An Address ON DISEASES OF THE ORIFICES OF THE BODY.

WITH REMARKS ON LATENCY IN DISEASE AND
OVERLOOKED INFECTIONS.

DELIVERED BEFORE THE TOTTENHAM DIVISION OF THE
BRITISH MEDICAL ASSOCIATION.

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FROM time to time every clinician is confronted with cases suffering from some atypical complaint, or one the origin and explanation of which baffles all attempts to elucidate. Often, unfortunately, such cases end in an autopsy, and then one of two verdicts is usually arrived at: (1) A negative one, *no satisfactory or sufficient cause found*; or (2) some simple explanation is forthcoming, and this in the vast majority of cases is an overlooked infection of some one or more of the various small accessory sinuses of the mouth, nose, or ear, etc.—that is, some cul-de-sac of the gastro-intestinal or genito-urinary tracts; *invariably one of the mucous surfaces of the body* is at the root of the evil. Further, the infection in the vast preponderance of cases consists of one of the group of cocci, generally the streptococci¹ and staphylococci,² very often the pneumococci,³ not infrequently the gonococci.⁴

When we remember that in the majority of cases *post-mortem* examinations are incomplete, often necessarily so, and that, consequently, such anatomical structures and situations as the whole of the nasal accessory sinuses, the lacrymal duct and sac, portions or the whole of the urethra and prostate in the male, the vulva and urethra in the female, the middle ear, and even the tonsils, may be entirely overlooked, or examined in a perfunctory manner; when, in addition, we remember that many septic infections of mucous membranes leave only slight evidence in death, and this often equivocal, and easily confounded with vascular *post-mortem* changes, we cannot be surprised that, in the search for causes of disease, many of the perplexing clinical cases are equally baffling *post-mortem* subjects, and the verdict, "No cause found," so frequently results.

When we recall how long and completely overlooked in *post-mortem* investigations, even when conducted by skilled pathologists, was the rôle of the appendix, we should not be surprised at the overlooking of a septic follicle of the tonsil, an empyema of the antrum, an alveolar abscess, or a quiescent urethral and bladder infection, as the origin of a train of symptoms which culminated in the death of the patient.

The severe diarrhoea of infants practically leaves no trace in the intestine—at the most a small amount of injection of the ridges of the mucosa, visible and of value only to the pathologist alive to and in search of such evidence, and then *really* valuable only when associated with the clinical history—yet there can be no question of the vast mortality directly due to enterocolitis in infants,⁵ nor of the profound effects of enterocolitis upon the growth and development of children. Herter⁶ describes physical deterioration of a marked type which he calls *infantilism associated with intestinal disorders*. Stricture of the urethra, with its well-marked clinical manifestations and grave consequences, leaves very little evidence *post mortem*.

In dealing with this question of *disease*, one deals with it broadly; each and all of us succeeds in diagnosing a typical appendicitis, typhoid or tuberculous lesion, but it is the thousand and one illnesses which we cannot label, and the many small lesions which precede the invasion of the body by such master bacilli as the typhoid and tubercle bacillus, and which perform the pathological spade work whereby such well-defined bacteria are able to invade the body and successfully thrive in its organs and tissues.

Do we diagnose these? The why and the wherefore of the onset of disease? There can be no doubt *multiple*

blood infections produce graver lesions and more rapid multiplication of bacteria.⁷

Immediately attention was directed to appendix diseases all and sundry perceived its importance and frequency, and the rôle it played in hitherto obscure or anomalous abdominal lesions. Similarly, when the fact is widely recognized that the small mucous membrane diverticula are the source of a great number of obscure illnesses and pathological processes,⁸ the state of the oral, nasal, genito-urinary passages, etc., will be more closely examined, and the explanation of many clinical puzzles elucidated.

Post-mortem findings being so often ineffectual in explaining certain types of illnesses, partly because they leave so little evidence, we have to rely for our proofs of the justness of the statements about to be formulated upon the successful result of treatment in life, and this, in my opinion, is the best of all proofs, granted such results are consistent and invariable, not sporadic.

Sir Clifford Allbutt, in referring to this type of proof, says:

The chief therapeutic knowledge is empirical but it must be of the best kind—namely, that of experience.⁹

In dealing with my subject I would do so in the spirit which holds when, in referring to finance, we say: "Take care of the pennies, the pounds will take care of themselves." The diseases I particularly wish to direct attention to form the pennies of ill health, the typhoids and tubercloses the pounds.

