

had coped with it. The work of making the dilapidated houses in the district habitable was progressing, it was stated, but owing to the scarcity of houses there was great difficulty in closing insanitary dwellings. During the discussion which ensued a member said a good deal of fault lay with the council, which had not adopted the Housing Act. There was, he said, a great demand for houses throughout the district. No action was taken.

#### SANITARY INSPECTORS' ASSOCIATION.

A sessional meeting of the South Wales and Monmouthshire Centre of the National Sanitary Inspectors' Association was held at the Council Chamber, Briton Ferry, on May 30th, under the presidency of Mr. David John, Chief Inspector, Pontypridd. There was a gratifying attendance of members. Mr. H. Alex. Clarke read a paper on Some Municipal Works of Briton Ferry, in which he showed that many engineering difficulties had been overcome and such excellent work carried out that the sanitary condition of the district was very good, as indicated by the low death-rate and the immunity from zymotic diseases. The council was carrying on some flourishing undertakings to the great advantage of the ratepayers. Mr. Trevor H. Hunter, clerk to the Briton Ferry Urban District Council, followed with a paper on the Duties of a Sanitary Inspector as to Taking Samples of Milk. The main object of the paper was to afford instruction as to how prosecutions for selling inferior milk should be conducted, and how probable lines of defence should be met. A vote of thanks to the readers of the papers was heartily accorded. Later the members and others were entertained to luncheon at the Royal Dock Hotel by the chairman and members and officers of the Briton Ferry Urban District Council, at which the chairman of the council, County Alderman Jenkin Hill, J.P., presided. Later the members set out for a two hours' walk to the Cefn Court reservoir and filter beds, from which the district water supply is obtained. By common consent the meeting was one of the most successful and enjoyable ever held by the association.

## India.

#### BOMBAY MEDICAL CONGRESS.

A MEDICAL CONGRESS will be held under the Presidency of His Excellency the Governor of Bombay in February, 1909. Among the Vice-Presidents are the members of the Governor's Council, the Director-General of the Indian Medical Service, the Principal Medical Officer, H.M.S. Forces in India, the Surgeon-General with the Government of Bombay, the Principal Medical Officer H.M.S. Forces, Poona Division; the Senior Medical Officer of the Royal Navy in Bombay and representative native medical practitioners; the General Secretary and Editor of the *Transactions* is Lieutenant-Colonel W. E. Jennings, I.M.S. The subjects to be considered are: The etiology, prophylaxis and treatment of plague; the etiology and prophylaxis of enteric fever; the etiology and prophylaxis of relapsing fever; the etiology, pathology, and treatment of tropical diarrhoeas; the differential diagnosis of the various types of malarial fever, with suggestions as to means of prevention and exhibition of the results of past measures from available statistics; the etiology, differential diagnosis, and sequelae of the various clinical types of dysentery—their treatment and prophylaxis; the pathological conditions dependent upon the invasion of the Leishman-Donovan body, with suggestions as to treatment and prophylaxis; the part played by parasitic insects (other than fleas and mosquitos) in the dissemination of diseases peculiar to the tropics—the geographical distribution of these insects, and suggestions as to the best means of obviating their attacks; the clinical and pathological effects of the different varieties of snake venom, and results of special lines of treatment illustrated from available statistics; the etiology, pathology, prophylaxis, and treatment of beri-beri; the pathology, distribution, and bacteriology of elephantiasis and mycetoma; the prophylaxis, bacteriology, and results of special methods of treatment of leprosy; the treatment of cholera; tropical surgery; and sanitation as applied to India. There will be an exhibition of pathological and microscopical specimens; of medical, surgical, and sanitary appliances; and, during one night

of the session, a series of lantern-slide demonstrations as well. The committee especially invite original contributions from prominent authorities on the subjects that have been enumerated; they are also prepared to consider the inclusion of voluntary contributions from those desirous of contributing. All medical visitors to the congress will be at liberty to join in the debates so far as the limit of time for each subject will permit. The session will extend over four days, and the subjects will be considered in six sections as follows:

*Section I.*—Cholera, first day; dysentery, second day; enteric fever, third day; tropical diarrhoeas, fourth day.

*Section II.*—Malarial fever, first day; plague, second day; Leishman-Donovan body invasion, third day; relapsing fever, fourth day.

*Section III.*—Parasitic insects, first day; snake venom, second day; beri-beri, third day; mycetoma, elephantiasis, and leprosy, fourth day.

*Section IV.*—Systems of disposal of sewage in India, first day; water supplies, measures necessary to ensure purity, etc., second day; disinfection, methods applicable to India houses (including methods of destroying vermin), third day; miscellaneous papers on general sanitation, fourth day.

