, I would like to refer them to the article on medicine in the "Encyclopædia Britannica," by Dr. Creighton, who says: "A due consideration of such a phenomenon as the infectiveness or cancerousness of some tumors will satisfy one that there are concepts in pathology which carry the investigator entirely beyond physiological bounds or out of sight of the line of health and bring him face to face with the notion of a disease as a thing in itself, and which thus constitutes a peculiar subject matter."

When we are called upon to treat a sick person, our first aim is to get such a mental grasp of the abnormal conditions present as will enable us to group this particular case with other cases which have been observed by ourselves or others, and it is always a source of gratification to us when we find the symptoms sufficiently well marked to enable us to attach a name to the abnormal "symptom-complex." Unfortunately for our peace of mind we are not always able to do this. Sometimes our inability to name the disease is due to lack of skill and knowledge on our part, sometimes it is due to the instability of our nomenclature, and sometimes we meet a case where, in the light of a post mortem examination, the departures from normal are so many and varied that it is quite impossible to find any one name which would be sufficient to convey an adequate idea of all the abnormal conditions. The popular idea of disease, however, is of such a nature that in many cases it is almost essential, in order to maintain the confidence of the patient and his friends, to be prepared to attach some name to the abnormal condition. As illustrative of this, I might be permitted to refer to the following story related in the *Practitioner*:

"Sir Richard Quain had in the highest degree the power of inspiring confidence, which is the most essential part in the equipment of the successful physician. He was a past master in the art of managing patients. There is a legend, however, that he was once driven from the field by a still more consummate artist. A financial leader in Israel had been suffering for a long time from renal trouble of a grave character, and which it was considered expedient by Quain and other physicians in attendance to conceal from the family. The wife insisted, much to Quain's annoyance, on calling in Sir Wm. Gull, who, she said, would be

sure to tell her what her husband was suffering from, which, apparently, none of the doctors knew. Gull, when interpellated on the subject replied in his most oracular manner: 'Madam, your husband is suffering from a cachexia.' 'There!' said the lady triumphantly, 'I knew Sir Wm. Gull would tell me.'

Medicine is not generally recognized as an exact science and consequently its nomenclature varies a good deal according to prevalent theories. As compared with mathematics or astronomy medicine presents fewer certainties and leaves more room for theorizing. In the very nature of things this must be and probably will so continue. At the same time, however, I think we can safely say that the sum total of our knowledge concerning disease in its various forms is much greater and more exact than it was a quarter of a century ago. Chemistry, physics and biology have all contributed to the advance in knowledge. We now see, hear and feel things, where our predecessors argued, imagined and theorized. Probably no other class of men have more frequently impressed upon them the necessity of looking at things as they are, and for a time, at least, laying aside preconceived notions. Observation should, as a rule, precede reasoning. Some one has made the remark that more mistakes are made in medicine by not seeing than by not knowing.

The technical names of medicine are derived from many sources. Most of our new words are deliberately coined from the Greek or Latin. Regarding this source Gould, the editor of the *Philadelphia Medical Journal*, says: "When a word is desired the modern minter snaps out his Liddell and Scott, gets some words that best suit his purpose, and shakes them together in his etymologic basket until they cohere in some sort of unity, not infrequently a very ludicrous one." There are advantages, however, in this source of medical terms. Words thus derived are more apt to be adopted by the profession in different countries, thus facilitating interchange of thought. At times it is desirable to use words that are not entirely intelligible to the laity. Particularly is this the case in clinical lectures.

A. L. Benedict remarks in this connection, "Familiar words become encrusted with secondary meanings which connect them with other words, and tend to conduct the thought away from the object to which it should be confined. The word fibula, for example, suggests to the anatomist the outer bone of the lower leg and nothing else. Literally, it means a clasp, buckle, connecting pin or bond; but none of these English expressions would be sufficiently definite. The best *reductio ad absurdum* of a home-made nomenclature is afforded by the Germans. By a curious anomaly they use, side by side, a much purer medical Latin than we do, and such verbal monstrosities as heart bottle for pericardium,

slime skin for mucous membrane, and beat vein for artery. This is a practical disadvantage to English-speaking physicians, for while the medical literature of other countries has a technical nomenclature almost identical with our own, that of Germany, the most valuable of all, presents great obstacles to the translator."

Our anatomical and pharmacological names are derived almost altogether from the Latin. Most of the new names introduced in connection with the science of bacteriology are derived from the Greek. The microscopic characters of bacteria are in scarcely any case sufficient to allow of their identification. It is by the *ensemble* of their cultural characters on different media, their chemical products—the results of experimental inoculation upon animals—that identification is possible, and to these must be added the effects produced upon bacteria by the action of specifically immunized sera. Accumulated observations have disclosed a bacterial kingdom of such dimensions that to determine or identify any given individual is a matter of increasing difficulty. The fundamental argument adopted by Darwin for the theory of evolution, viz., the impossibility of defining species, holds equally through microscopic and macroscopic forms of life. Nevertheless, of the different methods of classifying bacteria, those founded upon forms are the only ones that are at present practicable. Of such classifications there are almost as many as there are authors. For all practical purposes, however, the pathogenic bacteria are reducible to spores or micrococci, rods or bacilli, and twisted rods or spirilli. The micrococci are often grouped, and when in pairs, are termed diplococci; fours, tetracocci; in chains, streptococci; in bunches, like grapes, staphylococci, etc.

Some of the names of diseases are hybrid in origin, partly Greek and partly Latin. This miscegenation, as it is termed, is regarded with particular abhorrence by grammatical critics of our nomenclature. Among such names and terms may be mentioned the following:

Albuminuria—From *albus*, white (Latin), and (Greek) *ouron*, urine.

Fibroid—From (Latin) *fibra*, and (Greek) *eidos*, appearance or resemblance.

Terminology—From (Latin) *terminus*, a term, and (Greek) *logos*, a discourse.

Tuberculosis—From (Latin) *tuberculum*, and (Greek) *osis*, denoting formative process.

Appendicitis—From (Latin) *appendix*, and *itis*, a Greek termination signifying inflammation.

It is rather curious to read what different authorities have to say as to the use of this word. Osler, in his text-book of medicine,

says the terms perityphlitis and paratyphlitis should be altogether discarded, and in their place the word appendicitis used.

Frederick Treves, in an article in Albutt's System, retains the word perityphlitis, and calls appendicitis an uncouth name.

Kuster protests against the use of the term appendicitis, which he regards as most unsatisfactory, both in meaning and form.

German anatomists do not use the word appendix in describing the vermiform process of the cecum, and are unwilling to adopt a term, which, in its multiple sense, is already generally applied to the small fatty processes met with on the large intestine.

The form of the word appendicitis is held to be objectionable, as it consists of a Latin word with a Greek ending. Such a term, Kuster holds, would be hardly tolerable, even if it could not be replaced by another. It is not difficult, however, he states, to find a good substitute. The Greek anatomists, whose dissections were made chiefly on animals, which, with some few exceptions, do not possess a vermiform process, left no term for this structure; but it would have been in accordance with the spirit of the Greek language to have given to it the name epityphlon, to indicate something attached to the outer surface of the cecum. On these grounds, Kuster would advocate the substitution of the term epityphlitis for that of appendicitis.

I venture to predict, however, that the term appendicitis has come to stay in the English language. It is used almost universally by general practitioners in America at least and, what is perhaps of more importance, it has been taken up by the laity.

This brings before us one great obstacle to our ever having what might be termed a purely scientific nomenclature. We are constantly under the necessity of giving our ideas of disease to people who know little or nothing of medicine, and when we get hold of a good sounding word like appendicitis, acceptable alike to the laity and to the rank and file of the profession, it will be difficult to dislodge it, in spite of its etymological defects.

Some diseases are called by the names of individuals who were prominently connected with their recognition. In reference to this feature of medical nomenclature, Oliver Wendell Holmes said: "If a doctor has the luck to find out a new malady, it is tied to his name like a tin kettle to a dog's tail, and he goes clattering down the highway of fame with his attachment following at his heels." Although the habit of naming diseases after individuals is, on general grounds to be condemned, it is not without apologists as a makeshift under certain circumstances. Those who object to this method of nomenclature claim that the name of the disease must be defective if it does not indicate the pathological change or the part affected, or both; or, failing these, the characteristic effects of the morbid process. On the other hand, it is claimed that there is

danger of giving pathological names prematurely, for fear that error be taught immediately and persistently. Take, for example, the disease often called exophthalmic goitre. This name given descriptively is bad, because as a descriptive name it postulates two events, either of which may be absent from the group, while it omits the cardiac events which are, at least, of equal importance. Had a pathological name been given, matters would have been worse still, seeing that at least three mutually exclusive hypotheses are on foot. Is it not really more scientific after all to be satisfied with such a name as Graves' disease, which sufficiently indicates the inconstant group of events we have in view, and commits us neither to a fixed order in the group, nor to any premature classification?

There are some terms which, although frequently used, have not the same significance attached to them at different periods of medical history, and by different writers of the same period. Of such words I would like to mention inflammation. When I graduated, I was taught that a certain amount of inflammatory action was necessary in the healing of a wound, and was to this extent a normal process. At the present time there is a tendency among many prominent teachers to restrict the application of the word inflammation to those changes which result from the action of septic organisms.

Thus, in a paper on "Cystitis," published in the "International Clinics for 1898," Senn states that it is now very generally conceded that inflammation of any organ or tissue is invariably caused by microbic invasion, and in the address on "Surgery" delivered before the British Medical Association in 1893, Hume stated that in all forms of repair of wounds, inflammation is never a help and can only be a hindrance, and that if it occurs, repair can only take place in spite of it, or be delayed until it has passed away. On the other hand, in Professor Adami's article on "Inflammation" in the recently published "Allbutt's System of Medicine," he sums up the question by defining inflammation as "the series of changes constituting the local manifestation of the attempt at repair of actual or referred injury to a part, or briefly, as the local attempt at repair of actual or referred injury." How is the wayfaring general practitioner even though not a fool, to make a choice as to the meaning to be attached to the word. As we have good academic authority for doing so I think, at least as far as the healing of wounds is concerned, we had better side with the laity, who have always regarded inflammation as an abnormal process. We shall, however, use the term on clinical grounds and not be afraid to use it until we have a certificate from some bacteriologist that there are microbes present, and at the same time we shall be ready to acknowledge that it is often difficult, if not impossible, to

draw a hard and fast line between reparative and inflammatory action in the healing of wounds and injuries. In a very interesting paper, on the origin of some disease names, Wm. Sykes sums up his opinions on medical nomenclature as follows:

"1st. Since medical literature in this country has become essentially English, disease names which are most in sympathy with the genius and structure of our language, or are actually drawn from our speech, are most suitable for adoption by us. Since the writing of our literature in Latin has forever ceased, the attempted classicizing of names introduced from other sources ought to be abandoned. It has, for instance, been attempted to Latinize dengue into denguis—an absurd endeavor.

"2nd. A disease name once generally adopted should never on any pretence be changed; such alterations only confuse the records of historical medicine. In many of the diseases described by older authors we vainly seek for their real nature under an unfamiliar nomenclature.

