

*District : Rifle : 2nd Volunteer Battalion the Lancashire Fusiliers : Surgeon-Major William Pooley.*

#### THE ROYAL ARMY MEDICAL CORPS EXAMINATION.

The entry for the Royal Army Medical Corps at the late examination has been a singularly good one, 72 men having applied in the first instance to compete for 30 vacancies, as has already been announced in THE LANCET. Among the competitors were many men who had distinguished themselves at their respective medical schools, Guy's Hospital bearing off the palm with five men out of the first ten of the successful candidates. The names are as follows:—A. C. H. Gray, M.B. Lond.; D. P. Watson, M.A., M.B., D.P.H. Cantab.; T. S. Dudding; C. H. Robertson, M.B. Lond.; F. M. M. Ommoney; J. S. Powell; R. H. MacNicol, M.B., B.Ch. Dub.; O. Ievers, M.B. Lond.; D. D. Paton, M.B., B.Ch. Edin.; S. L. Pallant; C. R. Bradley; H. H. J. Fawcett, B.A. Cantab.; T. J. Wright; G. A. Kempthorne, B.A. Cantab.; J. S. MacEntire, M.A., M.B., B.Ch. Dub.; S. E. Lewis, M.B., B.Ch. Glasg.; N. D'E. Harvey, M.B. R.U.I.; J. A. Longley, M.B., B.Ch. Vict.; N. S. Dunkerton; P. J. Hanafin, D.P.H. Irel.; A. C. Osburn; M. C. Wetherell, M.B., B.S. Durh.; R. T. Collins; W. MacD. MacDowall; F. J. Turner; H. C. Hildreth, F.R.C.S. Edin.; G. S. Mackay, M.B., B.Ch. Edin.; J. D. Richmond, M.B., B.Ch. Glasg.; F. M. G. Tulloch; and E. M. Glanvill, M.B., B.Ch. Edin. It is to be hoped that this service is at last attracting the attention it deserves and that the prospects of professional advancement which it now offers may prove a continued attraction to a thoroughly good class of young medical men in the future as in the present instance.

#### INDIAN MEDICAL SERVICE EXAMINATION.

The following is a list of the candidates for His Majesty's Indian Medical Service who were successful at the competitive examination held in London on August 3rd, 1903, and following days. Forty-one candidates, of whom 23 had University degrees, competed for 16 appointments; 29 were reported qualified:—

Name.	Marks.*	Name.	Marks.*
R. Kelsall ... ..	3729	E. T. Harris ... ..	3159
J. H. Burgess ... ..	3646	C. J. Brierley ... ..	3118
C. H. Brodribble ... ..	3599	R. F. Steel ... ..	3097
J. M. C. A. Macmillan ... ..	3448	G. W. Maconachie ... ..	3064
C. A. Gill ... ..	3361	J. B. D. Hunter ... ..	3061
W. E. J. Tuohy ... ..	3281	A. C. Ingram ... ..	3046
G. F. J. Harkness ... ..	3253	A. W. M. Harvey ... ..	3031
F. T. Owens ... ..	3242	E. W. C. Bradfield ... ..	3024

\* Marks gained out of a possible total of 5100.

#### THE ROYAL NAVAL HOSPITAL, STONEHOUSE.

Sir Henry F. Norbury, K.C.B., Director-General of the Royal Naval Medical Department, paid his annual visit of inspection to the Royal Naval Hospital, Stonehouse, on August 4th, 5th, and 6th. He was accompanied by three members of the medical board and was received at the hospital by Inspector-General T. Bolster, R.N. The party were also accompanied by Deputy Inspector-General T. D. Gimlette, R.N., and Deputy Inspector-General R. Bentham, R.N. Sir Henry Norbury concluded his visit by the inspection of the sick quarters of the Royal Naval Barracks, Devonport, and the Royal Marine Infirmary, Stonehouse, and subsequently held a levée of the medical officers connected with the hospital.

## Correspondence.

"Audi alteram partem."

### THE TREATMENT OF GOITRE BY DISTILLED OR RAIN WATER.

To the Editors of THE LANCET.

