THE DRESDEN CONFERENCE.

In 1893 was held at Dresden the last International Sanitary Congress, at which were represented Germany, Austria-Hungary, Belgium, Denmark, Spain, France, Great Britain, Greece, Italy, Luxemburg, Montenegro, the Netherlands, Portugal, Roumania, Russia, Servia, Sweden and Norway, Switzerland, and Turkey. England was professionally represented by Dr. Thorne Thorne, the Medical Officer of the Local Government Board, to whose able advocacy of medical inspection the Conference in a great measure owes its successful results.

Three committees were appointed—the first to deal with the duties of a Government when cholera appeared in a country, the second to deal with the measures necessary to prevent cholera entering a country or spreading from one part of a country to another, while the third devoted itself to the Danube traffic. The convention was finally signed by the delegates of Germany, Austria-Hungary, Belgium, France, Great Britain, Italy, Russia, Switzerland, Luxemburg, Montenegro, and the Netherlands. This Convention, which will of necessity exercise a powerful influence upon all sanitary regulations of this country, will last for five years from the date of ratification. It will be renewed every five years by tacit consent, unless renounced by one of the high contracting parties six months before the expiration of this term. Such renunciation will affect only those countries which shall have notified. The Convention will remain in force for the other States.

Although the agreement arrived at does not establish a perfect system it marked a prodigious advance, and it must not be forgotten that there were great difficulties to be overcome and many prejudices to combat which could only be met by concession whenever possible without sacrificing the broad general principles involved.

The keeping under observation of healthy persons arriving in infected ships was thus agreed to by England, on the distinct understanding that this in her case would not involve any actual detention, but would be covered by the forwarding of the name and address to the sanitary authorities of the district to which they were about to proceed.

Shortly after this protocol had been signed a Bill was prepared to abolish quarantine in this country, but, owing to the change of Government and various other difficulties, it was not until September, 1896, that the Public Health Act became law. By this act the powers of the Privy Council to deal with cholera, yellow fever, and plague were transferred to the Local Government Board, who were thereby empowered to make regulations for the various sanitary authorities concerned.

These regulations now in force practically extend the cholera regulations with certain modifications to these three diseases. If a vessel is found to be infected by the officer of Customs, she is reported to the medical officer of health, who detains her and deals with her at his discretion. He has, moreover, the power of boarding any vessel for the purpose of ascertaining whether she is so infected without the previous intervention of the Custom authorities.

Thus for England quarantine has been formally abolished, and our protection henceforth against the importation of infectious disease will be medical inspection, without any vexatious detention of a healthy vessel merely because she has arrived from an infected port.

This shortly has been the history of quarantine in this country, and it now remains for time and experience to demonstrate to other countries the value of our system in order to induce them to accept the same conclusions. With many this will be readily brought about, while others will have more difficulty in arriving at the same opinions.

REFERENCES.

¹ *Nautical Magazine*, 1896, p. 692. ² Hence the term "lazarette" in use at the present day. There has always been considerable doubt as to the origin of the period of forty days which gave rise to the name of the system. It seems probable that it was derived from the Jewish ceremonial, and was continued under various systems and laws until it became a settled period, the origin of which was lost, and the only justification for which was its antiquity. ³ Report of the Medical Officer to the Privy Council, page 40.

NOTE ON INTESTINAL GASES, PHYSIOLOGICAL AND PATHOLOGICAL.

By H. MUIR EVANS, M.D. LOND.,
Lowestoft

It is hardly necessary to reassert that there are only three possible sources of gas in the gastro-intestinal tract, namely, (1) air swallowed, (2) gases transfused from or secreted by the blood, (3) gases arising from the fermentation of food stuffs. Apart from gases the result of fermentation, it is usually held that the most frequent cause of gastric flatulence is air swallowed with the food or saliva; in support of this statement we are told that the nitrogen in the gases of such cases occurs in about the same proportion as it exists in atmospheric air, and that carbonic acid gas is present in the same proportion as the oxygen in the air. The oxygen is presumed to be absorbed, and the carbonic acid gas transfused from the blood. This one can readily understand if one remembers that 100 volumes of arterial blood contain 20 volumes of oxygen and 40 volumes of carbon-dioxide, while in 100 volumes of venous blood there are 8 to 12 volumes of oxygen and 46 of carbon-dioxide, the nitrogen in both arterial and venous blood being merely 1 to 2 volumes to the 100.