"3rd. It is vain to attempt to replace a folk name, or one widely adopted by the people, by a new one deliberately coined by scholars, and this for the following reasons: Whatever names may be accepted by medical men must be translated by them into the vernacular of their patients, and by a resulting reaction the vernacular name comes to be the commoner with themselves; and again, there is no continuity or unchangeableness in the terms invented by savants. These are amended, improved upon, or displaced by the next writer on the subject, or, more absurdly still, by the very inventors themselves in subsequent publications. A striking instance of this occurs in "Fagges' Principles and Practice of Medicine." In the first edition, published in 1886 German measles is termed rotheln, but in the second edition, published only two years later, it is promoted to the dignity of rubeola. Meanwhile some writers call measles rubeola and others morbilli—a pretty confusion indeed for the subsequent historian to unravel.

"4th. All language is the result of natural growth, and cannot be artificially created. It is, therefore, more scientific to accept the products of natural development than to indulge in an artificial and therefore ephemeral system of cultivation.

"5th. All disease names are only labels by means of which the maladies themselves can be identified, discriminated and classified, and those names are the best which are simple, distinctive, and express no theories of causation. It is the folk names which most often meet these requirements, and, therefore, deserve the widest adoption by us in the future."

Although these conclusions are probably sound so far as concerns the preservation of terms which have been in use for some time, I think it likely that most new words required by medicine in

the future will be coined by medical men connected with the great medical centres where scientific research is carried on, although it will probably rest with the laity and general practitioner to make a selection of those which are fittest to survive. Closely connected with the subject of nomenclature is the question of simplifying our spelling of words. One of the most influential advocates of reform in this direction is Gould, of Philadelphia, who, in a paper read before a meeting of editors of medical journals, urged the adoption of the following changes: (a) The dropping of the final "al" in such words as chemical, biological, etc; (b) changing "æ" to "e" in such words as hæmorrhage, anæsthetic, etc; (c) the dropping of the final "e" in such words as bromine, iodide, etc; (d) program instead of programme; (e) meter, center, etc., instead of metre, centre, etc; (f) changing "œ" to "e" in œdema, diarrhœa, etc. Most of these changes are already adopted by many American authors and editors, but so far have not received much acceptance among leading writers in England. In conclusion, gentlemen, I would like to express the hope that sometime in the future there will be evolved a universal language of medicine, in which it will be possible for medical men of different nations to communicate their ideas to one another. Some have advised the adoption of the modern Greek as being suitable for this purpose; but it is likely that if such a universal language is ever used, it will not be deliberately adopted by medical men, but will be the result of natural growth, fostered by influences outside of medicine. At the present time the rapid spread of the imperial sentiment, not only throughout the British Empire but also among our cousins to the south, would seem to indicate that the English language, although probably greatly altered, may become the medium of exchange of ideas in medicine as well as in commerce. The development and spread of such a language may be one of the items of the "white man's burden," as sung by our great imperialistic poet, Rudyard Kipling, who has so recently escaped from the grim monster, against whom we medical men are waging a constant warfare, but before whom we must all, sooner or later, lay down our arms.

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Special Selections

WHERE SHALL WE SEND OUR TUBERCULAR PATIENTS?—THE HEALTH RESORTS OF THE WEST AND SOUTH-WEST.*

BY FRANK E. WAXHAM, M.D., CHICAGO.

Where to send patients suffering from pulmonary tuberculosis, with the best hope of recovery, is a most important question and one that too frequently is of vital importance to the physician himself. The great tablelands of the Rocky Mountain region are becoming justly celebrated in the climatic treatment of tuberculosis. Where we shall send our patients will depend upon many circumstances. We must take into consideration various conditions. It will depend upon the season of the year, the stage of the disease, the strength, the vitality, the temperament and the financial condition of the patient.

We look upon altitude, sunshine, dryness of the atmosphere, uniformity of temperature as essential attributes of any climate in the treatment of pulmonary tuberculosis. In addition to these conditions, however, we must have contentment of mind, and the comforts of life. There is no climate that is absolutely perfect, and none that will overcome this dread disease in the face of discontent, home-sickness, anxiety and want. When a patient leaves home in search of health he must find the same comforts, the same advantages that he has at home or an improvement upon them, in addition to improved climatic conditions. Whether a patient should be sent to a distant region in search of health will depend in no small measure upon his financial condition. There is nothing so pitiful as a man or woman, a stranger in a strange land, sick and without means. I have always claimed that if a patient's financial condition is such as not to permit his having every comfort until recovery has occurred, or until convalescence has so far advanced that he can engage in business, it is a cruelty to send him adrift, and the more advanced the disease the greater the culpability of him who so advises.

Too many invalids are impressed with the idea that they will recover at once in some magic way upon reaching some far-famed resort. Their disappointment is great when they find no immediate improvement and that instead of a few weeks it will be

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months or even years before the disease will become eradicated. The rapidity of recovery will depend upon the stage of the disease; the more incipient, the more rapid and marked will be the improvement. Incipient cases do well in a high altitude and will frequently bear well the cold and changeable weather of winter. More advanced cases, while they bear high altitude well during the summer and autumn, will find it entirely unsuitable for them during the colder part of the year.

Then, again, there are many in the later stages who cannot endure high altitude at any season of the year; their condition is made worse and their suffering increased. These are the cases with dyspnea, weak and rapid heart action, night-sweats and emaciation. It is a question whether these patients should be sent away from home at all; but if so, they should be sent to a warm climate with little altitude, with abundance of sunshine and with plenty of means. I would recommend La Cruces, N.M., as especially suitable for such cases.

The regions to which I would especially call your attention are Colorado, New Mexico, south-western Texas and Arizona. That we may more successfully adapt our patients to a suitable climate we will study these climates separately.

The greater part of Colorado is a great tableland ranging from 4000 to 6000 feet elevation. Upon this great elevated plain are to be found a number of cities offering the best of advantages for suitable cases. Among these cities may be mentioned Denver, Greeley, Fort Collins, Loveland, Canon City, Pueblo and Trinidad. Another region will include the foot-hills and valleys, at an elevation of from 6000 to 7000 feet. In this region we will find Boulder, Palmer Lake, Idaho Springs and Colorado Springs. At a still greater altitude—from 7000 to 10,000 feet—we will find the natural parks, as the South Park, Middle Park, North Park, San Luis Park, Estes, Antelope and Manitou Parks. Accommodations can be found in most of these parks, but patients should not be sent to these elevated regions excepting for a few weeks during the hot days of summer, and then only on the advice of a local physician, who can be the only judge as to the safety of such a course.

The rainy season in Colorado is in June, July and August. During this season frequent showers are common. One who has been deluged in a Colorado cloudburst will conclude that it is the wettest region on this earth, and yet the annual rainfall is but fifteen inches—less than one-half what it is in Chicago. Another interesting feature of Colorado climate, and indeed of all elevated countries, is the difference of temperature between the sunshine and shade and between day and night.

Many people entertain the belief that the winds of Colorado are

a very unpleasant and detrimental feature of the climate. It is true that wind-storms occasionally occur, and yet they are usually of short duration. On account of the extreme dryness of the climate, these wind-storms are accompanied with great clouds of dust, which render them especially unpleasant. These wind-storms are quite characteristic of the west and south-west, and yet the statistics from the U.S. Weather Bureau prove that the wind movement is much less than in Chicago. Here the mean, hourly wind velocity is seventeen miles, while in Colorado it is only seven miles.

The essential characteristics of the climate of Colorado¹ are : diminished barometric pressure due to high altitude, dryness of the atmosphere, clearness of the atmosphere, almost complete absence of fog, great amount of sunshine, attenuated atmosphere, moderate wind movement and a large amount of electricity.

Leaving Colorado and entering New Mexico we find pre-eminently a land of sunshine and sand. New Mexico has, within the past ten years, gained a most enviable reputation as a health resort for consumptives. In this arid region there is no name or word in the native language to express the disease, and the natives have never been known to have suffered from it.² So pure and dry and free from germs is the atmosphere that meat hung up in the air will not decompose. Indeed, it is not an unusual sight to see quantities of meat cut in thin strips and hung out to be cured for future use.

New Mexico is a great tableland with an average elevation of 5000 feet. We enter the state at Raton, at an elevation of 7600 feet. At Las Vegas we find an altitude of 6500 feet ; at Santa Fé, 7000 feet. This great tableland slopes gently to the southward, and at Albuquerque we find an altitude of 5000 feet, the Pecos Valley, 3500, and the southern border about the same. The rainfall for the whole state, including the mountainous regions, is but thirteen inches, and in the southern part 40 per cent. of this precipitation is in July and August. The wind movement is somewhat less than in Colorado, although in the latter part of February and in March great sand-storms will occasionally sweep the country. In the northern part of the state the climate corresponds with that of Colorado, the conditions at Las Vegas and Santa Fé being about the same as at Denver. The difference in latitude is offset by the increased altitude. Farther south, however, the climate is much milder. The winter climate from Albuquerque south is superb, but during the summer it is too warm for the comfort of most patients. They should migrate, if possible, during the warm season, to the North. The arid region of New Mexico is not an especially pleasant place in which to live, on account of the monotony of sunshine and sand, and absence of large cities of

1. Solly : Medical Climatology.

2. E. A. Long : New Mexico Resources.

interest, but it is the place in which to recover from tuberculosis, if not too far advanced. People with means can here find the comforts of life, and, indeed, many of its luxuries. If I may be allowed to digress, I would like to suggest to the committee of physicians chosen for the purpose of considering the best means of preventing and curing tuberculosis, that they consider the feasibility of establishing a colony for consumptives, not in Chicago, where most of them will die after having been a burden on the community for a longer or shorter period, but upon the plains of New Mexico, where they can be made self-supporting, and where the great majority of them will recover. I believe this would be the greatest philanthropy that could be possibly undertaken. A dozen years ago a committee from the Societ e Medicale of Paris, after visiting various parts of Europe, Asia and Africa, as well as of America, in search of the best climate for consumptives, unanimously reported upon the Rio Grande region of New Mexico as the most suitable, the second choice being a place in Africa near Algiers.³

The climatic conditions of south-western Texas are practically the same as the adjoining territory of New Mexico and need not be considered separately.

Arizona is generally divided into three regions. The first, or plain, is a great desert embracing about one-third the area of the whole state. This great plain is below 3000 feet in elevation, and, excepting the valleys that are irrigated and exceptionally fertile, is a vast desert. This region is noted for its mild winters, intensely hot summers and small amount of precipitation. The total amount of yearly rainfall is only from two to six inches. The second region is called the pro-plateau, and ranges from 3000 to 5000 feet in elevation and has an annual rainfall of ten inches. The third region, called the plateau, is a great mesa comprising about one-half the state and has an altitude of 5000 feet and upward. The annual rainfall for this region is from ten to twenty inches. Arizona has two rainy seasons, one in July, August and September, and the other in December, January and February. Notwithstanding this fact the annual rainfall is about the same as in New Mexico.

In order to carefully consider and compare the advantages of the various health resorts of the west and south-west, I have arranged the accompanying table, and that you may more clearly appreciate their advantages, I have included, in the same table, the climatic conditions of Chicago for comparison.