As I hope to adduce evidence—to me conclusive—in support of the statements made, I will immediately formulate certain *axioms*¹⁰ which I have found to stand the test of investigation, of treatment, and time.

1. That the vast majority of "everyday" pathological processes are the result of, that is, are due to or secondary to, diseased orifices.

2. That all orifices are concerned, but the important ones are (a) the mouth and nose, (b) the urethra, (c) the vulva.

3. That the bacteria chiefly concerned are the cocci, and their rôle is threefold.

(a) They give rise directly to disease—that is, they are specific—and the processes set up by them may broadly be called the "septic processes."

(b) They so break down the resistance of the body, both locally and generally, that other pathogenic bacteria are enabled thereby to invade successfully the organs and structures of the body.

(c) They co-operate with and increase the destruction and toxæmia due to other bacteria.

4. That an enormous number of the diseases which make themselves manifest in adolescence and adult life originated—that is, commenced—during infancy.^{6 27}

5. While I see very little evidence in favour of the heredity of disease, I am firmly convinced that some of the graver diseases are congenital;^{11 13} that is, the fetus is inoculated via the placenta—antenatal infection. Also that if the mother is the subject of these orificial septic processes the toxæmia must profoundly affect the well-being of the fetus *in utero*.^{18 14}

6. That repeated small infections and intoxications—that is, repeated doses of bacteria or their toxins, taking place over an indefinite period of time, while each infection may be, and usually is, ineffective in producing a definite set of symptoms, and thus calling attention to what is taking place—ultimately give rise to pronounced and violent disorders, polymorphic in their manifestations, often culminating in virulent septicopyæmia.

Rabbits need a large dose of meningococci to kill them; if instead of one large dose smaller doses of meningococci are given at hourly intervals, a much smaller total amount of culture suffices to kill the animals, and this method brings about death with greater regularity.¹⁵

7. That a large number of symptoms are set up in distant parts of the body by toxins developed in some overlooked local nidus of disease,¹⁶ and that these symptoms are designated by definite names, leading the unwary to assume that they are definite entities, definite diseases in themselves, primary in origin, and not what in reality they are—secondary symptoms.

8. That orifice disease amongst the poorer classes is universal, and exceedingly frequent in the upper spheres of society, if properly sought for.

Thus, as a direct result of septic processes taking place in the mouth, nose and nasal sinuses, the urethra or bladder or elsewhere, certain consequences arise:

1. The local process serves as a pathological laboratory where germs are generated, usually very pathogenic to the host, which are thence conveyed in various ways to and infect other parts of the body.

These methods are:

- (a) *By Direct Continuity of Surface* (designated by Bond¹⁷ as mucous streams). In this manner the whole gastro-intestinal tract and the glands opening into it becomes infected from the oral, nasal, and auditory suppurative processes. Similarly, from the vulva or urethra the whole genito-urinary apparatus may be infected.¹⁸
- (b) *By Indirect Extension through the Lymphatic System*, so that, for example, a septic tonsil or gum may infect the lymphatics of the neck, then those of the thorax, and they in their turn involve the lung and pleura (or the thyroid in the neck). The resulting inflammatory process, by its intensity or magnitude or the pain and other symptoms it produces, cannot be ignored, and is thus looked upon as the disease, whereas the primary source of infection is usually overlooked.¹⁹
- (c) *Blood Infection*.—As a result of cervical lymphatic implication the germs may be poured into the innominate vein and thus circulate in the blood—*Bacteraemia*. Evidence of the constant implication of the thoracic duct and its rôle in infecting the blood stream as a result of gastro-intestinal and abdominal infective processes is so strong as to defy criticism. Probably this route is the usual one taken by the tubercle bacillus. In rare instances the blood stream may be directly involved by implication of blood vessels at the local nidus.
- (d) The foregoing are anatomically easy to trace, but other equally well marked sequelae are less easy to follow, yet clinically demonstrable; such are the development of optic neuritis from empyema of the frontal and other sinuses,¹⁰ or the mode of spread of bacteria from the middle ear into the centre of a cerebral hemisphere and the cranial complications of many latent processes of the naso-pharynx.^{1 2}

The perineural and perivascular lymphatics are the probable agents. As all acute processes which hitherto have been regarded as strictly local diseases—pneumonia, typhoid, scarlet fever, etc.—are now known to be accompanied by blood infection (that is, a septicaemia), so in all probability chronic processes²⁰ give rise to mild blood infection; consequently we may fairly assume such a mild infection of the blood stream takes place in all these "orifice" diseases—in other words there is a *mild chronic septicaemia*—and granted a suitable opportunity, these circulating germs produce septic thrombosis, emboli, abscess formation, etc.; otherwise, how else does one explain the onset of acute osteo-myelitis, and many other inflammatory and gangrenous processes in the deep tissues of the body, or certain gonococcal^{21 22} and pneumonic²³ visceral lesions?