In intestinal gases we find again that nitrogen is in a greater proportion than all the other gases. In meteorism resulting from a case of typhoid, according to C. A. Ewald, an analysis by puncture gave 8.3 per cent. carbonic acid gas and the remainder nitrogen. In a woman with a tight stricture of the rectum the gases obtained by means of a stomach tube consisted of 6.9 per cent. carbonic acid gas, 11.6 per cent. hydrogen, and 81.03 per cent. nitrogen. I do not intend to deal with the more simple problem of the presence of marsh gas after eating leguminous vegetables, or with the formation of sulphuretted hydrogen. The rapid production of intestinal gases after abdominal operations, in peritonitis and gastritis, in hysteria, in certain affections of the lungs and heart, renders the theory of an excretion of gases from mucous membranes of the intestines exceedingly probable.

I could enumerate from my notebooks numbers of cases in which such an explanation seems the only possible solution of the problem. As a step in the investigation of this subject, it occurred to me that in fishes we had an example of a physiological secretion of gases. The sound or air bladder in the fish is in some cases not connected in any way with the intestinal tract, although in many it is connected with the œsophagus, and in others, as the herring, with the caudal extremity of the stomach. The fact that in many species this connection is entirely absent, and in all cases is but a mere pore, renders it certain that the gases in the so-called air bladder must be obtained from the blood.

Since the cod is supplied with a particularly large sound, which has absolutely no communication with the intestinal tract or gills, I chose it for investigation. The wall for the most part consists of a dense, white, non-vascular, homogeneous membrane, but within the sound at one spot is a lobed, cauliflower-like, vascular organ, which lies free in the cavity of the sound. The function of this organ is apparently that of the secretion or absorption of gases. The next step in the investigation was carefully to collect and analyse the gases obtained from a fresh cod. This was done by means of an aspirating needle attached to an india-rubber bag, similar to those used in the making of air balls for children. I entrusted two specimens to Mr. Lincoln Sutton, public analyst of the city of Norwich, and the result of his analysis was: Bag 1: oxygen, 12.18 per cent.; nitrogen, 87.82 per cent. In Bag 2: oxygen, 17.95 per cent.; nitrogen, 82.05 per cent. If these gases contained carbonic acid gas, it was a mere trace, too small to measure. In his report Mr. Sutton remarked that the atmospheric gases in solution in natural waters contained about 34 per cent. of oxygen, and, on the contrary, in these specimens the proportion of nitrogen to oxygen was greater than in atmospheric air. This most interesting fact concerning gases, the origin of which is without doubt the result of a secretive process from the vessels of the vascular organ within the sound, suggests a series of problems upon which further investigation may throw valuable light.

In the first place, one can at present only speculate on

(To be continued.)

how the presence of such a large proportion of nitrogen is produced, although knowing the small proportion of nitrogen which exists free in the blood of warm-blooded animals it seems probable that an actual metabolic process must be brought into play. But we may fairly conclude from these analyses that the presence of a large proportion of nitrogen in the mixture of gases contained in any viscus does not necessarily imply that the origin of that gas is the atmospheric air. If one can argue that what is the case in cold-blooded vertebrata is probably true as regards warm-blooded animals it seems that we must reconsider our deductions concerning intestinal gases based on the fact of the predominating volume of nitrogen in both gastric and intestinal flatus; in other words, we have no right to assume that when we find nitrogen in about the same proportion as it exists in air that that nitrogen is the nitrogen of the air and that the other constituents have been altered by the peculiar nature of the environment, in the stomach the oxygen being replaced by carbonic acid gas, and in the intestines by hydrogen, carbon-dioxide, and marsh gas.

THE TREATMENT OF LACHRYMAL OBSTRUCTIONS BY STYLES.

[By R. SHALDERS MILLER, F.R.C.S.,
Windsor.

THIS little section of surgical therapeutics has probably been less successful than the operative treatment of other disorders of the eye and its subsidiary apparatus.