One of the most attractive cities of the west is Denver, "The Queen City of the Plains." It is also known as a city of beautiful homes. Denver is the destination of many invalids and the large

3. Elias A. Long: New Mexico Resources.

number of active, useful, and wealthy business and professional men to be found there who have entirely recovered, constitute one of the strongest recommendations as to the curative value of Colorado climate. Consumptives are attracted to Denver on account of its beauty and healthfulness as a city, on account of the high standard of its schools and churches, as well as the splendid accommodations that can there be obtained. The best of hotels, both public and private, are numerous, and good boarding-houses are plentiful. At the hotels the usual rates prevail. Board, at the best private boarding-houses, ranges from \$8 to \$10 per week. Board can be had as low as \$5, but should not be recommended. Speaking of accommodation at Denver for tubercular people, we should not fail to mention the Oakes' Home. Notwithstanding the prejudice of many to the gathering of a large number of tubercular

	Altitude— Feet.	Days of Sunshine.	Wind velocity— miles.	Mean tempera- ture—deg.	Rainfall— inches.	Population
Chicago	700	189	17	48.2	34.42	1,500,000
Denver	5,300	315	7	50	14.5	150,000
Colorado Springs	6,000	308	9.1	47	14.4	25,000
Pueblo	4,700	312	7.4	52	....	40,000
Canon City	5,300	..	....	53	11.38	4,000
Glenwood	5,200	..	....	48	15.96	5,000
Las Vegas	6,500	320	....	....	20	6,000
Santa Fé	7,000	317	6.4	49	12.8	10,000
San Antonio	650	273	7	69	30	40,000
Albuquerque	5,000	340	....	55	8	10,000
El Paso	3,700	326	5.5	64	9	10,000
Silver City	5,800	328	....	54	14.5	5,000
Las Cruces	3,800	345	5.5	....	7	3,000
Phoenix	1,100	..	2½	69	7	10,000
Tucson	2,400	..	....	69	12.21	5,000
Oracle	4,500	..	....	....	....	25

patients under one roof, yet it has its advantages. This, undoubtedly, is the best place in Denver to send our patients. Cleanliness, heating, ventilation and disinfection are perfectly carried out and there is much less danger of healthy persons contracting the disease than in ordinary boarding-houses where absolutely no attention is given to disinfection from one year to another. The rates at this institution are from \$9 a week upward, according to the rooms occupied. This does not include medical attendance or nursing. Many people rent furnished houses either in the city or suburbs and live better and more economically than in most hotels or boarding-houses. I believe that only incipient cases and those who have greatly improved or recovered should spend the winter and early spring in Denver. All others should go farther south during this season. This statement applies to all other places in Colorado. Outside of Denver there are many small towns where people can live more cheaply than in the city. Among them may be

mentioned Littleton, ten miles out; Loveland, forty miles; Fort Collins, fifty, and Greeley, sixty miles.

One of the most delightful little towns in the vicinity of Denver is Boulder, thirty miles distant. It has an altitude of 6000 feet and a population of 6000. Located just at the foot-hills and at the entrance of some of the finest canons of Colorado the scenery is unsurpassed and the invalid can find much of interest. It is the seat of the state university, and like all college towns has an air of refinement and culture not always found in small places. Good board in private families can be had at from \$6 to \$8 a week. Here is located the Colorado Sanitarium, a branch of the Battle Creek institution. We can get the best of accommodations here at rates ranging from \$7 to \$26 a week, not, however, including nursing or medical attendance.

Forty miles from Denver and up the Clear Creek canon we find the little city of Idaho Springs, where many go for a few weeks during the summer. It has a population of 3000 and an altitude of 7700 feet. Good board can be obtained at from \$7 to \$9 per week. The hotels might be greatly improved. The little city is beautifully located and there are here some fine natural soda springs that have gained quite a reputation. The invalid or the tourist can find much to attract them.

Going south from Denver, our first stopping-place will be Palmer Lake. This is a most delightful summer resort at an altitude of about 7000 feet, and easily and quickly reached either from Denver or Colorado Springs. There is one very excellent hotel and numerous boarding-houses, all of which are only open for a few weeks during the summer season. Here the air is pure and bracing, the nights always cool and the scenery grand and picturesque. This is a paradise for the botanist or the lover of nature and a few weeks can be spent very pleasantly and profitably.

An hour's ride from Palmer Lake and we are at Colorado Springs, which needs no introduction. Its glorious summer and autumn climate, its proximity to some of the grandest canons of the world and greatest and grandest scenery, are all well known. If Denver is the "Queen City," Colorado Springs is the "City Beautiful." Its altitude is 6000 feet and its population 25,000. The best of accommodations can be obtained either in hotels or private boarding-houses. Rates range from \$8 to \$25 a week. Time and space will not permit me to speak of the many advantages and pleasant features of this most delightful of all health resorts.

Near Colorado Springs are many mountain resorts that are only open during the summer and where invalids can go with much benefit for short outings, if able to endure the increased altitude and if properly advised by the local physician. Among the most noted of these may be mentioned Manitou—"The Picturesque."

Manitou has a population of 3000 and an altitude of 6300 feet. It is situated at the foot of Pike's Peak and in a deep and narrow canon. Here we find the famous Manitou Springs, known the world over. These springs were famous even before the coming of the white man, for the Indians brought their sick from far and near to drink, to bathe and to be healed. Manitou is only five miles from Colorado Springs, but on account of its location summer showers are frequent and the hours of sunshine short. It is not the place for invalids excepting for a few weeks during the height of summer. Excellent summer hotels are to be found at the usual rates, as well as summer boarding-houses.

Going up Ute Pass, either by team or railroad, we find still other resorts that are much frequented. Among them may be briefly named Cascade, Green Mountain Falls, Manitou Park and Woodland Park. Leaving Colorado Springs, we reach Pueblo after two hours' ride, a city of 40,000, with an altitude of 4700 feet. Many people go to Pueblo on account of the opportunities for employment, but I believe it is a less desirable place of residence than either Denver or Colorado Springs, on account of the heat of summer and the smoke and fumes from numerous smelters. Notwithstanding these drawbacks, it is a great improvement over eastern climates.

Forty miles from Pueblo, at an altitude of 5300 feet and nestled close to the mountains and at the entrance of the Grand Canon of the Arkansas, we find Canon City. The summers here are very warm and the winters much milder than at Denver or Colorado Springs. Hotels are fair and private board can be obtained at from \$6 to \$9 a week.

Going westward and passing through the Grand Canon, known as one of the greatest and grandest canons of the world, and up, ever upward, until we reach Leadville, at an altitude of 10,000 feet, and then downward toward the Pacific slope, we finally reach Glenwood Springs, at an altitude of 5200 feet. Here is to be found one of the finest and most comfortable hotels in the whole west. Glenwood is noted for its springs, which are unrivalled in this or any other country: hot springs, cold springs, iron, sulphur and soda springs—you can take your choice.

Going southward from Pueblo, and not stopping at Trinidad in our haste to reach the warmer south country, we pass through a long tunnel and emerge at Raton, but we will not stop even here, for we are on our way to Las Vegas, still farther to the south. Arriving at this place, at an altitude of 6500 feet, we find a thrifty and inviting little city of 6000 people. Five miles from Las Vegas are the hot springs, where there is a good sanitarium. We will not tarry long here, as, on account of the altitude, the winter climate is still too much like that of Colorado. The summer climate, however, is excellent.

We now leave the main road and take a trip to Santa Fé. Here we find a quaint old city, one of the oldest in the United States and still half Mexican. The altitude is 7000 feet, too great for most invalids. The summers are most delightful and the air is pure, dry and exhilarating. As a summer retreat from the hot plains of New Mexico it is an ideal place, but as a winter resort for advanced cases, with large lung involvement, rapid pulse, high fever, dyspnea and sensitive skin, it is entirely unsuitable. The usual boarding-houses are to be found—good, bad and indifferent—but there is a Sisters' hospital where the best of accommodation can be obtained. The prices of room and board are \$45, \$50 and \$60 a month, according to location and size of room.

Taking the road again, we soon arrive at Albuquerque, which is twenty-four hours from Denver. Here we find a city of 10,000, one-half Mexican. The altitude is 5000 feet. The hotels are poor, or were the last I knew them. There are, however, many good boarding-houses. The rates are from \$8 to \$10 a week. I look upon the climate of Albuquerque as one of the very best to be found in the south-west. The winters are warm and delightful, and while the summers are hot, they are not so distressingly so as in Arizona. The nights are fairly comfortable, even in the warmest season. The great complaint all through the south-west is in regard to the lack of good accommodations. This is due not to the fact that there are none, but to the fact that all the cities of the south-west are small and overcrowded with invalids, and as all cannot have the best, there must necessarily be some complaint, especially among those who come late and are left out and obliged to take what they can get.

There are but few cities in New Mexico that offer any inducements for invalids, and when we have mentioned Las Vegas, Santa Fé and Albuquerque, we have named them all, with the possible exception of Las Cruces, Silver City, Deming and Eddy. Las Cruces is a little village of 3000 and has an altitude of 3800 feet. It is south of Albuquerque and but forty miles from El Paso. The winter climate is ideal. There is hardly a day in the whole winter that one cannot sit out safely and comfortably in the sun all day long. The houses are adobe and usually but one story in height. The boarding-houses are few in number and only a small number of patients can be accommodated. Excellent board and comfortable lodging for about one dozen invalids can be had at Livingston's ranch. The rates are \$10 a week. There are a few other boarding-houses, but I am not familiar with them.

Silver City is a mining town of 3000. It has an altitude of 5800 feet. The climate is magnificent, there being but thirty-seven cloudy days in the year. Unfortunately, but a few people can find accommodation here.

Going still farther south, we enter south-western Texas at El

Paso. The altitude is 3000 feet and the population 10,000. The hotels are fairly good and there are many good boarding-houses, but the numbers are far too few to accommodate the many invalids that flock here from all parts of the north during the winter season. Board varies from \$8 to \$15 a week. Many rent furnished rooms and take their meals at the Chinese restaurants, which are the best to be found in the town. There is much of interest to be seen here, and by just crossing the river to the Mexican city of Juarez, we are at once in a strange corner of a strange land.

Before leaving Texas, I must refer a moment to San Antonio, a city of 40,000 people, where many people go for the winter. The climate is warm and mild, and generally delightful. Many patients do well here, although the place is wanting in two essential attributes, dryness and altitude. The yearly rainfall is thirty inches, nearly as great as in Chicago, and the altitude is but 650 feet.

There are but a few places in all the vast territory of Arizona to attract our attention. Flagstaff and Prescott, with altitudes of 7000 and 5300 feet respectively, are mining towns and poorly equipped for caring for invalids. Each affords a cool retreat in summer, but for permanent residence they are unsuitable on account of the lack of good accommodations.

Phoenix is a city of 10,000, altitude 1100 feet. The winters are very mild. This is a good place for selected cases, especially those who need a warm, dry climate, and who cannot endure high altitudes.

A better place, however, and one giving better results, is Tucson, a city of 6000, a goodly portion being Mexicans, and at an altitude of 2500 feet. Fairly good accommodations can be had here at the usual rates.