2. *The Second Consequence: Toxaemia*.—From the pathological laboratory, situated in the gums, conjunctiva,¹⁵ prostatic follicle, middle ear, and so on, chemical products—that is, *toxins*—are absorbed, which circulate by the lymph and blood streams through the body, and damage or tend to damage all the cells and structures of the body—brain, nerve, viscera, vessels, etc.

Such parts as joints, bursae, tendons, and muscular attachments, which are peculiarly exposed to trauma, climatic influences, or intermittent congestion from prolonged use, have an uphill fight to maintain their usual health against the combined assault of this prolonged toxæmia and trauma. Gradually they lose that reserve of vitality inherent in all structures, till suddenly a more severe trauma,* or an exacerbation in the local infective process in the gum (or wherever situated), or its extension to a new area, takes place, resulting in an increased amount of or a more powerful toxin reaching the joint or tendon, etc., which upsets the now unstable equilibrium, and produces an inflammation, designated an arthritis, a tendosynovitis, and so on; this by its pain, loss of power of movement, or other prominent reason, again obtrudes itself to such a degree as to be looked upon as a primary affection, the disease, and so treated, to the total neglect of the primary disease, of which this is but a symptom.

One cannot wonder at the want of success which invariably follows treatment directed solely to these secondary manifestations, and the relapses which invariably take place under such a régime.

Having briefly outlined the rôle of sepsis of the orifices, one must take cognizance of the important part which the mere passage of time plays in developing the symptomatology, that is, in converting a latent process

* This explanation of sudden illness must be constantly borne in mind in dealing with workmen's compensation cases.

into one with definite objective or revealing manifestations. (I do not refer to incubation period after an infection has arisen.)

As an example, take the formation of gall stones, a symptom of gall bladder and bile duct catarrh.^{24 25}

The pathogenesis of gall stones is variously put by different writers; all, however, are agreed (with one exception—Boysen, of Copenhagen) that either bacterial or toxic infection of the mucosa of the bile passages is the underlying cause.

Some assume the bacterial invasion is directly from the duodenum, along the common bile duct, and as a result of the catarrh induced deposits occur in inspissated mucus, bile, or a small blood clot, of bile pigment, salts and cholesterol.

Others state that the germs and toxins generated in the gastro-intestinal tract are conveyed by the portal vein to the liver; and still a third say "that germs or toxins generated in any part of the body circulate in the blood stream, and are conveyed to the liver by the hepatic artery."

Assuming all views to be correct, catarrh and inspissation are the immediate precursors of gall stones.²⁵

How long does it take to produce a fair sized gall stone? In my view years.

For the sake of illustration consider tartar, a similar type of deposit on and around teeth, and much conduced to by irregular or overcrowded teeth.

There are many elderly persons who have never cleansed their teeth and who have marked deposits of tartar. If a dental surgeon scaled and collected the tartar of such a patient and moulded it into a mass, it would form but a small sized gall stone, yet it has taken many years to collect.

Granted many *pros* and *cons* in the argument, still one must confess that to produce a gall stone of any size years are likely to elapse.

We know that catarrhal jaundice is common in infants and that gastro-intestinal disorders are amongst the commonest diseases of childhood,^{26 27} and whichever view of the genesis of gall stones we accept, the fact remains that the conditions which lead to cholelithiasis begin in infancy.

Yet gall stone symptoms are rare in infancy, but we know they do occur, and with increasing knowledge and earlier exploratory examinations, they are discovered to be more common in adolescence than we were taught.

Also, although operation may be deferred many years the symptoms of gall stones have existed in many cases from youth, and that a small minority only of cases whose gall bladders contain stones are operated upon.

In the evolution of a stricture of the urethra, the evidence is very strong that the vast majority of strictures take years to develop, *certainly to produce symptoms*, which is the point I am emphasizing.

Vulvo-vaginitis²⁸ in childhood is comparatively common. Personally I have seen 10 cases of gonorrhoeal vulvitis in girls under 12 years of age, and very frequently infants in arms show vulval inflammations,²⁹ but, the acute symptoms over, parents take no further trouble or interest, yet in many instances the condition lies latent, only to light up under the stress of ill-health or marriage, and proclaim itself by extension into the urethra or bladder, or on the other hand by producing a pyosalpinx or other grave pelvic lesion.²⁸ *It is more than probable the ill-health, etc., only reveals an extension which has gone on from the first.*

Darling³ says 92 per cent. of patients dying of pneumonia have nasal sinusitis of older origin.