*Section V.*—Ophthalmic surgery, first day; urinary calculi, second day; miscellaneous papers on tropical surgery, third day.

*Section VI.*—Exhibition, all days; lantern slide demonstration, second night.

## Canada.

[FROM OUR SPECIAL CORRESPONDENT.]

#### INSPECTION OF DOMESTIC WELLS IN OTTAWA.

The Laboratory of the Inland Revenue Department of the Dominion of Canada has recently issued a report on the inspection of domestic wells by the chief analyst, Mr. McGill.

The wells specially reported on are those in the towns of Weston, Richmond Hill, and Oakville, Ontario. The first eight or nine pages of the report deal with the conditions of well supplies, with special reference to sewage contamination and the organic and inorganic impurities contained in such polluted water. Special reference is made to the presence of chlorides, or rather chlorine in chlorides. In many of the villages in Canada there seems to be no proper water supply, each house having a separate well, upon which it is dependent for water for domestic purposes. These wells are always a source of danger, and Mr. McGill, in his report, endeavours to set forth as concisely as possible what he considers a properly constructed well should be, giving diagrams to illustrate his meaning. One would have thought that in such an enlightened country as Canada wells sunk in the midst of thickly-populated villages would have been abolished long ago; there is great risk of contamination from sewage even when the wells are built with concrete, brick, etc., and many of the wells reported on were simply dug down in the soil until they reached surface water.

Mr. McGill makes some pertinent remarks whereby useful information regarding the safety of country wells may be obtained, which will be comparatively inexpensive and thereby practicable. He says:

In the first place we may conclude that normal ground water is a safe source of supply. Owing, however, to the fact that the soil and subsoil of one locality differs from that of another locality in nature of constituent materials, their depth, compactness, or porosity, contiguity to neighbouring heights of land or to swamp, as well as in amount of annual rainfall, we cannot expect ground water to have the same characters everywhere. What we may expect is that in a given geological and topographical area the ground water will have a certain definite character. If the soil consist largely of limestone debris, we will find bicarbonate of lime in the water; if gypsum characterize the soil of the locality, we shall find sulphate of lime in the water; if chlorides be present in the soil, then chlorides will be found in the water, and so on. In a neighbouring area, separated, say, by a ridge of granite from the first, and having a soil resulting chiefly from the weathering and disintegration of granite, we shall find a ground water much softer than the first, and having small quantities of silicates and other products of the disintegration of granite in solution. Now all the wells—and there may be hundreds of them—which are dug into this ground water will fall into a class by themselves and exhibit common characters, provided that local soakage is prevented and the water they contain be the uncontaminated ground water of

that region. How, then, will an individual well be affected in whose case sewage finds entrance? Organic matter will increase, and especially will this be true of nitrogenous organic matter; phosphates and chlorides will be increased, nitrites and nitrates may be found in it, and a bacteriological examination may reveal the presence of the colon bacillus. To determine all this, of course a full analysis is needed. What I propose to do is to confine attention to some one characteristic and to select that one which is most surely and certainly determined. This I find to be the chlorine in chlorides.

Having thus a standard, so to speak, established, he analysed the water of a large number of the wells in the towns referred to, the chlorine varying from 2 parts per million up to 370. These analyses go to prove that the wells are dug in soil which is more or less saturated with sewage; none of them seem to be protected by a backing of any kind from soaks, and consequently most of them are contaminated with sewage which has undergone no such amelioration by soil filtration as would have resulted from proper construction.

## CORRESPONDENCE.

### COUSIN MARRIAGES.

SIR,—Through the kindness of the readers of your JOURNAL, I have received data bearing on about 1,600 marriages. I owe to Miss Ethel Elderton, of the Francis Galton Laboratory for National Eugenics, the tabling of the material with the following results:

First cousin marriages ... ..	4.69	per cent.
Second cousin marriages ... ..	1.69	"
Third cousin marriages ... ..	0.25	"
Other cousin marriages ... ..	1.13	"

The latter marriages include the marriages of children of half brothers or sisters, fourth cousins, cousins removed in various degrees, and the marriage of persons who are cousins in more than one line. Such marriages, therefore, may be closer in blood than second or third cousin marriages. The total of consanguineous marriages in this material is thus 7.76 per cent., as far as the recorders have knowledge. If we consider the various generations we have the following results:

Present generation of correspondents ...	8.37	per cent.
Generation of correspondents' parents...	16.15	"
Generation of correspondents' grand-parents ... ..	3.62	"