The ideal place in all Arizona is Oracle, situated thirty-eight miles from Tucson, at an altitude of 4500 feet, and reached by a daily stage. We have here a dry, warm climate, and at the same time secure the advantages of altitude. It is surrounded by mountains and free from and perfectly protected from the wind and dust-storms which are often such an annoyance on the arid plains of the south-west during the early spring months. There are only about twenty-five people at Oracle, and these are on two or three ranches. The ranch owned by E. S. Dodge, and known as the Acacia ranch, is the stopping-place of invalids coming here. The rates are \$10 a week. The best of fare and the best of food, fresh from the farm, can be had here, and few invalids will fail to improve in this magnificent climate of almost constant sunshine. The only possible objection is the long stage drive, which few advanced cases can endure without great fatigue and discomfort.

In conclusion, I would say that there is no one place suitable for all cases, and frequently one will do better by remaining a part

of the year in one region, and then removing to another for the balance of the year. One patient will do well in one place and the next patient will do poorly, simply because the climatic conditions are not suitable for the case. We should judiciously shift a patient about from place to place, if necessary, until recovery has occurred or until the disease has become latent, and then it becomes a serious question as to whether we should advise a permanent residence almost anywhere in the Rocky Mountain region, where one can live and round out a long and useful life or to allow the patient to return to eastern climate and environment. With very few exceptions, those returning will sooner or later redevelop tuberculosis. Should they return, they should be most emphatically advised to flee for their lives at once on the first manifestation of their former disease. Too frequently patients, in their anxiety to return to eastern homes, do so before the disease is entirely eradicated or health perfectly restored. The result is a rapid recurrence of the disease, and a second struggle for life, which is often futile.

DISCUSSION.

Dr. ARNOLD C. KLEBS.—Dr. Waxham's personal observations in the different places are certainly of great value. The places of which he speaks are all in more or less elevated regions. Altitude has apparently become the chief requirement of a desirable climate for such cases, and I believe it is necessary to analyze its active factors more exactly, and not only by empiric deduction. The principal reasons why high altitudes came into vogue are apparent absence of the disease among inhabitants of these regions, germ-free air, and absence of organic decomposition, as also pointed out by the speaker. Of almost all high altitude resorts I know it to be especially true, for the well-known resorts in Switzerland—Davos, Arosa and others—were first recommended and their great value for tuberculous patients insisted upon, by reason of such local immunity. Similar ideas prevail here as to the Rocky Mountains and other elevated regions. But this theory of local immunity had to be abandoned, as it was shown conclusively by able statisticians that its prevalence decreases in direct proportion with the density of the population. The apparent immunity is, therefore, due only to the sparsity of the population and also to the mode of life in those altitudes, which opposes due introduction of all disease to a great extent. We have to concede the value of an aseptic atmosphere, which contains no or little organic admixtures, although the presence of minute inorganic particles in the form of fine granite dust, suspended in the air by the ever-present winds, is not a very desirable feature; but under no circumstances can we admit a specific influence of the air, or even a local immunity. The value of these climates lies in quite a different direction.

Since this theory necessarily had to yield, a new one has been brought forward and its practical application was eagerly adopted. It is the effect of altitude and especially of rarefied air on the composition of the blood. Viault found in Peru and Bolivia, at an altitude of 14,000 feet, and also in Arosa, at 8000 feet, an increase of red corpuscles. Regnard, at the Sorbonne, in his pneumatic cabinet, noted the same increase, but it was especially Miescher, and his school in Basel, who made extensive investigations seemingly conclusive in character. These investigations inferred either a greater concentration of the blood, due to the greater dryness of the atmosphere, or as especially sustained by the most recent workers on this subject, Schauman and Rosenquist, of Helsingfors, who believe that a new formation of blood cells takes place under the influence of rarefied atmosphere.

An acceptance of this theory would infer that in order to improve the composition of our blood we have merely to increase the altitude of our habitation sufficiently, which would at once settle the question as to the value of high altitudes. But important evidence to the contrary has accumulated. The well-known physiologist of Turin, Angelo Mosso, has recently published the results of his very careful and exhaustive observations in different altitudes of the Monte Rossa group (5000, 8000 and 15,000 feet) He comes to the conclusion that, provided always the same conditions of life are preserved, there is a temporary increase of red corpuscles and hemoglobin, but that this subsides soon, until the normal amount is reached, and in a prolonged sojourn under certain conditions even anemic proportions are reached, as Jourdanet had pointed out in 1875. Mosso believes that the theory of new formation of corpuscular elements or a concentration of the blood is a faulty one, and that the rarefied air has only an influence on the nervous system by producing a different distribution of the blood in the body; and, indeed, Cohnstein and Zuntz were able to reduce the number of red cells in peripheral areas by two to four millions, by lesion of the medulla. As long as we can not take the total quantity of the blood into our calculations, the blood counts of the peripheral capillary system have only relative value, and Mosso's objections must be considered as seriously affecting the conclusions drawn by previous observers.

It has also to be noted that other external influences than rarefied air affect the blood count, as, for instance, cold baths, and, as recently observed by one of Kronecker's pupils, exposure to sunlight, producing polycythemia.

It has been a common experience for us to observe at an altitude of 400 feet, in Alabama (Citronelle), where I made regular blood counts of almost every patient throughout three years, during the first days after arrival a numeric increase of red cells; also in

those coming from higher altitudes. We have similar reports from sea-coast resorts and other localities of no or inferior altitude, which shows that certain changes of locality alone are able to produce similar results to those in high altitudes. The objection (I believe Gottstein's) to the use of the ordinary counter in rarefied atmosphere, as affecting the results, must also be taken into consideration.

We will always find in practice cases which seemingly contradict all theory, still every condition should be taken into account, and we certainly have to aim for a more exact basis for our endeavors. I believe Dr. Waxham is basing his opinion of the great value of the altitude climates mostly on impressions, which I am certain are correct, but objectionable for general application. A consumptive can get well or die in almost any climate; the factors which mostly influence the issue are mode of life, occupations, dwellings, food, and last, and probably least, atmospheric conditions. Conceding the relative value of climate in the treatment of tuberculosis, my principle, in advising a change of locality is: to remove from city or town into the open country; to select an appropriate place, and especially the right man capable to supervise such régime, as is most essential in every case. The ability of one man in managing these cases has greater importance than the often minute atmospheric differences between certain resorts. The indiscriminate dispatch of patients, without most minute directions and a personal knowledge of local conditions, must be most strongly objected to.

But in the management of the large majority of cases, distant climates do not come under consideration at all, and for these patients we can do as well right here on the spot, and I am sorry Dr. Waxham does not give our much-abused Chicago climate a little credit. I consider that we have a very fine climate here; there are objectionable features, but where are they missing? Sanatoria are built now-a-days to give opportunity for the use of twenty-four hours' open air almost anywhere, and the results in such institutions—the only reliable statistics over long periods, we have from them—should be much better known among physicians. Fifty miles distant from this city plenty of localities with a fine atmosphere could be found, where, with an appropriate system, just as good, if not better, results could be obtained than in the open resorts in the regions so ably described by Dr. Waxham.

Dr. HENRY B. FAVILL.—As to the remarks of Dr. Klebs, for whose opinion I have great respect on account of his large experience in dealing with cases of tuberculosis, it rarely falls to my lot to hear so many statements with which I so absolutely disagree. I am just as positive in my opinion as he is positive in his expressions, that climate is for us, in the handling of our business, a *sine*

qua non, and that we cannot afford in this country to forego the advantages offered by the great south-west any more than we can forego the advantages of any other decided and pronounced therapeutic measure. The why of this I will not consume your time to discuss. I have no doubt that under any sort of favorable conditions in these places consumptives will recover, partially, or their lives will be prolonged, according to the stage and conditions of the disease, who would here die, no matter what was done for them, and no matter how well it was done. I have not the least idea but that we can prolong their lives by any system of hygienic management, if carefully carried out here in this climate, but it cannot be accomplished in one-tenth of the time it can be in the great south-west resorts. My experience and observation—every man is more or less his own guide—are absolutely in this direction. I have many patients in the great south-west to-day, and Drs. Robison and Wells have likewise—patients who we know would have been dead and buried long ago in this climate, and patients who in their hearts feel profoundly grateful to us for having made sufficiently early diagnoses to send them there.

Dr. EDWARD F. WELLS.—So far as the climatic treatment of consumption is concerned, I am satisfied that, for the great majority of tubercular patients, the best climate is their home, wherever that may be. I will modify this statement by saying that the great majority of tubercular patients are not able, financially, to avail themselves of the real advantages of climatic changes. Consumptives, as a rule, are persons of a finer mold than the ordinary, with strong attachments to friends, home and surroundings, and they demand more luxuries and necessaries than the average person does. It can only be a great cruelty, if nothing more, to send such a person far away from interests, friends and home, with a meager pocket-book, and expect him, with nostalgia as a fellow guest, to improve in a cheerless boarding-house in the far south-west. This does not apply to those who are able, financially, to surround themselves with friends, necessaries and luxuries, and to avail themselves of the real advantages of climatic change; neither does it apply to those of lesser financial means, but who are naturally good travellers, and who can readily accommodate themselves to their surroundings in any place.

There are certain theoretic and practical reasons why an elevated region should be better than our own for tubercular patients: 1. The air is purer than it is here, and it is necessary to inhale a large quantity of it to maintain life. There is naturally a large surplus of lung tissue which is not used at our level; not all of it is used at any level at which man can reside, but a much larger proportion of it must be used at an elevation, say like that of Santa Fé, than at the elevation of Chicago. Deeper inspiration

opens many little air-spaces that may be agglutinated with inflammatory products and be the nidus for the tubercle bacillus. Again, patients in elevated regions of the south-west are much less liable to subsequent or further reinfection, because tubercle bacilli are less apt to live in an elevated region than here, on account of the great amount of sunshine. In other words, the atmosphere is largely germ-proof and free from germs, and this, of itself, must have a profound effect upon a tubercular patient. The same conditions render bacteria, other than the bacillus of tuberculosis, prevalent to only a slight extent, or absent. One of the great dangers of tuberculosis is the multiple infection by the staphylococcus, etc., and not simply by the tubercle bacilli.

With reference to the increase in the number of red blood-corpuses and hemoglobin, I would like to ask Dr. Klebs, or the reader of the paper whether the method of Hammerschlag, of estimating the hemoglobin and iron contained in the blood by taking its specific gravity, and Daland's method of estimating the number of red blood-corpuses, are not preferable to the use of Fleischl's apparatus and the Thoma-Zeiss cell. I am inclined to think that the trend of opinion is toward laying stress upon the specific gravity of the blood rather than to depend upon the color tests for the amount of hemoglobin it contains. If its specific gravity is known, a simple calculation will give the amount of hemoglobin and the amount of iron.

In conclusion, I heartily agree with much of what Dr. Waxham has said, but I cannot concur in the subtle current running through his paper that climate is, unreservedly, the only and best remedy we have in tuberculosis, because it is not applicable to a large proportion of our tubercular population. It may be a perfectly legitimate opinion for a member of the medical profession to have, but, in my opinion, it is an unfortunate belief for the lay portion of our community to have that the only safety for their tubercular relatives and friends is the fleeing to high altitudes.