Fish¹ quotes "that of the cases of measles and scarlet fever who die, the majority have empyema of the antrum of Highmore"; amongst those who survive surely there are many who have similar infections, and it can hardly be wondered that such develop tuberculosis, cerebro-spinal meningitis, diphtheria, or succumb to any stray infection they encounter, or similarly that at the puerperium many years later such mothers should easily become "septic."

Weichselbaum¹ found in 13 influenza autopsies an empyema of one or more of the sinuses in 12 cases. The thirteenth was not examined.

One of the best examples of latency is afforded by abscess of the brain, which may be associated with an otitis media, etc., of ten to twenty years' duration without marked objective symptoms until a sudden attack of coma reveals its presence or ends the patient's existence. Cases of this kind all surgeons have seen.

An unusual example is that in which an infant pushed a piece of slate pencil into its nose; some eight years elapse, during which the child had on two occasions a couple of fits; suddenly, however, it became gravely ill, comatose, and died. *Post mortem* a large frontal abscess was found—the point of the piece of pencil had worked its way through the ethmoid and projected into the cranium.

The presence of hitherto undiscovered sepsis as a cause of obscure diseases is, in my experience, common, and explains many cases of goitre, neuritis, arthritis, so-called heart disease, general ill-health, and hysterias.

In fact, when we are called to sudden cases of grave illness, and find what is called a typical textbook case, we are apt to forget that in the vast preponderance of cases we are viewing the *terminal phase* of a chronic infective process,³⁷ and in ignoring this fact and the influence of time we fail to go sufficiently far back into history, or sufficiently minutely into the small beginnings of disease, without which we are unable to elucidate the natural history of the case and make an accurate diagnosis.

I wish to refer particularly to oral sepsis, because it is so easy to observe—also to a lesser degree to urinary sepsis, which is also comparatively easy to demonstrate—that is, they need no special apparatus or skill.

The prevalence of oral sepsis in the form of (1) stumps and caries of teeth, (2) gingivitis, (3) alveolar abscess or sinus, (4) ulceration of the gums, cheek, and tongue, (5) infected salivary ducts, has been amply demonstrated in my hospital practice. Since 1905 I have examined over 5,000 new cases, and amongst these I have found 10 cases (0.02 per cent.) who had absolutely healthy mouths at the time of examination. A number were edentulous, a sufficient proof of many years of sepsis. Amongst those seen at the Gordon Hospital for Rectal Diseases—that is, intestinal cases—I have not found a single case quite free from sepsis of the mouth. Of 36 sigmoid, rectal, and anal cancer cases I have dealt with, all have had definite sepsis, the majority in a grave degree, yet I am convinced this extreme degree of sepsis is quite overlooked in general.

The last eight house-surgeons at the Gordon Hospital were men from Dublin, Guy's, Charing Cross, Edinburgh, Glasgow, Birmingham, and Newcastle-on-Tyne, all men of more than average ability; five were candidates for the F.R.C.S. Eng., of which four, while in residence or soon after, obtained this diploma, two M.B. Lond., and one M.B. Glasg. With the exception of the Charing Cross man none of these residents, as they willingly confessed after a few weeks' observation, ever understood the meaning of oral sepsis. They knew of a disease called Rigg's disease, "which one saw on rare occasions, and was (in their minds) a profoundly grave condition consequently," but they never saw, as a routine, the lower lip pulled down, the upper raised, and the gums carefully scrutinized and squeezed; they did not appreciate the importance of tartar in the pathology of the mouth; they rarely saw dentures and plates removed from patients' mouths, and thereby observed the great frequency with which stumps of the most septic type were left in the mouth and covered by a plate; they did not know of the dangers of the abominable bridges of American dentistry.

Yet these residents were keen men, creditable to any school and hospital, who had been "residents" elsewhere, and must be accepted as good samples of the general medical attitude towards this most obvious of all orificial diseases.

Such also has been my experience with the residents at the Metropolitan Hospital. They know of oral sepsis as an abstract statement, not as an actual potent factor in the causation of everyday diseases.

With this personal experience in mind I have, nevertheless, read with great astonishment reports of discussions on colitis at various societies, also papers by physicians and surgeons of authority in London and the provinces, in which almost everything was given as a cause of colitis,³⁸ yet not in a single instance do I find sepsis in the mouth, ear, nose, and throat given as a primary cause of colitis and pericolicitis.