Now these results would compel us to believe that the tendency to cousin marriage has varied very considerably in the three generations, if our data really covers a random sample of the medical profession. I am inclined to hold, however, that a great many of my correspondents replied because they were the children of cousins or had married cousins, thus unconsciously damaging the random character of the sample. If this be so, then it follows that the 3.6 per cent. of the grandparental generation is a closer approach than the whole series to the actual amount of consanguineous matrimony in the professional classes. We tested this view by separating the data received before and after my second letter to the BRITISH MEDICAL JOURNAL, with the following result:

	Percentage of Cousin Marriages.	
	Earlier Data.	Later Data.
Present generation ... ..	9.15	5.63
Parental generation ... ..	20.51	4.76
Grandparental generation ... ..	2.82	6.09

I think this shows that the purpose of my first appeal was to some extent misinterpreted, and that a good many replies were received because my correspondents were the children of cousins, or had married cousins. The later data, however, are not very different for the different generations, and point to an average of 5.5 cousin marriages per cent. Thus my view of the best conclusion to be drawn from the present material is that consanguineous marriages in the professional classes probably occur in less than 8 per cent. and more than 5 per cent. of cases. That I cannot put the result more definitely than this will, I think, show the great difficulty there is in settling even such an apparently simple problem as the frequency of cousin marriage.

Owing to the great kindness of Dr. A. E. Garrod, senior physician to the Great Ormond Street Hospital for Children, certain casebooks at this hospital were kindly placed at our disposal, with a view to extracting the amount of consanguineous matrimony in another class of

the population. For a period of some years the question as to whether the parents of the children brought to the hospital were cousins or not was asked. Mr. D. Heron, of the Galton Laboratory, worked through the available material, and, after excluding duplicates, he found definite statements as to consanguinity in the cases of 700 pairs of parents. Among these there were 6 cases of first cousin marriages, 1 case of second cousins, 1 case of third cousins, and 1 case of first cousins once removed, or only 9 cases in 700 pairs, giving a consanguinity rate of 1.3 per cent. Now this result is of much interest, if the patients' parents can be relied upon for accurate information. It would appear to show—

1. That the diseases of children are not largely due to any consanguinity between their parents, and
2. That the population of our large towns rapidly drifts away from its relatives, so that little cousin marriage takes place compared with what is to be found in the professional classes. I am hoping shortly to test the frequency of cousin marriages among a rural population.

I regret that the above numbers are largely irregular and can give no final answer to an important problem. But I think they justify me in saying that until the percentage of cousin marriages reaches 10 or more per cent. in a selected class of the population, it would be rash to suppose that any characteristic of that class is the result of in-breeding. If cousin marriages are found to occur in 10 or more per cent. of cases among the parents of the insane or tuberculous, then I think the effect of consanguinity deserves full consideration.

I cannot conclude without most heartily thanking those members of the medical profession who have so kindly replied to my request, often with very ample material. If my data are not more conclusive it is the fault of those who have omitted to answer, not of those who have. If 400 persons would write down whether the first ten persons they meet of their acquaintance had or had not married cousins, this all-important problem could be definitely answered in ten days!—I am, etc.,

KARL PEARSON.

Biometric Laboratory, University College, London, W.C.,  
May 29th.

### A NEW VIEW OF THE NOTIFICATION OF BIRTHS ACT.

SIR—Dr. Brennan does me the honour of asking me a "question," so I will once more trouble you with a letter, otherwise I should have been quite content to have left your readers to judge between us.

Possibly I should have another reason—gratitude for gratuitous instruction in the methods of controversy. In return, even at the risk of Dr. Brennan calling it, in one of his stock Latin phrases, an *et tu quoque*, I will suggest that the first elements of all valuable controversy are clear thinking and the correct use of words.

My answer to his "question" is that it is not a question but a confusion, reminding one of the schoolboy's "if a herring and a half cost three-halfpence, at what time does the London express stop at Crewe?" His scheme does not necessarily leave the patient in the hands of her medical attendant, and mine certainly does not fail to make any provision for her, or leave her absolutely in the hands of the sanitary authority.

The question of the interests of the profession and the interests of the patient are separate matters, and whether the medical man notifies or not, his relation to his patient is precisely the same.

Then comes a lot of talk about "right of entry." Dr. Brennan says, "The vitally important question in this Act is right of entry," while, as a matter of fact there is not a single word about any such thing from the first line of the Act to the last. What right of entry there is exists entirely apart from this Act. It is a power conferred on sanitary and other authorities by Parliament, and is in no way touched by this Act nor by any arrangements Dr. Brennan and his friends may make.

Dr. Brennan claims he has made a bargain; but indeed, he has not, for the essential part of all bargains is a consideration on both sides. He receives no consideration in return for becoming, as he admits, for all time, a notice distributor for the sanitary authority, or whatever other title he prefers.

It is true the sanitary authority may forego the act of inspection when it thinks it desirable or in its interest to