SIRS,—In the paper of which I made mention in my last letter I have collected nearly all the known facts about the production of goitre and a short *résumé* may be useful in connexion with Dr. C. A. Rayne's letter in THE LANCET of August 8th, p. 424. The goitrous poison is born of the soil and the soil only. It is absent from rain water. Pliny says, "Tales sunt aquæ quales terræ per quas fluunt." St. Lager relates that the youths of a certain township in France in order to escape military service drank copiously for several months before the arrival of the

recruiting authorities from a well the waters of which were notoriously goitrogenous. Their thyroid glands rapidly enlarged and by this means they escaped service. Lombroso relates a similar instance occurring in Lombardy where the formation of goitre was even more rapid: "La fonte del gozzo ove sogliono andare i giovani all' epoca della coscrizione onde acquistare in quindici giorni quel difetto che li sottrae dal servizio."

The hardness or otherwise of a water has nothing to do with its goitre-producing faculties. Some of the softest waters are the most goitrogenous. One poisonous water I am acquainted with contains only 0.5 of a grain per gallon of calcium carbonate. No calcium or magnesium salts in water cause goitre nor does the absence of chloride of sodium (a reputed cure). The two theories most in vogue at present are: (1) the bacillary theory of the Italian physicians Lustig and Carle and (2) what I may call the metallic-salts theory advocated by St. Lager in his two series of "Études sur les Causes du Crétinisme et du Goitre Endémique" and the salts which he chiefly makes reference to are the sulphides of iron and copper (iron and copper pyrites). I have not time to go into the *pros* and *cons* of these two theories. I shall content myself with saying that the iron theory has much to be said in its favour. The flushing action of an iron-containing water on a loosely connected gland like the thyroid must be considerable. I have found evidence of iron in many goitrogenous waters, but not invariably, nor is it likely to be present in every sample of water examined. In proof of this iron theory it is a curious fact that in very numerous instances the water coming in contact with pyritous marls is highly goitrogenous. In England the blue marls of the Gault and Wealden undoubtedly produce goitrogenous water. In France the marls corresponding to the above, the "marnes aptiennes" and the "marnes néocomiennes inférieures," are equally dangerous. Both these formations in France contain a superabundance of iron bisulphide and the blue colour of the English marls is, of course, due to disseminated iron pyrites. Goitre is found sometimes on the chalk and chalk-marl in England. We know that calcium carbonate does not produce goitre. What, then, is the cause of the disease in this case? So far as I am aware the only accidental minerals found in these formations are disseminated lime phosphate, glauconite (a hydrous silicate of iron and magnesia) and curiously enough marcasite, which is a very readily decomposable form of iron bisulphide. I could quote numerous instances of the same kind in support of this theory. It may be that some subtle combination of organic matter with the decomposing sulphides may be the true cause of goitre, but much work remains still to be done on this question. Dr. Rayne will find a mine of information on endemic goitre in the works of St. Lager, which, I think, are among the ablest ever penned by a physician. Herein, too, are related many instances of goitres cured by the imbibition of rain water, showing that Dr. Rayne's idea that this was a new method of treatment is not founded on fact, as it has happened in numerous instances in the history of medicine and is now a matter of fairly ancient knowledge. Apologising for the length of this letter,

I am, Sirs, yours faithfully,

LOUIS E. STEVENSON, M.B., B.C. Cantab., F.G.S.  
Temple Sowerby, Penrith, August 9th, 1903.

### MEDICAL DOCTRINES OF HEREDITY.

To the Editors of THE LANCET.

SIRS,—It is interesting and instructive to find the traditional conflict between the advocates of vitalism and naturalism making its periodical appearance; interesting also, perhaps, to see the vitalist school relinquish none of its ancient ardour or infallibility, and certainly interesting, in particular, to discover no allusion to Professor Weismann by those who so strenuously support his views. This omission on the part of Dr. G. Archdall Reid and Dr. C. R. Niven is unkind, to say the least of it. I confess that I cannot quite understand, however, why this discussion has been reopened, for neither Dr. Reid nor Dr. Niven, in the course of reasoning which leaves the impression of being more subtle than lucid, seems to have advanced anything particularly new. When I took up THE LANCET this morning and found that a correspondence was being carried on in its columns on the medical doctrines of heredity I thought that I would at least come

across some reference to Professor Kassowitz's recent contributions to this subject. I was all the more justified in this expectation as the contributions in question, it would appear, are of a very striking nature. As far as I can understand from mere hearsay Professor Kassowitz denies both the struggle for existence and natural selection. He looks with suspicion on the latter theory as merely the argument for design in its modern disguise, as the latest phase of teleology, or as a substitute for providential supervision. Natural selection, indeed, may be regarded as the scientific conception of the agency by which the wicked are entirely swept away and the good are rewarded—just as Dr. Reid and Dr. Niven would have it. I may say *en passant* that my first impression on hearing of Professor Kassowitz's views was one of disconfidence; it struck me that an attempt was being made to invalidate the authority of Darwinism in order to throw discredit on the Nietzschean adoration of strength and its praise of hero-worship. And I still would think it difficult for a Jewish writer, even on biological or sociological subjects, to refrain from indirectly protesting, like Max Nordau, against Nietzsche's treatment of the Jewish character as a factor in religious and social evolution.