Similarly, with very few exceptions, the little prominence given to sepsis as a cause of gastritis, with its many-sided symptoms (pseudo-ulcer and pseudo-carcinoma), which, in my experience, is the commonest cause of gastritis and its sequelae. In the abstract it is accepted, but in its everyday importance it is almost ignored.

Many of these cases swallow pus in quantities varying from a few minims to 3ss per diem.

Yet when this question is put to them—

Would you be surprised that this patient should develop gastritis, entero-colitis, and appendicitis, if for years on end he or she visited a pathological laboratory five, ten, or fifteen times in the twenty-four hours and swallowed on each occasion a platinum loop of a streptococcus or staphylococcus culture?

I have never heard surprise expressed, or the conclusion suggested dissented from, except the old fallacy that "the gastric juice destroys bacteria," or that "one was a pure culture, the other a mixture of dead cells with fewer bacteria," which puerile arguments are unworthy of consideration.

In those grave cases of intractable constipation from colitis, pericolicitis, and adhesions, in which total removal of the large bowel is advocated and successfully performed

I fail to find any mention of the connexion between this advanced and serious condition and orifice sepsis, yet the author³¹ of this operation calls attention to the less obvious sequelae which result from the intestinal disease, such as duodenal ulcer and chronic mastitis and cancer of the breast! The question of sepsis of the orifices is one of such personal importance that one may logically ask, What avail it if a patient lives in the best drained town, or in the purest atmosphere, or subsists on the best food, if his own gastro-intestinal tract reeks with pus?

I would like to draw the attention of clinicians to the pathogenesis of hepatic cirrhosis and ascites. It may be stated boldly cirrhosis of the liver is not due to alcohol alone. Branthwaite and Donkin, inspectors of inebriates' homes, state emphatically that cirrhosis of the liver is not a frequent cause of death in such institutions; and, on the other hand, almost every medical man has come across pronounced hepatic cirrhosis, with ascites, in patients who have been lifelong total abstainers.

The number of such cases is doubtless great, because, when patients are questioned as to their temperance or intemperance, and they deny alcoholic excess, we often disbelieve their statements, because both by tradition and teaching we associate hepatic cirrhosis of necessity with alcohol, and find it difficult to give up old idols.

Experiments on animals (giving alcohol to) fail to produce cirrhosis, but alcohol combined with the ingestion of pus—that is, the development of a gastro-intestinal infection simultaneously—does produce cirrhosis.

D'Amato,³² as a result of experiments, suggests that hepatic cirrhosis is but a part of a lesion of the whole abdominal organs.

The ascites of cirrhosis is also chiefly but a symptom of toxic infection of the peritoneum, associated possibly with the venous stasis of cirrhosis. This membrane is thickened, often rough, and occasionally I have seen small polypoid excrescences on its surface when operating for ascites or other conditions.

The pathology of ascites is indeed strictly copied, and to my mind proved, by the development of a chronic hydrocele in that piece of detached peritoneum the tunica vaginalis, which is always the result of a past or existing epididymitis or orchitis, or the result of trauma. Here venous stasis is not brought in to explain the hydrocele.

One form of modern treatment is common to both. In hydrocele we remove a sufficient portion of the thick, badly-absorbing, or non-absorbing parietal layer of tunica vaginalis; this opens up a large number of lymphatic spaces, which suffices to remove by absorption the fluid as it is secreted. In the same way, if a certain amount of the peritoneum is removed from the back of the recti, the ascites is cured in a certain number of cases, special precautions and after-treatment being taken into account as in the Talma-Morison operation.

Insanity.—Almost without exception, all recent authorities on this subject are agreed that chronic toxic poisoning is the most important factor underlying insanity (and fortunately it is the most vulnerable of these). The keynote to this view is "that any process which produces delirium may, if sufficiently prolonged, result in insanity."³³

Savage³⁴ says:

I have long pointed out that there is no entity—insanity, at most it is a negation.

And again:

To poisoning, in some form or other, must be attributed the general exciting cause of nearly every form of insanity.

Kraepelin says:

There are only two external causes: (1) Exhaustion, (2) intoxication.

Where, then, is the commonest nidus such toxins are produced? That they are largely coccal in origin is highly probable and intestinal in site.³⁵ That puerperal mania is associated with streptococcal³⁶ sepsis of the uterus and parametrium is almost certain, and therefore one must conclude the ordinary septic processes are competent to excite insanity; and when we note how widely spread is genito-urinary and gastro-intestinal sepsis, one is logically forced to accept these two great systems as the commonest site whence such toxins are absorbed. Thus is established the association of insanity with orificial disease.