Dr. JOHN A. ROBISON.—I wish to relate one experience that I have had in sending patients to a high altitude and its effect upon the hematopoietic processes. I had under my care two young women with predisposition to tuberculosis. About two years ago one became profoundly anemic, and there was a slight tubercular deposit in the right apex. I sent her to Mont Claire Sanitarium, at Manitou. She remained there all winter and the following spring, and since returning to Chicago has been in perfect health. I never saw such a transformation, with the exception of that in her sister. When she went to Manitou she was chlorotic, her lips were almost bloodless. When she returned she had rosy cheeks, had gained in flesh, the tubercular deposit had apparently cleared up and she has been in perfect health since.

Last winter her sister became chlorotic, but there was no deposit in the lungs, and I sent her to Manitou. She returned in the course of a few months, having gained fourteen pounds. Her cheeks were rosy, her lips red, and she has retained her health ever since. These are two examples which show that the change of climate from Chicago to Colorado quickened all the blood-making processes, and it did not require a blood-count to demonstrate it.

I was glad to hear Dr. Waxham insist upon patients making their plans when they go to Colorado, New Mexico or Arizona, to live there. This is an important point. When Dr. Solly delivered an address in this room, I asked him the question, whether a tubercular patient in moving to Colorado should not remain there, and I was much surprised to hear him say, "No; not necessarily." He said that after they had been there for two or three years they could go east.

I wish to ask Dr. Waxham a question in regard to Phoenix. For a number of years this place has had a great reputation, but is it not true that it is somewhat on the wane on account of the fogs due to irrigation, and lack of hotel accommodations and good boarding-houses? I would also like to ask him whether he knows anything about the town of Eddy in the Pecos Valley, for consumptives?

Dr. LISTON H. MONTGOMERY.—In the two cases cited, that were sent to Manitou, what therapeutic measures, if any, did you use?

Dr. ROBISON.—I treated the first case several months; gave her the usual remedies for anemia, without any notable results. When they went to Manitou neither of them took any medicine.

Dr. WAXHAM (closing the discussion).—With all due respect for Dr. Klebs' opinion, I must heartily agree with Dr. Favill with reference to the advantages of climatic treatment of tuberculosis. I believe it is the only treatment that promises the hope and expectation of almost certain recovery in incipient cases. I have seen so many patients recover as a result of a suitable change of climate that I am convinced of its great utility. It is not only altitude, but it is sunshine and warmth which enable patients to live outdoors in certain climates, where they cannot in others. For example, I was surprised this morning to learn that there had been but four sunshiny days in Chicago during the month of March. In this climate tubercular patients cannot get the advantage of much sunshine or much outdoor life, which they could get if they were in New Mexico, for during this season of the year they could sit outdoors all day long and drink in the sunshine from morning till night. I think I made it clear in my paper that I did not advise all patients to flee from this climate, for we all know that a great majority of patients, as Dr. Wells has pointed out,

cannot take advantage of a change of climate, and I urge against sending patients away who are unable to financially provide themselves with every means of comfort. I have frequently emphasized the importance of not sending such people away from home.

In answer to Dr. Robinson's question with reference to Phœnix, I do believe that Phœnix is not considered with as much favor now as formerly. Indeed, most of my patients have done poorly at Phœnix, and I have been at a loss to account for it, unless it has been that they have but little altitude, only 1100 feet. In Phœnix it is warm and mild, and there is a great deal of irrigation and poor drainage. In addition to that, the accommodations are rather poor. I believe that Tucson is very much better located; it has an altitude of about 2500 feet. Oracle, I consider one of the best places in all the south-west; it is thirty-eight miles from Tucson, has an altitude of 4500 feet, is protected from the winds by the surrounding mountains, and the climate is almost perfect. The only disadvantage is a long ride of thirty-eight miles from Tucson. Las Cruces is almost equal to Oracle. It is especially suitable for tubercular cases that cannot stand a very high altitude. It has an altitude of 3600 feet; the climate is superior to that of Phœnix. In regard to Eddy, located in the Pecos Valley, the climate corresponds almost identically with that of Las Cruces, excepting that it has less altitude. There is the same large amount of sunshine, same warmth and mildness, and, in short, the climatic conditions are very similar.—*Jour. of Amer. Med. Asso.*

A CASE OF FACIAL ERYSIPELAS TREATED WITH ANTI-STREPTOCOCCIC SERUM.

BY DR. C. W. HEWSON, AMHERST, NOVA SCOTIA.

Miss G. H., aged 20, was suffering from a severe attack of facial erysipelas, when, after administering tr. ferri perchloridi, and using the usual external remedies employed in such cases for two or three days, persistent vomiting set in, and she could not even retain a teaspoonful of cold water. Having heard of anti-streptococcic serum, I resolved to try it, and procured one vial (P. D. & Co.), 10 cc.; gave 5 cc. hypodermically, repeating in about six hours after giving the first dose. Found marked change in symptoms, temperature and pulse both improved, and in twenty-four hours temperature and pulse both normal. Vomiting had ceased, and she could open both eyes, which she had been unable to do for days. She had previously a discharge from left ear, from result of la grippe, symptoms of which showed a marked improvement. It is now seven days since using the serum and there are only a few scars from the erysipelas remaining.

THE PATHOLOGY OF GONORRHEA.—Leleneff (*Vratch*, No. 4, 1898) finds that gonococci have a most destructive action on cellular protoplasm, causing it to degenerate and liquefy, leaving only a feeble staining, vacuolised nucleus. As similar changes have been observed both in cells containing gonococci and in those in cells free from them, this destructive action must be due to some toxins produced by the gonococci. The latter chiefly invades epithelial cells and leucocytes. The presence of gonococci in the protoplasm of white blood corpuscles can partly be accounted for by the theory of phagocytosis; but that this is not the sole explanation is evident from the fact that the germs of gonorrhoea have been found to multiply inside these corpuscles, and to destroy its protoplasm. It was formerly supposed that gonococci only invaded columnar epithelium, and did not penetrate deeper than the submucous layer. It is now proved that they may invade squamous epithelium and connective tissue, and even penetrate between the bundles of muscular fibres. Thus gonococci have been found in the urethra of both sexes, in the vagina and cervical secretion, in the body of the uterus, in the pus of pyosalpinx, in the bladder and kidneys, in the cavity of the mouth and nose, in the ear, in the joints, in endocardial vegetations, and in the blood. Gonorrhoea is a general infectious disease, and gives rise to certain general symptoms. Such are a rise of temperature and an increase in the number of leucocytes in the blood during the acute stage, and a decrease in the number of red corpuscles during the chronic stage. There is also observed a fall in the weight of the body. In addition to these general symptoms any system in the body may suffer. Besides the swelling of the lymphatic glands, chiefly in the genital region, the spleen has been found enlarged in a number of cases. If the gonococci gain access to the blood they may cause organic diseases of the heart, such as pericarditis, myocarditis, and endocarditis, or functional disorders like tachycardia, palpitation, and angina pectoris. Inflammation of the aorta, inflammation of the veins, infarcts in the spleen, peliosis rheumatica, and epistaxis are other disturbances of the circulatory system which have been observed. The respiratory system is sometimes affected, and then we find pleurodynia, or even pleurisy, with effusion containing gonococci. In the alimentary system we may get stomatitis, loss of appetite, all kinds of gastrointestinal troubles accompanied by jaundice and fever, and sometimes resembling typhoid. Albuminuria, gonorrhoeal pyelitis, and gonorrhoeal nephritis have been met with, but their pathology has not been sufficiently investigated. The nervous system suffers early, and the following affections have been observed: (1) Changes in the sensory nerves causing anesthesia, hyperesthesia, paresthesia, and pains in the nerves, in the skin, in joints, in muscles, and in internal organs; (2) changes in the vaso-

motor nerves causing hyperemia, anemia, paralysis of vessels, and dermatographism; (3) changes in the secretory nerves causing increased or diminished sweating, local sweating, an increase in the flow of mucus from the urethra, etc.; (4) changes in the trophic nerves causing some forms of skin disease, atrophy of the testicle, and muscular atrophy; (5) changes in the motor nerves, causing paresis, paralysis, and twitchings; (6) changes in the skin reflexes and tendon reflexes. Gonorrhœal affections of the central nervous system give rise to a variety of symptoms, such as asthenic neuropsychosis, neurasthenia, hemiplegic phenomena, etc. Lastly, the skin of gonorrhœal subjects is often affected with erythema multiformæ, dermatitis, hemorrhagic purpura, urticaria, horny excrescences, local ichthyosis, keratosis of the soles of the feet, alopecia, areata, and chloasma.

THE VALUELESSNESS OF DRUGS IN THE TREATMENT OF GOUT.—Dr. Arthur P. Luff (*Lancet*, 1898, No. 3902, p. 1606) states that the treatment of this disease by alkalies is mainly based on the assumption that uric acid is present as such in the blood and tissues, and is rendered soluble by the administration of alkalies; that uratic deposits of sodium biurate are dissolved by alkalies, and that the system of a gouty person is pervaded by a general acidity which is neutralized and removed by alkalies. With regard to the first assumption, it is now well known that in gouty subjects uric acid is never present as such in the blood and tissues, but is always combined with sodium as the quadriurate or biurate. The only way in which alkalies could beneficially affect the quadriurate would be to delay its conversion into the biurate. Experiments with an artificial blood serum to which potassium carbonate, potassium citrate, lithium carbonate, lithium citrate, sodium bicarbonate, sodium phosphate, piperazine and lysidin were added in solution showed that this conversion is not delayed. The following do not in the slightest degree increase the solvent power of the blood for gouty deposits: Potassium carbonate, potassium citrate, lithium carbonate, lithium citrate, sodium phosphate, piperazine and lysidin. Sodium bicarbonate slightly decreases the solvent power of the blood for gouty deposits. The assumption that in connection with gout there is a general acidity of the system, which causes a diminished alkalinity in the blood, is opposed to the results of recent investigations upon the subject. Klemperer showed that the alkalinity in the blood in gout is very little, if at all, diminished, and that corresponding variations in the alkalinity of the blood may frequently be met with in healthy individuals. Moreover, a diminution of the alkalinity of blood serum containing uric acid in solution does not facilitate the deposition of sodium biurate

from it, nor does a diminution in the alkalinity of blood serum diminish its solvent power. Experiments with sodium salicylate show that it has no direct action, either in delaying the decomposition of sodium quadriurate, or in effecting a solvent action on deposits of sodium biurate. The supposed solvent effect of sodium salicylate for gouty deposits does not, therefore, exist. The correct explanation of the increased elimination of uric acid in the urine during the administration of sodium salicylic is that salicylic acid unites readily with glycocine, and so conveys an increased amount of that body to the kidneys, where, by its combination with urea, an increased amount of uric acid is necessarily formed. This increased formation of uric acid is directly detrimental to gouty subjects, and on that account the salicylates are contraindicated in that disease. The general conclusions are that the ordinary alkalis, lithium salts, piperazine and lysidin are useless, and sodium salicylate is also apparently contraindicated in gout.—*Amer. Jour. of Med. Sciences.*