But to return to my subject and Dr. Niven. This writer demands from "Dr. Wigglesworth, or any other, one indisputable instance of the transmission of an acquired trait ..... in multicellular organisms." Not long ago this challenge would have been issued without reservation of any description. Such was the case when Professor J. G. Adami pointed out how Ehrlich's side-chain theory might throw some light on question of heredity. I remember at the time referring to the remarkable experiments in the laboratory of the Naples Aquarium where it had been proved that the distinction between the germ plasma and the somatic plasma in unicellular organisms had not the absolute character claimed for it by Professor Weismann and his school. These investigations were so significant that there need be no hesitation to-day in making some concession to the dualistic prejudices shared by Dr. Niven.

I presume from Dr. Niven's position that he has not seen the note which I published about the same time in the *British Medical Journal* concerning the transmission of acquired characters in dogs. The evidence which I was able to bring forward was, I fancy I am justified in saying, of a very convincing kind. It referred to some observations made at Nice by Dr. Frémont on the consequences of his method of isolating the stomach in dogs. Dr. Frémont could not understand the objections made by Weismannism to the Darwinian theory of the transmission of acquired characters. "I have unfortunately," he remarked, "only too ample reason to feel the truth of Darwin's views. The puppies of the sheep-dogs from which I obtain my supply of gasterine already show a contracted stomach secreting a much smaller quantity of gastric juice than the parents and an enlarged intestine which bulges into the incision I make in my operation. The second generation of my 'opérés' are useless for any purpose connected with the preparation of gasterine." I added to my note that these statements of my friend were absolutely unprejudiced, because Dr. Frémont had never looked upon the objections of the newer school of evolutionists as sufficiently cogent to attract his attention.

I am, Sirs, yours faithfully,

A. W. GILCHRIST, M.D. Paris.

La Bourboule, July 27th, 1903

*To the Editors of THE LANCET.*

SIRS,—I am exceedingly sorry that I was unable to reply to Dr. Wigglesworth's letter in THE LANCET of August 1st. As I was out of Great Britain I was not even aware that my own letter had appeared in your columns, nor did I see Dr. Wigglesworth's reply till my return home.

In the beginning, however, let me disclaim any desire or intention of trying to take care of Dr. Reid. No one who has carefully tried to master the teaching of "The Present Evolution of Man" would ever dream of trying to shield Dr. Reid from the attacks of anyone, either inside or outside our profession. As Dr. Wigglesworth correctly observes, Dr. Reid is well able, and I would go farther and say more than able, to take care of himself, and that especially so from anyone who advances arguments like those of Dr. Wigglesworth.

Dr. Wigglesworth contends that I have misconstrued his position. Very well. Put as simply as possible Dr. Wigglesworth believes, and claims that he has proved by his