Since 1877, when I first became a clinical assistant at Moorfields, it has been my habit to treat all organic strictures of the lachrymal duct—that is, all parts of the outfall from the lower *punctum lacrymale* to the exit in the inferior turbinate sinus of the nose—by means of styles, in most cases permanently retained. Except for temporary wear, they should be made of pure platinum wire, about 25 gauge, and I always make them myself for each individual case. The shape, direction, and length of the nasal duct being variable, this special adaptation is the key to success in the use of styles, which consist of a vertical stem, with a short arm bent at or about a right angle to the stem. Usually this arm is made double by recurving the wire back to the stem, so that the arm consists of two thicknesses of wire, parallel and quite close together, the recurved part lying vertically beneath the other. In this way the slit in the edge of the lid is just filled up, but no metal is visible unless the lid be everted. Sometimes the furrow produced by slitting up the canaliculus is very shallow; then the arm of the style is single.

The length of the arm should be such that it completely but easily fills the slit-up canaliculus; it must not be tight. The stem should always be long enough to project through the lower opening of the ductus ad nasum in the inferior nasal sinus. The measure can be readily taken by passing a probe. The practical effect of a style in maintaining the patency of the lachrymal exit depends upon the lateral movements of the lower lid, imparted by those long straight muscular fibres which take origin at the tendo palpebrarum, and run horizontally outwards to the surface of the malar bone, and are anatomically quite separable from the oval bundles of the orbicularis proper. The tubular styles of the instrument makers are worse than useless; they soon become choked with mucus and dust. Also, in the case of the grooved styles, the necessarily thin edges of the furrow cause irritation and the production of a granulation which stops the way. The stem of a style should not be straight except in the case of a very short duct, but somewhat concave outwards.

The lower opening of the duct may be obstructed by an excessively incurved lower turbinate, but even this is scarcely an excuse for turbinotomy. I have found no difficulty in pushing a probe through the turbinate bone, and a style, made long, follows. Some of my patients have worn a platinum style for eight or more years without its ever having been removed from the moment of its first introduction.

In every case of lachrymal abscess a style ought to be used, for a time at least; in most instances it is needed permanently, but a temporary one must be first inserted of a form modified

according to the amount of swelling in the part. Such style may be of lead or silver, and several different forms and sizes are sometimes desirable in succession, to suit the changing size and shape of the lid and canthus. I have found it necessary to make an eyed probe of lead, pass it through the duct and anterior naris, and, by means of a thread attached, pull a fine drainage tube through, and thus restore a lachrymal passage that had been obliterated by an encysted abscess for sixteen years. A platinum style was afterwards worn with a perfect result.

The wire has been drawn for me by Messrs. Curry and Paxton, and by Messrs. Coxeter and Son, and I have used some yards of it. It is well annealed, and very easy of manipulation.

PERFORATING ULCER OF THE FOOT.

By CAREY COOMBS, M.D.,
Castle Cary.

A FEEBLE old woman, aged 72, showed me an ulcer in the sole of her foot about 1 inch long and wide, and $\frac{1}{2}$ inch deep, with hard white edges and a pale pink base. It had existed for thirty years, but she had not asked advice because she was afraid I should "cut it." The removal of some fragments of carious bone and the use of carbolio lotion gave her much relief, and the ulcer grew less.

The illustration shows the ulcer and the deformity of the foot resulting from the loss of phalangeal and metatarsal bones, but the shortening of the other foot is much more marked. In thirty years I have met with about twelve cases of this disease, about half of them in the great toe, which has in two cases required amputation. One old man who had lived for several years in Newfoundland, and who had a large plantar ulcer, consented to Pirogoff's operation; but when, under chloroform, the foot was thoroughly explored, so many fragments of the tarsal and metatarsal bones were removed, that it was thought better to leave the greater operation. The foot healed after a few weeks. The interest of this case arises from the family history; the woman's father suffered badly, the uncle slightly, from the disease. Two of her sisters, one brother, her daughter, and a niece have all had sore feet.

The ulcer begins as a swelling like a soft corn, under the great toe or sole; in the centre of this is the opening of a sinus leading down to the diseased bone. The ulcer rarely attains $\frac{1}{2}$ inch in diameter on the toe, but in the sole where