Uraemia.—So bound by tradition are we that even now books mention the "intestinal ulceration of uraemia"—

an example of putting the cart before the horse it is difficult to improve on. Copraemia should be substituted for uraemia—that is, an intestinal intoxication in patients with defective kidneys.

It has always appealed to me as a reasonable deduction, if any febrile condition suffices to produce "cloudy swelling" of the kidney, and an attack of scarlet fever—a streptococcal invasion of the mucosa of the naso-pharynx—can produce virulent toxins in the course of a few days, which so damage the epithelium of the kidney as to produce an acute nephritis, that a similar chronic coccal infection of the mouth and whole gastro-intestinal tract, acting for many years, should suffice to produce equally grave changes in the renal epithelium (and stroma)—a different type of damage, as one would expect.

If, instead of a catarrhal infection, definite ulceration of the colon takes place, how much more readily should the renal destruction proceed; but when death takes place and such ulceration is discovered *post mortem*, how fatuous to ascribe the intestinal ulceration to the uraemia!

During my tenure of office as Pathologist to Charing Cross Hospital all cases of renal disease had definite oral sepsis. Those dying of uraemia had colitis; in three of them—very severe types—there was ulcerative colitis.

If a chronic sepsis of the genito-urinary tract itself also exists in these cases—that is, not such as would by its virulence and intensity produce surgical lesions—the probability of Bright's disease accruing is enormously increased. There is no hard-and-fast line between the origins of medical and surgical renal disease; it is rather a matter of degree.

What relation sepsis of these two important tracts bears to eclampsia¹⁸ and other renal complications of pregnancy is worthy of the strictest investigation.

Gonorrhoea.—We now know there is not one variety of septicopyaemia which the gonococci cannot produce—ulcerative endocarditis, multiple abscesses of joints, peritonitis, etc.—and its rôle in cerebro-spinal meningitis is rapidly being recognized.^{21 22}

It has been obtained in pure culture in all sorts of lesions and at times long distant from the primary infection.¹⁸

Recently Sir Victor Horsley has called attention to the part it plays in chronic spinal meningitis, simulating myelitis and pressure on the cord from new growths, and amenable to operation.

This leads to a subject which has long occupied my mind, *What are Charcot's joints and the crises of tabes?*²⁷

Is it possible for a moment to maintain that Charcot's joint is anything other than a toxic arthritis in a patient whose reaction to painful stimuli is reduced or nil, and in whom, therefore, the process has advanced before much attention is directed to it, and whose tissue (soil) is favourable to germ processes?

If the joint affection occurred in a non-tabetic patient it would be called an acute or subacute osteo-arthritis or rheumatoid arthritis (conditions almost certainly of septic toxic nature, of gastro-intestinal or genito-urinary origin); and in a like manner, in a tabetic patient, I would hasten to seek for a septic focus.

But in a tabetic we still retain the nomenclature and the mysterious factor "trophic influence" devised by Charcot, whose views were formulated in the prebacterial days, certainly before it was established that all inflammatory processes presupposed the presence of bacteria or their toxins in the inflamed part.

The experience derived from Gasserianectomy and the part played by sepsis and trauma of the conjunctiva in producing ulceration and sloughing of the cornea, previously attributed to loss of trophic function from destruction of the ophthalmic division of the fifth nerve, has done much to modify surgeons' views on trophic nerves.

Visceral Crises.—Is there ever a bladder crisis in a patient whose genito-urinary passages are absolutely free from sepsis? or a gastric crisis without mouth and gastric sepsis?

In regard to Laryngeal Crisis: During the past two years I have seen 5 cases (3 men, 2 women), the youngest 35, the oldest 60, who were sent up as cases of oesophageal cancer or stricture. I found the symptoms of dysphagia marked in all cases, but repeated careful examination and the passage of instruments revealed no stricture. In all the cases the mouths were, and had been for years, most septic.

Three of the 5 cases (2 men, 1 woman) had their mouths made healthy by radical sacrifice of the teeth, and recovered completely, without any other treatment than that of the dental surgeon.

These cases were unquestionably suffering from spasm of the oesophagus.

Recently Professor A. Keith demonstrated at the Royal College of Surgeons the presence of a sphincter, first described by Sir Everard Home, situated at the level of the cricoid cartilage; and I now have no doubt the dysphagia in my cases was due to spasm of this sphincter.