statistics, that parental drinking leads to increased desire for alcohol as well as to increased mental instability in the offspring. That I, as well as those belonging to the newer Darwinian school, deny. Surely that is plain and admits of no misconstruction. It is not denied that the offspring developed from germ cells may be influenced in this or that possible or probable direction by injurious agents—for example, alcohol—circulating in the parents' blood. What is denied is that the changes produced in the offspring are the same as those produced in the parent "except as a coincidence so rare that it may be neglected as a factor in evolution." For example, suppose a man acquires a taste for tomatoes, it is not denied that the eating of tomatoes may influence his germ cells in some possible or probable direction, but it is denied that the offspring arising from these germ cells will have a greater desire for tomatoes than otherwise would have been the case. But more, suppose a man contracts scarlet fever, for instance, and recovers, that is acquires immunity against it, it is not denied that his germ cells are uninfluenced by the toxin circulating in his blood. What is denied, supposing he afterwards becomes a father, is that the child or children developed from these germ cells will have a greater natural resistance to scarlet fever than otherwise would have been the case. The evolution of our race with regard to this special disease has proceeded and is proceeding along lines of an inborn capacity for acquiring immunity against it. Some take the disease severely and die; others take it slightly and recover; while others seem to be totally immune. Those who have not varied favourably tend to be eliminated, leaving the continuance of the race to those who have so varied, that is, who have an inborn immunity or an inborn power of acquiring immunity against the disease. The same is to be said with regard to every other infectious disease. With regard to alcohol or any other poison the same reasoning is to be employed. Suppose a man becomes addicted to alcohol it is not denied that his germs may be influenced in some possible direction. What is denied is that the offspring derived from these germs will have a greater desire for alcohol than they otherwise would have had. If this were so then they would make a different start in life from the parent, because to the child's inborn capacity to enjoy alcohol would have to be added the increase of capacity due to the parents' drinking, and this increased capacity accumulating generation after generation would at last lead to such drunkenness as to result in the extermination of the race. However it has come about, there has arisen in man during his evolution a desire for, or capacity to enjoy, alcohol. The very earliest records tell of man's drinking. There is no nation now sober which was not at one time very drunken. Nor is there one race which never had any acquaintance with alcohol till recent times that is not now drunken. If parental drinking led to increased filial drinking or filial insanity, and as these would increase generation after generation, we would expect that those races which have had the most prolonged acquaintance with alcohol would be the most drunken and would have a bigger death-rate from alcohol than those that have not had this prolonged acquaintance with it. The exact opposite, however, is the case. Did parental drinking lead to filial insanity the same result would ensue—that is, extermination of the race. In the case of alcohol, as in that of scarlet fever, natural selection has been at work eliminating the unfit and leaving the continuance of the race to those who have varied favourably—that is, in the inborn power of tolerating alcohol, or avoiding it, or both. Now it must be insisted upon, in spite of the iteration and reiteration of Dr. Wigglesworth, that no one has said "that the germ plasma is incapable of receiving permanent injury by the agency of poisons circulating in the blood—that is, of course, that the damage to the individual germ cells is never of such a nature as to lead to permanent alteration in the organism which results therefrom."

Dr. Wigglesworth is quite right when he goes on to say, "Either a modification can be produced in the somatic cells of a child as a result of such influence or it cannot. If as a result of the development of germ cells in a vitiated nutrient medium the child resulting therefrom is modified in any direction, however slight, then a definite germinal variation has been produced by the agency of the poison in question." But possibly and probably Dr. Wigglesworth is altogether wrong when he goes on to say further that if the neo-Darwinism contention is correct it may be a "matter of indifference as regards the welfare of such offspring

whether the germ cells from which they arise are developed in a vitiated nutrient medium or the reverse." We at present know too little about heredity to say it is or is not a matter of indifference whether the germ cells are developed in a vitiated nutrient medium or not. However, with regard to permanent alterations being produced in germ cells and the resulting offspring from poisons, &c., circulating in the blood, this is probably correct. For since the child varies somewhat from the parent the germ cell from which he is derived must also have varied somewhat from the germ cell from which the parent was derived and it seems probable (neglecting the effects of conjugation) that this could only have arisen from some external cause—for example, alcohol circulating in the blood. What is denied is that such changes in the blood usually produce changes of such a kind in the germ-cell as result in variations in the offspring derived from these germ cells similar to those produced in the parent organism. For example, suppose a bicyclist develops his calf muscles to a great extent this modification may so alter the blood or nutrient parts of it as to cause an alteration in the germ cell which will, therefore, cause it to develop into an organism different from that which would otherwise have been the case. It is, however, difficult to conceive that this variation in the offspring will be of the same kind as that in the parent. In other words, it is difficult to believe that because the parent developed his calf muscles the child will have better calf muscles than he otherwise would have had. If this ever does happen—that is, if ever an acquired trait is transmitted—it must be so rare that no indisputable instance of it has yet been recorded and thus as a factor in evolution may be neglected.

I pointed out in my last letter that the accumulation and transmission of acquired traits is probably the normal condition of things in low unicellular organisms, as witness the conversion of small-pox into vaccinia by passing the virus through the cow, but that such obtains in multicellular organisms, notwithstanding Dr. Wigglesworth's statistics, there has not yet been any evidence advanced worth the time spent in its examination.

I am more than sorry if I have misread any part of Dr. Wigglesworth's first letter. In that letter he evidently insists that the actions of poisons, &c., on the germs (apart from conjugation) will cause the offspring developed from these germs to vary in certain definite directions. To that end his statistics are supposed to prove that parental drinking will cause filial intemperance or filial mental instability. The foregoing part of this letter and my last letter prove that for this contention there is not one iota of justification. Were this so then we would expect every member of a litter of pups or kittens to resemble exactly one another, for the germs have been subjected to the same conditions of environment. We know, however, that no two members of the same litter correspond in any one character or trait.

