

—qualifications. There is every variety of such boards—medical or surgical, cheap and easy, or costly and difficult. But the qualifications of all alike are entitled to respectation, and every right of practice in all parts of Her Majesty's dominions. There is a further variety in the boards. Some are rich and independent, and pride themselves on the excellence of their examinations and the difficulty of passing them. Others are poor, or, if not poor, use their licensing power as if they depended on the box of licensed persons; they seem to be anxious mainly to get the money of candidates, and, in order to get this, promise all sorts of pleasant advantages. It is the very scandal of our examining system that the bodies live largely by their examinations, and that there is not a licensing body in either division of the kingdom which does its examining work independent of all money considerations. If the result of the labours of the Commission should be to shakle the competing rivalry of the sixteen boards, and to secure that we shall neither undervalue another nor apply a lower test of professional efficiency than a common minimum to be agreed on by an independent central authority, and if it will also create such an authority, the Commissioners will earn the thanks of the profession and of the public. But if the labours of the Commissioners fall short of these results they will be disappointing indeed. It is never to be forgotten that the State has the deepest interest in the preliminary education and professional efficiency of medical men. The efficiency of lawyers is a far less serious question than that of medical men. For one person who needs a lawyer there are a hundred who need a doctor, so whose efficiency their very life at any time may depend. The Boards which test this efficiency should be ruled above all suspicion. It is monstrous that to meet the impossibility of an examining board as its love of money candidates should be passed into the profession deficient in the knowledge of anatomy or of disease.

We cannot think that such a scandal will long survive the inquiry of a Royal Commission, and we are encouraged in this hope by the promptness with which it resumes its labours, almost before the end of the long vacation. We take this as an indication of earnestness, and earnestness in the work of the Commission is everything. It is difficult to imagine any earnest consideration of the working of the present system of half-diplomas by sixteen bodies, under a weak and interested Medical Council, ending in anything but a great reform, such as is demanded, with singular harmony, by all who have given any attention to the subject.

The habits of worms and the purpose they fill in the economy of Nature do not at first sight appear to be very promising subjects of inquiry, nor likely to lead to interesting results; yet the work which has just been published by Mr. DARWIN, "On the Formation of Vegetable Mould through the Action of Worms," shows how the facts accumulated by a careful and accomplished observer may render an uninteresting subject extremely interesting, and serve as a basis on which theories having an important relation to geology may rest. It is remarkable that, notwithstanding their common occurrence, no monograph of the British

species has been written. It is probable, however, that there are about eight species. All of them are probably terrestrial, though they resemble other annelids in being able to live for a considerable period under water. Salt or brackish water proves rapidly fatal to them, as was demonstrated not long ago on the occasion of a high tide overflowing the banks of the Midway at Rochester, when many thousands of worms might be seen lying dead on the surface. Worms are nocturnal in their habits, and only exceptionally leave their burrows by day; those that are found wandering on the surface are, Mr. DARWIN thinks, sick individuals affected by the parasitic larvae of a fly. They do not, however, bury themselves deeply except in very hot or very cold weather, but lie with their heads near the surface, partly perhaps for warmth, but more probably for respiratory purposes. The senses of worms, with the exception of that of touch, appear to be very feebly developed. Their sensitiveness to light varies remarkably, the earth annelids and shrewing off of a bright light concentrated on the head sometimes producing no effect, whilst at others it induces a rapid retreat of the animal into its burrow. Both Mr. DARWIN and HORSBURGH agree in thinking that light affects worms by its duration as well as its intensity, the light of a candle even causing them to withdraw or prevent them from leaving from their holes at night. They do not appear to possess any sense of hearing, remaining quiet both when a shrill metal whistle and a bassoon were sounded near them. Their faculty of smell, again, seems to be only developed so far as to enable them to distinguish the proximity of the favourite objects of food, for they remained unmoved by many odours, though they soon discovered and carried off fragments of salmon and cabbage. Their sensitiveness to contact, on the other hand, is very acute, and the slightest vibration, or even the impression produced by a feeble puff of air, is sufficient to induce rapid movement. They are sensitive; they like particles of meat and fat, and do not refuse the dead body of another worm. Their digestive fluids are found to resemble the pancreatic juice, and to digest albumen, fat, and starch. Everyone must have been struck with the leaves and petioles of leaves, that are so frequently found standing neatly vertically in the soil. These are probably often thought to be merely accidentally included, but it is well known that they are objects seized by worms and dragged into their burrows, partly for food, and partly to close the orifice; the latter object being demonstrated by the fact that small stones are gathered together and similarly placed. Mr. DARWIN'S observations on this point are very interesting. He describes the mode in which they seize such objects, showing that it is partly by the lips and partly by suction, and that they create a certain amount of induration in the mole in which they, if the expression may be allowed, manipulate them, so that they are always dragged to their holes with the least expenditure of force. The mode in which worms form their burrows has engaged Mr. DARWIN'S attention, and he thinks it is partly effected by a wedge-like clearing process, and partly by eroding the earth immediately in front of them. They penetrate sometimes to a depth of five or six feet, and there form chambers, where many hibernates, rolled together in a ball. He does not think HENRI'S estimate of 33,700 worms to an acre too high an estimate, and this

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number would weigh 356 lb., whilst their castings reached the surprising amount in one instance of 7·56 tons per acre, and in another of 16·1 tons per acre—an amount that, considering all this had passed through the bodies of the worms, is sufficient to show how important a part these animals play in the economy of Nature.