SEVERANCE OF SEVERAL TOES: WITH RESTORATION.—John Cooke Laurens (*New York Med. Jour.*) reports the case of a colored man who had been using a heavy axe and had cut through the heavy shoe he wore, and severed the metatarsal bone of the first toe just through the head and completely disarticulating the toe. The second toe was off entirely just in front of the metatarsal joint, and the third was cut and broken, but not off. Owing to the distance from the house he had to ride horseback more than a mile, and this, with the slowness of the messenger, caused a delay of four hours before the doctor reached him. The shoe and sock had not been removed, and the foot was elevated. The author cut the shoe away with the sock, and found that practically all hemorrhage had ceased, owing to the clots. When he examined the injury the second toe fell away in his hand, and the first toe was discovered to be hanging by a mere string of skin, every muscle and vessel being cut. As in all cabins, the room was small and ill-suited for hospital purposes, but it was decided to try the forlorn hope and replace both toes. The site of injury was washed in warm water and was found very dirty. No hemorrhage other than a slight oozing being present, the hot water was quite sufficient to stop it. The toes being quite warm from the mass of clot which filled the shoe, no time was lost in placing them in position and suturing the approximated edges, the needle being inserted deep enough to include the tendon on each toe. Interrupted sutures were used, as the foot was very rough and the wound in an awkward place for continuous work. A dressing of iodoform and boric acid, equal parts, was used, with plain gauze, and the foot bandaged

to a splint extending beyond both heel and toes. The iodoform was discontinued after the first day, as it inflamed the part too much, and the plain boric acid was substituted. In spite of the disadvantages of lack of attention, care, etc., union by first intention occurred over more than half the injury, and there was but little pus where granulation took place. On the third day sensation was present in both toes, and in week the patient could move them a little on the splint. The stitches were removed on the tenth day, and a good recovery was made. In July the toes were reported to be strong and movable; sensibility was perfect, and, save for a little tenderness, the man said his foot was as good as ever.

ANTITOXIN TREATMENT OF TETANUS.—Kleine, of Quincke's clinic (*Deut. med. Woch.*) records two cases of traumatic tetanus which recovered under the use of Behrings' tetanus antitoxin. They were both typical examples of tetanus. The first case, in a man aged 50, was one of medium severity, and followed a chronic course. The exact date of the infection could not be ascertained. The first injection of the antitoxin was given a week after the onset of the first symptoms. Forty-eight hours after the injection the neck could be freely moved. Steady improvement then set in, so that the patient was well a week later. Perhaps the delay in the improvement for forty-eight hours was due to the slow absorption of the antitoxin from the subcutaneous tissues. The patient was an elderly, corpulent individual with irregular cardiac action. The other patient was a boy aged 9 years. Although the incubation period was rather prolonged, yet the case was a severe one. The wound was in the foot. Improvement set in twenty-four hours after the third injection at a time when nearly all hope of recovery had been abandoned. In this case the antitoxin appeared to be the sole cause of the recovery. A large urticaria-like eruption appeared on the sixth day after the last injection. The first case received in all 1,000 units, and the second 400, distributed in both cases over three doses. In both cases the comparatively insignificant local lesion was excised. The tetanus bacillus was found in the first case, and mice inoculated with the infected tissue developed tetanus. The inoculation experiments in the second case gave negative results, but here the tissue had been bathed in sublimate solution.—*Brit. Med. Jour.*

FLEINER'S TREATMENT OF HYPERCHLORHYDRIA.—Olivetti (*Therapeut. Monatshefte*, April, 1898) has investigated the results obtained by Fleiner's method of treating hyperchlorhydria. This consists in giving large doses of subnitrate of bismuth

($2\frac{1}{2}$ to 5 drachms) suspended in water through the œsophageal tube, when the stomach is empty before breakfast. The whole course lasts twenty-two to twenty-five days, the total quantity of bismuth used being as much as 10 oz. The writer's cases included cases of hyperchlorhydria with evident ulceration, as well as some where the ulceration was presumably absent, and his investigations show that : (1) The treatment is well borne and leads to a distinct subjective improvement, which lasts some time after discontinuing the treatment. (2) The improvement is not permanent, but lasts longer in cases accompanied by ulceration. (3) The bismuth has no distinct effect on the gastric secretion or movements. The secretion of HCl in hyperchlorhydria is also influenced but slightly, and the small decrease is not enough to account for the improvement in the other symptoms, such as pain and vomiting. These results are not in accord with those of Fleiner himself, who in one case observed a gradual reduction of HCl from 4 to 1 per 1,000, in another from 3 to 0.98, and in a third from 2.9 to the normal. To explain the disappearance of the painful symptoms and their speedy reappearance when the bismuth has passed into the intestine, Olivetti accepts Fleiner's theory that the bismuth forms a protective film on the surface of the mucous membrane, so that the abnormally acid gastric juice no longer comes into direct contact with it.

SUPPURATIVE EPIDIDYMITIS AFTER TYPHOID FEVER.—Strasburger (*Munch med. Woch.*) reports the following case. A shepherd's boy, aged 24, suffered from a bad attack of typhoid fever. Not until the end of five weeks and a half did the temperature fall to normal. Within a fortnight the patient had a gumboil, numerous furunculi, and a large abscess in the right buttock. All healed after the evacuation of the pus, in which no micro-organisms could be detected. During the third week after complete deferescence, the patient suffered from pain in the right testis and groin. On examination, characteristic epididymitis was discovered; the temperature rose to 100.5° , but fell in a few days. The swelling, however, remained stationary till nearly a month after the local complication began; two fluctuating points were noticed on palpating the inflamed epididymis. One was punctured with every precaution, so that examination of the pus might be made; both points were then incised, much thin sanious pus escaping. The incisions were packed with iodoform gauze. Pus escaped for a fortnight, then the wounds began to close. The epididymis adhered to the scrotum, thickened around the fistulæ, and remained tender and hard at several points, but was almost reduced to its normal size. After careful microscopical research, organisms bearing the

character of the typhoid bacillus were discovered in the pus from the abscesses in the epididymis. Curschmann has collected six reported cases of inflammation of the testicle and epididymis after typhoid, but in none did suppuration occur. Ollivier reports six instances of abscess. Fraenkel has published a case of suppurative epididymitis and prostatitis complicating typhoid. In Girode's case this complication occurred during the third week of a severe attack of the fever. Strasburger discusses the bacteriological aspect of the suppuration of the epididymis.—*Brit. Med. Jour.*

ADDISON'S DISEASE IN CHILDREN.—Addison's disease has generally been considered rare in childhood. Deziret, has, however, collected a series of observations (*Jour. de Méd.*) showing that it is not so uncommon as is supposed. He has collected records of forty-eight cases, the youngest being seven days' old, and the age of the eldest included in the series was fourteen and a half. Almost invariably the condition is due to tubercle. The earlier symptoms of the condition are extremely vague, consisting either in extreme weakness, which does not, however, coincide with any loss of weight or anemia. In other cases gastro-intestinal symptoms, such as nausea, vomiting, diarrhoea, constitute the earliest manifestations, and of all the cases collected by the author these symptoms were usually present. On the other hand, pain and pigmentation are particularly uncommon in the child. Convulsive seizures are usually met with in the infantile form of Addison's disease. Intermissions are sometimes observed, and as a rule the course of the disease is more rapid than in adult years. The author has attained some fair results with suprarenal medication.

LOCAL ANESTHESIA AND ARTIFICIAL ISCHEMIA.—Braun (*Centralbl. f. Chirurgie*) holds that the arrest of the supply of blood to a limb by Esmarch's method, is both a useless and a dangerous adjunct to any plan of producing local anesthesia. In discussing the practice recently advocated by Kofmann of rendering bloodless the seat of a proposed operation and then injecting a solution of cocain, he asserts that an artificially-produced anemia does not by itself affect the organs of painful sensation. The action of cocain or any other local anesthetic injected into the tissues may, however, be intensified by the condition of anemia in consequence of the arrested absorption of the anesthetic solution. If local anesthesia be absorbed after the simple production of local ischemia, such a result is due not to the cutting off of the blood supply to the benumbed parts, but to a dangerous compression of the sensory nerves.—*Brit. Med. Jour.*

Correspondence.

To the Editor of DOMINION MEDICAL MONTHLY.

SIR,—Herewith I send the results of an examination of the pelvic organs of thirty-one female inmates of ——— Asylum. This examination was made at the request of the medical superintendent who, for some time, has been convinced of the absolute inadequacy of ordinary asylum methods. Anesthesia was used only with refractory cases, and the subjects for examination selected on account of their superior physique and comparative intelligent expression. Of the cases examined eleven were single, and twenty married or had borne children. Of the single, distinct pathological conditions were found in each case; of the married, two only were apparently free from pelvic disease.

In the single, the following conditions were found: Retroversion, 1; enlarged ovaries, 4; enlarged (congested) uterus, 1; adhesions, utero and salpingitic, 3; conical os, with atresia, 4; erosion of cervix, 1; acute antifixion, 1.

In the married, the following conditions were found: lacerated perineum, 11; lacerated cervix, 12; retroversion, 5; adhesions, utero and salpingitic, 8; fibroid of uterus, 2; subinvolution, 2; enlarged ovaries, 5; adhesions of clitoris, 3.

In the term "lacerated perineum" are included those cases in which the muscular structures are torn to the sphincter.

Since there are not a few pathological conditions of the pelvis that can with difficulty be diagnosed under anesthesia and others—varicocele, microcystic degeneration of ovarian tissue, etc.—that exert a most direct influence upon the nervous system, it is more than probable that the diseased conditions found fall far short of those actually present. So convinced am I of the effect upon the nervous system of minute lesions that I consider no examination thorough without intra-abdominal exploration. If Dr. Ross is correct when he states that sudden, localized abdominal pain with vomiting and rigidity of the rectus are indications for opening the abdomen, and he is correct, who so void of sympathy and so ignorant of modern medicine as to question the reasonableness of intra-abdominal exploration of the pelvic organs when adequate cause cannot be determined elsewhere in a disease that condemns a patient to years, if not a lifetime, of seclusion and restraint. Is not mental disease sufficiently serious to justify resort to all possible means of diagnosis?

It is not presumed to state that the pelvic condition found in these thirty-one asylum inmates is the cause of their mental trouble. I have merely stated what was found upon physical

examination. The reader may draw his own deductions. One question I ask, in conclusion, upon the supposition that the insanities of these unfortunates do not depend upon, or are not intensified by, the pelvic disease, and are as fixed as the delusions of those who repudiate what has been done in this department by Manton, Rohé, Hobbs and others: Is not the burden of mental trouble sufficiently great without the additional physical distress? If so, then let us treat those within the asylum as considerately as we treat those without.

Victoria, B.C.

ERNEST HALL, M.D.

To the Editor of DOMINION MEDICAL MONTHLY.