Dr. Wigglesworth next refers to the "Mohammedan races which show us millions of human beings who are perfectly sober, not by virtue of such an evolution, but in consequence of the operation of religious sanctions." Granted. But though the past history of these races is well known the future has yet to be written. It must also be remembered that this craving for alcohol is not the only desire of man that has been counteracted by his religious systems. Millions and millions of men and women have denied themselves the perfectly natural gratification of sexual love because of their religious systems, and though their sexual instinct was counteracted it was never abolished. Similarly, though the desire for alcohol has been counteracted it never has been abolished. Let those races change their religion (they have done it before and may do so again) to one like the Christian religion which does not demand total abstinence, and it may be the last state of those races will be worse than the first. Again, if these races are Mohammedans and abstainers we must take into consideration the price they are paying in knowledge, belief, art, morals, law, customs, &c.—that is, in culture or civilisation.

I need not follow Dr. Wigglesworth further, for any other question he raises has been answered in the preceding part of this letter or in my previous one. In his last sentence, however, he asks, "Can Dr. Reid or Dr. Niven furnish evidence to show that on the average the children of alcoholic parentage are as stable and healthy as those of parents not so circumstanced?" I respectfully decline to

do any such a thing. Dr. Wigglesworth has asserted that parental drinking causes filial intemperance and filial insanity. These statements have, I trust, been shown to be wrong. It is for Dr. Wigglesworth to prove his statements. It is no part of my business to prove an exact opposite. I may say, however, that it would be perfectly easy to give the proof he asks, but the disproof of his assertions is the beginning and end of my task.

I am, Sirs, yours faithfully,

Liverpool, August 7th, 1902.

C. R. NIVEN.

## A MINISTRY OF HEALTH.

To the Editors of THE LANCET.

SIRS,—In reference to a paper which I had the honour of reading in the Section of State Medicine of the seventy-first meeting of the British Medical Association on July 31st at Swansea on the formation of a Health Ministry I am invited to reply to the following points raised by distinguished members of our profession:—

1. That friction would be caused between the proposed Minister and the Local Government Office and a deadlock in public health affairs ensue.
2. That local administration of sanitary matters would become detached from other departments of local government.
3. That the first step towards a proper State sanitary service would be the improvement in status and pay of the medical department of the Local Government Board.

I think that the first two points may be answered together, A Minister of Education has recently been appointed, with obvious advantage, at a time, curiously enough, when local educational and general government has been in process of unification. Thus it is clear that the Ministry of Education can coöperate harmoniously with the Local Government Office though local administration of duties is combined. In Belgium and Canada, in the United States of America, in Germany, in Sweden, and in Denmark the State public health administration is incorporated in departments of agriculture, navy, police, and education, a "medical council," and the Ministry of Justice respectively.<sup>1</sup> The national administration of public health services is, therefore, not confined to central offices of local government in other countries. These facts strengthen the supposition, to my mind, that discord need not arise by a separation of the medical department of the Local Government Board to form the nucleus of a Health Ministry.

As regards the third point, the improvement in status and pay and numbers of the medical department of the Local Government Board is clearly essential to the promotion of a proper State sanitary service. Would this not be one of the many matters to receive the attention of the proposed Ministry of Health?

The support of the medical profession appears to be a *sine qua non* to the formation of such a central medical department and it is hoped that the questions when raised will receive their close attention.

I am, Sirs, yours faithfully,

Plymouth, August 8th, 1903.

F. G. BUSHNELL.

## TRIFID STOMACH.

To the Editors of THE LANCET.

SIRS,—In THE LANCET of August 8th, p. 415, appeared an annotation on hour-glass stomach in which, referring to an interesting case of trilobular stomach reported in the same issue (p. 388) you state: "It is, we believe, the first case of trifid stomach on which an operation has been performed." May I draw your attention to a paper which I read before the American Surgical Society on May 8th, 1901, and published in THE LANCET of May 25th, 1901, p. 1458. Here I described a case (Case 22) of trifid stomach under the name of double hour-glass contraction of the stomach on which I performed gastropasty and gastrolisis and cured the patient who remains well. This case preceded the one you describe as the first by more than four years and although one of the strictures was produced by adhesions and the other by cicatricial contraction the stomach was divided into three distinct cavities. The case is referred to and briefly described in the work, "Diseases of

<sup>1</sup> See also the Case for a Ministry of Health, p. 160 et seq., by F. Scott, F.C.A., citing Palmberg, and Newsholme's Public Health and its Applications.