If sepsis can produce such marked symptoms in the oesophagus, and also in the intestine^{28 29} (as I described in a lecture before the Harveian Society in 1903) may produce pseudo-obstruction apparently demanding laparotomy, of which cases I have notes of 18 since seen, surely it is competent to produce spasm of the larynx, especially in a patient whose nervous mechanism is imperfect.

The reflex spasm of laryngismus stridulus⁴⁰ is now attributed to post-nasal catarrh and adenoids, and is a clear indication that the septic explanation of laryngeal crises is not improbable.

Recently I was sent for to operate on a case, a man aged 60, presenting some difficulty, which was diagnosed as intestinal obstruction.

He had increasing marked abdominal pain and some distension, was sick once, and was somewhat collapsed, constipated three days, urine passed every two hours a few ounces at a time. On examination I found his bladder distended and drew off some pints of urine, which completely relieved his symptoms.

He had a small firm prostate, the obstruction from which the bladder usually overcame, but while constipated and suffering from a chill, he unduly delayed to answer the call to micturate, and his bladder became slightly distended. When he tried to pass water he failed and he had an acute retention.

After twenty-four hours the tension on the bladder became so great that, aided by voluntary effort, he was able to pass some urine and thence every two hours passed 2 to 3 oz., and he considered, therefore, the urinary trouble was at an end.

But the pain and constipation continued and he saw a doctor, and finally, on the third day, was admitted.

Had he suffered from tabes or any nerve lesion doubtless this attack would have been labelled "bladder crisis."

It may be asked, But what of female tabetics? It would help greatly to know the proportion of the various crises in the sexes; the number of female tabetics is 9.1 per cent. of the whole.³⁷

However, bearing on this, let me quote a case I saw in the wards in September. She was a young woman 25 years old, admitted on the medical side as a case of appendicitis. Her history seemed to point to appendicitis without abscess, but per-rectum examination indicated severe constipation and a peculiar fullness in Douglas's pouch (?). I found she had passed no urine for twenty-four hours on one or two occasions, and a catheter drew off some 46 oz. A few enemata and purgatives brought about complete recovery.

Had she any form of nerve lesion, she would probably have been labelled a bladder crisis also.

Retention of urine in women without obvious cause is quite common, but in cases seen by me there has always existed some degree of cystitis or vulval inflammation.³⁷

One could continue indefinitely multiplying examples of symptoms set up by *prolonged orifice infections*; but when one finds that, even in the conditions known as colitis and appendicitis, which lie in the direct path of infection, the medical profession as a whole ignores the presence and rôle of pus swallowed from the mouth, nose, and ear in their pathology, one feels it is rather hopeless as yet to insist that such conditions as exophthalmic goitre and Henoch's disease are due to infections such as oral sepsis, yet there is accumulating a great deal of evidence to prove this.

Unfortunately, we have heard such bad accounts of the *Bacillus coli* from the bacteriologist that we have attributed the majority of intestinal and accessory gland lesions to it, whereas all recent investigation demonstrates clearly that the *B. coli* is of infinite value to man,⁴¹ and that it is the introduction of other bacteria, probably streptococcal (here called variously *Streptococcus faecalis*, *enterococcus*, etc.),⁴² and the *B. enterococcus*, *B. infantilis*, and putrefactive organisms which should bear the brunt for initiating the diseases.

The *B. coli* is of necessity almost certain to be found in all lesions connected with the digestive tract; but is it the cause of these lesions? The difficulty lies in proving whether it is the original culprit or only accessory after the fact.

But from time to time lesions are found in the appendix⁴⁸ and elsewhere, in which pure cultures of streptococci and staphylococci are found, and, as in puerperal septic poisoning, if the investigations are carried out early the presence of streptococci is found in an uncontaminated condition,⁴⁹ while later on contamination is invariable.

Lartigan⁴⁴ in 1902 called pointed attention to the rôle of the cocci in appendicitis, and the probability of the coli being a secondary infection, while in young infants we know that at the height of certain severe intestinal disturbances the *B. coli* are entirely replaced by the *B. infantilis*.⁴⁵

The identity of Payne and Poynton's *Diplococcus rheumaticus* with the *Streptococcus faecalis*⁴⁶ and the enterococcus is highly probable, and explains the close association between the rheumatism—acute and chronic—and arthritis with gastro-intestinal disorders.