SIR,—In your report of the meeting of the Simcoe Medical Association, in your April issue, we are told that it was moved by Dr. Wells, seconded by Dr. W. A. Ross, "That in connection with the damages recently imposed upon Drs. Anderson, Garrett and Harris, for performing a post-mortem under sanction of a coroner, Resolved that our representative, Dr. Hanly, be instructed to bring the matter to the attention of the Medical Council advising an appeal or other action by that body."—Carried. This is an important matter. If the post-mortem was performed "under the sanction of the coroner," the imposition of damages on these gentlemen is a gross injustice, an outrage of the worst kind, and I think both the Medical Council and the profession at large should take the matter up and see that justice be done, if possible; and if not possible then relieve these gentlemen from the effects of the injustice by paying all fines, costs, etc. On the other hand, if there was no "sanction of the coroner" I think these gentlemen ought to be severely censured by the Council and profession at large. If the plaintiff's story, as given in the daily papers be true, the conduct of these gentlemen in making a post-mortem without proper authority, and without consulting the husband of the deceased, was disgraceful. A greater outrage is inconceivable. Before the profession is asked to pass judgment we ought to be furnished with a correct report of the evidence. This I have never seen; the newspaper reports I read at the time differed materially. Could not the medical journals give us a true report?—without which it is impossible for any of us to know where the blame lies. I did not see the coroner's evidence. Surely, if he issued a warrant there must be some way of tracing it. If he issued one the three gentlemen who performed the post-mortem are blameless; if he did not, they ought to be thankful that they escaped so easily.

Yours,

JUSTICE.

Issued April 21, 1899.
P. H. BAYCE, Secretary.

MONTHLY REPORT.

Issued by the Provincial Board of Health of Ontario for March, 1899. Showing the deaths from all causes and from Contagious Diseases in the province, as reported to the Registrar-General by the Division Registrars throughout the Province.

YEAR.	MONTH.	Total population of province	Total deaths reported from all causes.	Rate per 1,000 from all causes.	Scarlatina.	Diphtheria.	Rate per 1,000	Measles.	Rate per 1,000	Whooping cough.	Rate per 1,000	Typhoid.	Rate per 1,000	Tuberculosis (Consumption).	Rate per 1,000
1899....	March	2,288,182	*2,361	12.1	36	25	0.2	2	0.1	9	0.05	17	0.09	235	1.2
		Total population reporting 730 99%													
1899....	February	2,287,882	*2,568	13.7	32	35	0.1	2	0.2	3	0.01	16	0.08	215	1.1
		Total population reporting 725 93%													
1899....	January	2,282,053	*2,154	11.6	23	48	0.1	5	0.3	9	0.05	21	0.1	184	1.0
		Total population reporting 717 92%													

YEAR.	MONTH.	Total population reporting.	Total deaths reported.	Rate per 1,000 from all causes.	Scarlatina.	Diphtheria.	Rate per 1,000	Measles.	Rate per 1,000	Whooping cough.	Rate per 1,000	Typhoid.	Rate per 1,000	Tuberculosis.	Rate per 1,000
1898....	March	1,726,250	197	....	26	27	0.2	4	0.2	1	0.007	10	0.07	129	0.9
		Total population reporting 621 67%													
1898....	February	1,733,326	224	....	15	38	0.1	9	0.3	10	0.07	19	0.1	133	1.0
		Total population reporting 553 70%													
1898....	January	1,813,453	238	....	16	51	0.1	4	0.3	8	0.05	13	0.08	146	1.0
		Total population reporting 582 75%													

*The months of January, February and March, 1899, include deaths from all causes, but the other months from contagious diseases only.

DOMINION MEDICAL MONTHLY

AND ONTARIO MEDICAL JOURNAL

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No. 5.

THE ASSAULTS IN THE SOUTH.

It is with more than ordinary pleasure that we have read an editorial in the *Maryland Medical Journal* on this subject. It is entitled, "The Negro and his Sexual Passions," and goes on to say:

"The annual recrudescence of sexual passions in the negro, as demonstrated by the recent horrible assaults on white women, seems to increase in force and frequency as the African sexualist is more and more allowed the liberty of his sway of ancestral animal impulse, and as moralists continue to remain purblind to his dominant physiological organism—a dominant organism which is demonstrated by periods of sexual excitement which operate under a license of passion seen only in the wild beast. In fact, when in captivity the wild beast becomes sexually impassioned, he is either killed or sent away where he can be controlled. It is not the function of this Journal to enter into the sociological or the anthropological questions governing the crime of indecent assaults on defenseless white women. The attitudes of complacent moralists, the preachings of far-distant ascetics, and the advice of maidenly moralists, whose nubile age is uncertain in the chilly atmosphere of New England, would be amusing were it not for the serious conditions underlying the misunderstood facts.

"The anatomical and physiological conditions of the African must be understood, his place in the anthropological scale realized,

and his biological basis accepted as being unchangeable by man, before we shall be able to govern his natural uncontrollable sexual passions. When education and religious teachings change the biological basis of his color it will also be able to change the physiological reason for his annual outbreak of sexual madness. Like all animal nature throughout the world, the African is especially sensitive to the changing seasons. The regular increase of crime against property in winter is only an indirect result, through the social and economic influences of temperature, but the increase of crimes of passion and indecent assaults during the month and years when the temperature commences to rise is the direct effect of temperature. The crime of rape is most numerous in May and June, and least so in November and December. Ignore the inherent and peculiar sexual organization of the African and crimes against the trembling white women of the South will increase. Accept boldly, frankly and scientifically his ancestral traits, and control him accordingly, is the only rational, safe and moral treatment of the negro question."

What they say of what may be termed the Northern attitude is perfectly true, and what is just as certain is that the Northern attitude is absolutely wrong. Where our Maryland friend makes the mistake, however, is in, as usual, drawing the distinction between the white and the black. The same physiological instinct is subject to the same stimuli in quadrupeds and bipeds—be they white or black—in the South or North; for is it not a Northern poet who has said: "In the spring the young man's fancy lightly turns to thoughts of love."

The deacon who goes to town and stays in the mission rooms, the gentleman who goes to Paris and drives from his hotel to the Louvre, the noble scion who comes to New York and does not visit the tenderloin are all examples of the effect of civilization upon the white. He is taught to restrain himself from boyhood and not give way to those imperious demands of nature which send the negro animal through the cane breaks like a bear in rut.

There is no doubt that we have to deal with the problem upon the lines laid down by the *Maryland Journal*, but the more strongly they take this attitude and the necessity for treatment along these lines, the more absurd is the present method of procedure; for it is apparent that hanging one negro is not going to emasculate the colored males of the South. We have noticed, however, that the Northern outcry has ceased to be as vigorous as it once was; perhaps they have decency enough to recognize that they are to blame for the present condition of affairs in the South by turning loose upon the country millions of uncultured, untrained savages without machinery for the protection of the people left to their mercies. It is a well-known fact that nowhere were women so safe and fearless as in

the South in ante-bellum days, and as those days have grown more distant and the shadow of white authority, which still persisted in the minds of the slaves for some years after the war, has vanished, we find these outrages on the increase. The South should be given a free hand to tend to this matter in their own way. For our part, we believe emasculation and transportation to be the best; but, as we said above, the South must find its own way.

There is no doubt that the centuries of training have produced among the whites a higher standard of individual right, so much so, that the old law of the survival of the fittest appears to have given way to the more modern idea that only the weaklings have a right to live; but what we have to face is not a theory but a condition. When the Northern enthusiasts freed the slaves after shooting half the male white population of the South and losing as many more of their own they have to stand supinely by and wink at so-called outrages by the whites upon the negroes, compared with which the worst whipped negro had a pleasant time. They freed the negroes to save them from their master and the slave whip. Why don't they send their armies now and save the poor negro from the stake and worse? The fact is, the North has discovered that freeing the negro was one thing, making him a citizen another. The Southerners are using the only means at hand, at present, to protect their women; but we trust they will find a more effective remedy. It must be the outcome of experience and should (in view of the tender sensibilities of the great Anglo-Saxon people, who murder thousands at Khartoum, in the Antilles and Philippines), appear to sit at the feet of justice, but sharpen her sword and take the bandage off her eyes so that, for once, she may see what she is doing.

THE ONTARIO MEDICAL ASSOCIATION.

The annual meeting of this association will be held in Toronto on the 12th and 13th of June. We have not yet received the preliminary list of papers, but we have no doubt they will be as good as those of previous meetings. We trust there will be a larger attendance than ever, and extend to the profession a most cordial welcome.

Editorial Abstracts.

SMEGMA BACILLI IN THE EXPECTORATION FROM THE LUNGS.

PAPPENHEIM, A.—The finding of smegma bacilli in the expectoration from the human lungs. (*Berl. klin. Woch.*, 1898, p. 809.) In the preputial secretion is found a group of organisms which react to stains very much like the tubercle bacillus; confusion in diagnosis may be avoided by examining the catheterized urine and by studying the morphological characters of the organisms. In the sputum, beside the tubercle bacillus, the only other organisms yet found which stain like it are the lepra bacillus and the hypothetical syphilis bacillus. The lepra bacillus is frequently deposited in cells and is more easily stained, and the clinical picture itself would lead to no confusion in diagnosis. Pappenheim reports the case of a woman thirty years of age, who had come to the clinic on account of persistent diarrhea. She had conceived five times. The second child was born at the tenth month of pregnancy, then followed two abortions. She denied syphilis and night sweats. By the use of anthelmintics the heads of three specimens of the *bothriocephalus latus* were passed, but the diarrhea still persisted. Cough, which had never been constant, became worse and a markedly purulent sputum was secreted. The examination of the lungs, which at first was negative, finally showed extensive dullness, with bronchial breathing, but the apices remained clear. During the last three days of her life the sputum showed red rods by Gabbett's method. The clinical diagnosis was tuberculosis pulmonum et intestini, while the post-mortem diagnosis was bronchitis chronica, bronchiectasis, double purulent broncho-pneumonia and a small gangrenous pulmonary abscess, with enteritis diphtheroides et follicularis ilei, coli, recti. Bacilli were present in the mucous of large bronchi, etc. They differed in appearance from ordinary tubercle bacilli, and were found only in circumscribed places, and in heaps like the tubercle bacillus in the urinary sediment in cases of genito-urinary tuberculosis. The bacilli themselves were stiffer and only really bent in one case. The "string of pearl" like appearance only seldom occurred. Culture experiments on glycerine agar and gelatine showed staphylococci in large quantities, and guinea-pigs were unaffected. Sections of the formol-frozen lungs failed to reveal red rods in the tissues; but, by avoiding alcohol in the decolorizing, red rods could be found in the alveoli between the cellular exudate. The characteristic criterion for the recognition of smegma bacilli on cover slips is not, as in the tubercle bacillus, the relatively difficult staining and decolorizing by inorganic acids, but especially by the easier and more rapid decolorization by

absolute alcohol. For a rapid and certain differentiation of the smegma bacilli and tubercle bacillus Ziehl-Neelsen's method is not suited, and while by Gram, Gram-Guenther and especially by Gram-Kuehne the tubercle bacillus remains colored and the smegma bacilli decolorize, yet they are unserviceable, as tetanus, lepra and various putrefactive organisms remain colored. The most satisfactory method of differentiating the smegma and tubercle bacilli is as follows: (1) Stain with boiling carbol fuchsin a short time. (2) Let the excess of carbol fuchsin run off. (3) Without washing, decolorize and counterstain by dipping three to five times in the following solution and then let it run off slowly, solution prepared as follows: 1 part of corallin is dissolved in 100 parts of absolute alcohol and then add methylene blue to complete saturation. Add 20 parts of glycerine. (4) After coloring with this solution wash in water, dry and mount. The whole procedure lasts scarcely three minutes.