SOME of the Indian papers contain an outline of the scheme for the amalgamation of the British and Indian Medical Departments, which has been sent home for the approval of the India Office. It is, for obvious reasons, impossible to say how much reliance can be placed on the information thus furnished. But if the *précis* in the *Bombay Gazette*, which we publish elsewhere, be correct, it amounts to a complete fusion of the two services. The officers of the existing Indian Medical Department will be eligible for general service at home or abroad, but will be allowed the option of restricting their service to India if they so desire. This will be applicable only to the officers now serving, as all future appointments will be to the amalgamated department. It is stated that the officers of both services will be eligible for civil appointments, and that these in future will be held only for five years. It is also stated that the existing Indian officers will have the choice of Indian or British retired pay, and that their selection on this point will not interfere in any way with their claims upon the funds to which they have hitherto subscribed. We have long been of opinion that the course now proposed should have been taken when the old Indian Army was united with the Royal Army, and we are glad to think that such a measure is at last to be adopted. The folly of keeping up a double set of administrative officers had become so manifest that it was recently abolished. The proposed change will do away with the objectionable system of two departments of the public service competing against each other for the most eligible men to be employed on the same duties, and it will remove the antagonistic feeling which has undoubtedly prevailed among the officers of the two departments, when serving together, and when harmonious action was especially necessary to the successful working of an important branch of the army. That the scheme will not give satisfaction to all, that it will evoke strong remonstrances on the part of many men in both departments, may be taken for granted; but that it will work well for the army generally, and for the medical officers, we have no doubt. Care will be requisite on the part of the authorities in preparing the details of the scheme, and due regard must be paid to existing interests, but the welfare of the soldier, the efficiency of the medical service, and the interests of the taxpayers, must be held as superior to the claims, real or fancied, of the individuals affected by the change. The scheme sent home may be materially modified at the India Office, but we trust that the final organisation may be such as will meet with the approval of all who take an interest in the service, and that no undue delay will be allowed to take place in maturing what we trust may prove a lasting and satisfactory arrangement.

MR. A. MACALISTER, Surgeon to Sir Patrick Dun's Hospital, having resigned, the Board of Trinity College has appointed Mr. Ball to the vacancy.

Annotations.

“Ne quid nimis.”

FILARIA SANGUINIS HOMINIS.

THE members of the Pathological Society on Tuesday last enjoyed the rare opportunity (in this country) of seeing the *filaria sanguinis hominis* in the living state from a patient in the London Hospital suffering from hæmato-chyluria, under the care of Dr. Stephen Mackenzie. They were also enabled to hear from Drs. Cobbold and Vandyke Carter the facts at present known concerning filarious disease, whilst the observations related by Dr. Mackenzie, most patiently and carefully pursued for two months upon the case in question, were a valuable addition to these facts. In one important point these observations have resulted in a further discovery, to which we shall refer again. Our present purpose will be simply to gather up briefly the facts as detailed by these speakers, and to indicate their bearings upon the pathology of the obscure affections of the lymphatic system with which they are connected. In the first place we have now—thanks to the discoveries of Bancroft, Lewis, and Manson—a complete knowledge of the life-history of the parasite. Like so many similar creatures, it presents us with an example of alternation of generations; or more correctly speaking, of the need of two hosts for its full development. The minute almost structureless worms found in the blood of the human subject in such vast numbers are the *embryonic* forms of the *filaria* which requires the mosquito in which to develop into the sexually mature worm. The mosquito feeding on the blood at night, when the *filariæ* are generally alone to be found, becomes gorged with them. Their growth in the mosquito has been traced by Lewis and Manson, and it is presumed that they are only liberated from the body of their host by its death in the water to which it always finally resorts. The nematoid is thus set free, and possibly undergoes further development; for the mature worm measures some three inches in length. Its passage into the human body is easily explained; and the analogy in this respect with the larger nematoid—the guinea-worm—is one which Dr. Vandyke Carter ably illustrated. Once within the human body, the worm lodges in the tissues, but as to its migrations, and, indeed, its ultimate resting-place, but little is known. It would seem, from its discovery in a lymphatic abscess by Bancroft, and in a lymph scrotum by Lewis, to have a peculiar aptitude for selecting the lymph channels for its habitat; a selective power not more remarkable than that which urges the trichina to lodge in muscular tissue. This is further borne out by the fact that its embryos—the *filaria sanguinis hominis*—are met with in the blood and the urine of the subjects of chyluria and nævoid (or lymphatic) elephantiasis.

Now, although the various discoveries which have been made—at the expense of so much patient research and at such various times that, as Dr. Cobbold remarked at the meeting, they form each distinct “epochs”—have enabled us to form the above complete sketch of the life-history of the parasite, there are lacunæ still to be filled up. Thus knowledge is wanted upon the growth and migration of the parent worm after it has gained entrance into the human body, also as to its duration of life, and particularly as to the question whether it can take on the power of asexual reproduction, and if so, for how long a time. The myriads of *filariæ* that are probably daily reproduced in the body of such a patient as that under Dr. Mackenzie's care seem to demand such a fact as alternate generations, and also to raise the question as to the time during which the process of reproduction can continue. There is no reason to believe that the embryonic *filariæ* in the blood can undergo further development within the human body; indeed, analogy, as well as