With regard to local conditions of the mouth, I find cracks, fissures, papillomatous conditions of the tongue, and leucoplakia are almost universally believed to be of syphilitic origin; whereas, in my hospital experience, I find these conditions in patients without the history or any confirmatory evidence of syphilis; moreover, removing the carious and jagged teeth and tartar, making the gums healthy, removing badly-fitting and rough dentures, conditions never absent, results in marked amelioration of the patches, etc., and in preventing new lesions, which to me proves their connexion with sepsis as a causal factor.

I do not say syphilis does not produce these lesions, but in frequency it is a minor cause.

I have seen septic ulcers of the palate, and two on the posterior wall of the pharynx, clear up entirely without any treatment other than that afforded by the dental surgeon.

Similarly, sepsis under a long or a tight foreskin, with urethral infection, leads to desquamation of the epithelium of the foreskin and glans, to acute and chronic balanoposthitis, herpes, papillomatous warts, and soft sores. In every case of cancer of the penis I have seen, a chronic balanoposthitis has always existed, and in cancer of the tongue, lip, and cheek, sepsis plays a most important part.

The association of mucous membrane infection with dermatological conditions, chronic oedema of the face, lupus erythematosus and lupus vulgaris, idiopathic (?) facial erysipelas, abscess of the lacrymal sac, I have observed in hospital and private practice.*

We would expect, if the lymphatic system takes a great part in the dissemination of bacteria and their products, to find lymphatic gland disease associated—one has but to think of the gland abscesses to note a gross confirmation of this—but there is increasing evidence that the origin of lymphocythaemia (lymphoma), possibly status lymphaticus and other obscure lesions, is connected with septic and toxic processes.

Beginning with the glandular fevers of children²⁶ (Fleiffer's gland disease⁴⁸), the connexion between these and gastro-intestinal disorders is conclusive; again, in cases of fatal lymphocythaemia in children,⁴⁹ the connexion between some of the cases and sore throats was established, and the general conclusion of the writers of one such series was "that the disease is bacterial in origin, probably streptococcal."

Further, the condition called "toxaemic infantilism"⁶ widens enormously the importance of the intestinal tract and its flora in the pathology of children, and the incidence of many diseased conditions in adults, otherwise inexplicable, may be traced to similar disorders, possibly infantile in incidence.

In my experience such conditions as sciatica, neuritis, and lumbago are due to arthritis of the hip, sacro-iliac and spine, etc., joints, or to osteophytic outgrowths on the vertebrae demonstrable by x rays, and associated with septic mucous tracts. Seventy per cent. of the joint cases in my out-patients (in a general hospital) are toxic, of gastro-intestinal origin; in 10 per cent. I fail to find a nidus, but after what has been said it is not to be wondered at; 10 per cent. are of genito-urinary origin; the other 10 per cent., chiefly in children, are tuberculous or syphilitic (generally congenital). Many septic cases are diagnosed as tuberculous or syphilitic hydrarthrosis, but the result of treatment directed to the septic conditions present proves the inaccuracy of the diagnosis.

* This aspect of the subject was dealt with by Sir Malcolm Morris^{46 47} and others at Belfast this year.

From the point of view of prognosis in other diseases, and from the post-operative standpoint, the presence or absence of an infected genito-urinary or gastro-intestinal orifice is of incalculable importance, yet I constantly see patients, who have been residents for months in hospital wards or attendants at out-patient departments, in convalescent homes, and under special care, suffering from phthisis or chronic pulmonary affections, in whom there are septic tonsils, stumps, purulent gingivitis, submaxillary calculi, chronic rhinitis, otitis media (least often ignored), and septic genito-urinary tracts, which have been entirely overlooked and ignored in the battle against the tubercle bacilli. If this occurs in hospital practice, where our students are trained and post-graduates taught, how can we expect the rank and file of the profession to be other than equally indifferent to this important subject?

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At a recent meeting of the Amritsar Temperance Society a vote of thanks was adopted to the local Government and certain of its officers for the interest they have displayed in disseminating information among schools and elsewhere with regard to the advantages of temperance. A further resolution was adopted, asking the Commander-in-Chief to take measures, similar to those adopted by the Army Temperance Association, to check the evil habit of drinking spirituous liquors among the native soldiers.

THE German Congress of Internal Medicine will hold its twenty-seventh annual meeting at Wiesbaden from April 18th to 21st, under the presidency of Professor F. Kraus, of Berlin. Among the addresses to be delivered are the following: The special diagnosis and treatment of tuberculosis, by Drs. Schutz of Berlin, and Penzoldt of Erlangen; and the origin and treatment of secondary anaemia, by Dr. D. Gerhardt of Basel.