NOURISHMENT IN ACUTE FEBRILE DISEASES.

V. LEYDEN, E.—Nourishment in acute febrile diseases. (*Ther. d. Gegenw.*, 1899, p. 7.) The old view was that the administration of food during febrile processes intensified the fever. Graves and Trousseau, however, took the opposite course and fed these patients well. During fever we have the following conditions: the mouth is dry, there is great thirst, the gastric juice is diminished, the motor activity of the stomach is lessened, the heart weakens, the renal function suffers, the urinary nitrogenous elimination is markedly increased, while the CO_2 elimination is only slightly changed. On account of the condition of the mouth and stomach, the food should be fluid and should only be administered in small quantities at a time and should have been cooked. On account of the febrile condition it should be administered cool, and large amounts of fluid should be given to stimulate the kidneys and thus carry off as much of the toxin as possible. The cardiac activity should be stimulated by alcoholic drinks. The increased nitrogenous elimination is a sign of increased tissue break-down, which of itself might cause death. This albumen metabolism is due partly to the loss of appetite, so that too small quantities of food are taken, but forcible increase of the food will not bring about equilibrium in the albumen metabolism, so that the bacterial toxin acts directly on the protoplasm of the organs, destroying it and rendering it incapable of assimilating. To avoid inanition one should give up to 2,500 calories; best as follows:

R Albumen..... 100 gm.
 Fat 100 gm.
 Carbohydrates 300 gm.

Milk is fluid, easily sterilizable, and has a high content in calories (650 to a litre); as it can be modified in various ways it is an ideal febrile food, in fact, the prognosis is better in cases where milk can be borne. Small amounts should be used at first and gradually increased; when large quantities are tolerated, various additions may be made. The initial quantity should be 100 c.c. (a wineglassful) four or five times a day, alternating with it water, lemonade, soups, bouillon, and, as an early morning drink, tea or coffee may be given. At times a little wine may be used. At first the total fluids should not exceed 3 litres. After two to three days 100 c.c. of milk may be given every two hours; later the amounts may be increased to 250 c.c. Most patients take with ease 2 litres a day. If the milk agrees, one may add milk-sugar and cream—750 c.c. milk to 250 c.c. cream, or 50 gm. milk-sugar to 1 litre milk. Wine is given in sufficient quantities to stimulate the heart ($\frac{1}{4}$ to $\frac{3}{4}$ litres a day). In case milk alone does not agree, it may be mixed with tea, coffee or chocolate, or milk meal soup, or milk may be given with peppermint, tea, etc., or cognac. In case the patient complains of the taste of the milk, boil it in a closed flask, with little air, according to Gärtner's method. In those cases where the milk is persistently vomited, meal soups must be the chief reliance. Usually solid food should not be used, but in case it is necessary cut it up as fine as possible. The diet should be continued the first day of the apyrexia, but on the third or fourth day it should be more abundant.

PHARMACOLOGY OF THE CHLORHYDRINES.

MARSHALL, C. R., and HEATH, H. L.—The pharmacology of of the chlorhydrines. A contribution to the study of the relation between chemical constitution and physiological action. (*Jour. of Physiol.*, 1897, v. 22, p. 38.) The introduction of chlorine atoms into a compound of the fatty series increases its narcotic power. It increases also its toxic power, unless the compound is greatly changed as regards its physical character, and especially its solubility. Thus dichlorhydrin is equally toxic with trichlorhydrin when the drugs are administered in the ordinary way, but dichlorhydrin is much more soluble; it is more rapidly absorbed and a larger quantity is present in the system at one time than is the case with trichlorhydrin. Owing to its solubility its irritant action is even greater than that of the trichlor compound. As in both cases death is the result of changes produced in the alimentary canal and kidneys, this apparent exception is explained. That the toxicity is really increased by the replacement of the hydroxyl of dichlorhydrin by another chlorine atom, is shown in their relative action on the heart and voluntary muscles, where the actions of complete

solutions of the drugs are obtained. The influence on muscular tissue rapidly increases with each increment of chlorine, and as far as the chlorhydrins are concerned, this action runs parallel with their power of producing narcosis. As a result of their action on muscular tissue the circulation is distinctly affected. By the higher chlorinated compounds the heart is more quickly paralyzed and the blood-vessels more markedly dilated than with those lower in the series. Thus, as far as the circulatory system is concerned, the introduction of chlorine atoms into a fatty compound produces a depressant effect, which is proportionate to the amount of chlorine present.

NITRITES AND OTHER PHYSIOLOGICALLY RELATED SUBSTANCES.

HALDANE, J., MARKGILL, R. H., and MAVIOGORDATO, A. E.—The action, as poisons, of nitrites and other physiologically related substances. (*Jour. of Physiol.*, 1897, v. 21, p. 160.) The nitrites convert hemoglobin, not simply into methemoglobin, but into what appears to be a mixture of methemoglobin and nitric oxide hemoglobin. This conversion is never complete in the living body. Putrefaction after death, or the action of a reducing agent, produces a further conversion of the whole of the pigment into nitric oxide hemoglobin. Excess of amyl nitrite converts hemoglobin into photohemoglobin. The action of nitrites as poisons is (in the animals experimented on) due to their action on the hemoglobin and the consequent paralysis of the oxygen-carrying power of the blood. In compressed oxygen this action is abolished and with very large doses nitrites then act as direct poisons to the tissues. In mice and rabbits nitroglycerine, nitrobenzol and hydroxylamin act as direct tissue poisons before producing symptoms due to decomposition of the hemoglobin or to nitrite formation; sodium chlorate has no specific poisonous action and does not affect the hemoglobin, while dinitrobenzol decomposes the hemoglobin into a product which is incapable of carrying oxygen, and so produces symptoms due to diminution of the oxygen supply to the tissues.

THE ACTIVE SUBSTANCES IN THE ADRENALS.

METZGER, L.—Contribution to the knowledge of the active substances of the adrenals. (*Inaug. Dissert. Giessen.*, 1897.) If all of the active substances in the adrenal are injected, there is a slight fall which precedes the rise in blood pressure. This blood pressure-lowering body is especially prominent if the dried aqueous extract of the adrenals has been heated to 140°; at this time the extract becomes very toxic and the blood pressure-raising body has

more or less completely disappeared. It is uncertain as to whether the blood pressure-lowering body pre-exists in the gland, or whether it is an artificial body. The blood pressure-raising body may be separated from the one causing a fall by the first being only soluble in warm, while the latter is soluble in ice-cold, alcohol. The active blood pressure-raising body is not brencatechin as Muehlmann supposed, although their chemical reactions agree closely. The active bodies may be completely extracted by 95% alcohol; from this extract, when concentrated, the active blood pressure raising body may be obtained in tolerable purity by precipitation with ice-cold ether. The elementary analysis of the body thus obtained shows carbon, hydrogen, nitrogen and sulphur. It is not an albumen, although it has a similar constitution.

[This is interesting only for the apparent presence of the pressure-lowering body. Abel has given us the chemistry of the other—ED. D. M. M.]

ACTION OF DRUGS ON THE TRACHEAL SECRETION.

CALVERT, J.—Effect of drugs on the secretion from the tracheal mucous membrane (*Journ. of Physiol.*, 1896, v. 20, p. 158.) Rossbach's method of studying the influence of drugs on tracheal secretion is open to the objection that, as his animals were apparently not anesthetized, the struggling would influence it considerably. Calvert used Rossbach's method (opening the trachea with the galvano-cautery and after drying off the tracheal mucous membrane noticing the interval before it became moist again) saving that he used an anesthetic. He finds that sodium carbonate and potassium iodide increase the secretion. The most striking increase was obtained with emetin. This action is independent of the blood supply, as the membrane did not become appreciably redder. Ice bags placed over the abdomen caused a dilatation of the tracheal vessels and an increase in secretion, while hot poultices similarly placed acted reversely. Saponin in small doses does not influence the secretion, while large doses diminish it, in all probability depressing the heart.

QUININE AND TANNIC ACID ON THE URIC ACID ELIMINATION

DANIEL, B.—The diminution by quinine and tannic acid of the increased uric acid elimination from the administration of thymus. (*Inaug. Dissert. Bonn.*, 1898.) In 1891, Horbaczewski proposed the view that uric acid owes its origin to the decomposition products of the tissues containing nuclein, especially the leucocytes, and that the amount of uric acid and the number of the leucocytes



Scott's Emulsion

is an emulsion of cod-liver oil,

Which contains the whole oil, all of it.

It is not a mixture of wine or alcohol with a little iodine and bromine.

It will not intoxicate nor lead to the alcohol habit.

It does not depend upon a stimulant for its therapeutic power.

It is, however, precisely what it claims to be:

*The Best Norwegian Cod-Liver Oil.
The Hypophosphites and Glycerine.*

Scott's Emulsion is a Food—not a stimulant.

Scott's Emulsion is a Fact—not an experiment.

Scott's Emulsion contains Fat—not a drop of alcohol.

Whenever cod-liver oil and the hypophosphites are indicated, we ask you to prescribe "Scott's Emulsion," always permanent and palatable.

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stand in intimate relation to one another. He found that quinine caused a diminution in the number of leucocytes and in the elimination of uric acid. The administration of thymus increases the uric acid output and increases the number of leucocytes, while quinine and tannic acid diminish both; so that the simultaneous administration of thymus and quinine, or tannic acid, should neutralize each others action on the uric acid elimination. This Daniel corroborates by auto-experiments.

ACTION OF TROPIN AND THE TROPEINES.

GOTTLIEB, R.—The action of tropin and of the tropeines. (*Archiv. f. exp. Path.*, 1896, v. 37, p. 218.) The ethereal salts, formed by replacing the acid radical of atropin with various other acid radicals, are called tropeines. Some of the tropeines, as acetyl-tropin and succinyltropin, act not merely quantitatively different from atropin, but its peripheral action might be entirely absent. There is a parallelism in the action of tropin and of the tropeines upon the vagus endings in the heart and upon the pupil. Tropin and the tropeines are cardiac irritants, an action which has not been proved for atropin. The action upon the heart is due to an increase of the excitability of the cardiac motor ganglia and thus explains the removal of the muscarin inhibition by tropin and the tropeines, which have not the atropin-like action.

PAMPHLETS RECEIVED.

- “Appendicitis.” By H. O. WALKER, M.D., Detroit, Mich.
- “Prostatectomy.” By PARKER SIMS, M.D., of New York.
- “The Bête Noir of the Vocalist.” By EDWIN PYNCHON, M.D.
- “The Absolute and Permanent Cure of Tonsillitis.” By EDWIN PYNCHON, M.D.
- “Three Years of Serum-Therapy in Tuberculosis.” By J. R. LEMEN, M.D., St. Louis.
- “Growing Children: Their Clothes and Deformity.” By E. NOBLE SMITH, F.R.C.S. (Edin.), L.R.C.P. (London.)
- “The Use of Nosophen and Antinosine in Purulent Disease of the Middle Ear.” By FREDERICKH MILLENER, M.D., Buffalo, N. Y.
- “The Etiology of Phthisis: A Summary of Scientific Points Involved in Churchill's Theory.” By R. W. GARDNER, New York City.