born from marriages reported as consanguineous was nearly four times as great as from marriages not so reported. In the concluding advice given to the deaf, therefore, it is stated that under no circumstances whatever should union be permitted among those who are related in any degree of consanguinity. It was a study of United States statistics that led Graham Bell, the inventor of the telephone, to write his warning pamphlet, "On the Formation of a Deaf Variety of the Human Species in America."

Interesting examples of communities are extant which give support to opposite views as to consanguinity. Of these it will be sufficient to quote two. In the island of St. Kilda, off the Outer Hebrides, intermarriage has gone on for centuries, yet no case of congenital deafness has ever been known there. On the other hand, at the Island of Martha's Vineyard, on the southern coast of Massachusetts, where intermarriage also obtains, there were, in 1880, 20 congenital deaf-mutes in a population of 500.

A possible explanation of conflicting facts met with in discussing the effects of consanguinity has been suggested by Mackay,¹⁸ based upon the investigations of Thomson into the marriage customs of Fiji. In Fiji, cousin marriages are considered from two aspects: (1) where the contracting parties are the children of two brothers or of two sisters; and (2) where the contracting parties are the children of a brother and a sister respectively. Thomson has shown that the relationship between the children of two brothers or of two sisters is exactly the same as the relationship between the children of the same parents, and therefore marriage between two such children is strictly forbidden. On the other hand, cousins of opposite sexes, of whom the father of one is brother to the mother of the other, are said to be "concubitants,"¹⁹ that is to say, marriage between them is not only encouraged, it is obligatory. From an examination of census figures, taken with a view to the study of Fijian marriages, Thomson found that, as to both fecundity and vitality of offspring, the marriages between concubitants are superior to those between relations (not concubitants), or between fellow townspeople (not related), or between natives of different towns. In contrast with this, it appeared that marriages between relations (not concubitants) are greatly inferior to those of any other class. Whilst pointing out that this consideration, applied to the investigation of deaf-mutism, would mean the preparation of entirely new statistics, Mackay believes that, if this were done, it might reconcile present discordant opinions.

It is impossible totally to eradicate congenital deafness for a certain number will always appear, like other sporadic cases of defect. Their number could, however, be enormously reduced by the application of eugenic principles. If deaf-mute marriages, the union of blood relations, and the union of alcoholics, syphilitics, and those with a family taint of insanity could be prohibited, that alone would be of great assistance. We can at present, however, only educate public opinion. The medical practitioner has many grave responsibilities upon his shoulders, and not the least important of them is his duty to the State. He has it in his power to educate the public both by precept and by example, and he should never neglect an opportunity of using that power. It is a great pity that the doctor is not more often heard in Parliament, not as a crank, but as one who has exceptional opportunities, by education and experience, of giving valuable and practical aid to the State. But, for many reasons, the medical profession has, in this country at least, to work silently. Honours fall more readily to the destroyer than to the saviour, to the talker than to the thinker, and it needs repeated hammering to make people understand that it is the saviour and the thinker who are really of most worth. It is the medical practitioner who should be foremost in eugenics, and from what I have said it is evident that in the application of eugenic principles it would be possible greatly to reduce the number of deaf-born persons requiring special education. Out of 691 deaf children we have seen that 284, or over 41 per cent., were congenital. Could these be eliminated greater attention could be paid to the 407 acquired cases, their classification would be simplified, and the results of education would be better.

Queen Anne-street, W.

NOTES ON THE DURATION OF INFECTIVITY OF ENTERIC FEVER

AS ILLUSTRATED BY REPEATED BACTERIOLOGICAL EXAMINATION OF 27 CASES.

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ATTENTION has been given recently to the fact that patients convalescent from enteric fever pass, for a variable time, typhoid bacilli with their stools and urine. In order to estimate the length of time during which the bacilli may continue to be excreted a routine examination of the stools has been carried out during the last few months of all enteric fever patients treated in the Isolation Hospital, Southampton.

The usual routine methods have been employed. A small portion of the stool is mixed with sterile water, and two Petri's dishes are inoculated by means of a glass rod. Both dishes are inoculated by the same rod, the reason being that the first plate will as a rule contain, on being incubated, too many colonies; the second plate generally shows the colonies quite separate, and subcultures can be easily carried out. If the colonies on the plate are too numerous, most of the lactose of the medium is used up, and consequently there will be some *B. coli* colonies which do not show the characteristic change. For this reason an overcrowded plate should be discarded when subculturing colonies.

The following media have been employed in this investigation in order to make the first differentiation between the *B. coli* and the typhoid colonies: (1) McConkey's bile-salt neutral-red agar; (2) Endo's fuchsin agar; (3) Werbitzki's China-green agar; (4) Conradi-Drigalski's medium; and (5) Faucus's brilliant green agar. The principle of most of these media is the same. Lactose is added to the medium, which is decomposed, with formation of an acid, by the *B. coli* and not by the typhoid bacilli. The acid so formed acts on the indicator in the medium and changes its colour, thus enabling the *B. coli* group of organisms to be separated from the typhoid group.

There are other organisms, however, occurring in the intestines which are non-lactose fermenters, and therefore subcultures are necessary in order to identify the typhoid bacillus. The following additional tests are made: 1. Litmus milk cultures should show acidity and no curdling of the milk. 2. Indol ought not to be produced on growing the organism in peptone solution. Some varieties of peptone do not show indol production with any organism, so that the peptone solution should be tested beforehand with a known indol-forming organism. 3. Hanging-drop preparations should show a motile bacillus. 4. The organism should produce acid but no gas in glucose and mannite litmus peptone solutions.

As regards the choice of a medium for the preliminary separation of the organism, I have found McConkey's neutral-red bile-salt agar to be the most reliable. Endo's fuchsin agar is very sensitive, but it possesses two disadvantages: 1. It changes its colour and becomes useless if exposed for any length of time to the light. 2. The plates must be examined frequently at short intervals; if left too long in the incubator the deep-red *B. coli* colonies tend to spread and obscure the colourless non-lactose-fermenting colonies.

Faucus's brilliant green agar does not possess any advantages over McConkey's medium and is a little more difficult to prepare. Werbitzki's China-green agar differs from all the other media in not containing lactose. It consists simply of a 3 per cent. nutrient agar medium brought to a reaction of +13 (Eyre) and containing 0.003 gramme of Grübler's China-green in every 100 c.c. of the medium. On this medium, as Professor McWeeney points out, about 75 per cent. of the *B. coli* colonies are suppressed, and the developing colonies are small, opaque, and point-like. The typhoid colonies are larger and darker in the centre. Professor McWeeney recommends this medium for the detection of typhoid bacilli in stools.

The stools of 27 patients have been examined and cultures made during the convalescent stage after the temperature had reached normal. In cases showing a positive result weekly examinations were made until a negative result was obtained. Of course, in a hospital it is not practicable to

¹⁸ The General Practitioner and Deaf-Mutism, The Practitioner, October, 1908.

¹⁹ Concubintancy in the Classificatory System of Relationship, Journal of the Anthropological Institute, May, 1895.

Number of case.	Sex and age.	Date of admission.	Day of disease on admission.	Date of normal temperature.	Duration of pyrexia after admission in days.	Dates of examination of stools.	Number of days of normal temperature preceding examination of stools.	Result.	Remarks.
1	F., 34 years.	Oct. 11th.	4	Oct. 30th.	19	Oct. 12th.	Temperature still raised.	Negative.	Widal's reaction present. No abdominal symptoms, but continuous pyrexia for 19 days.
						Dec. 10th.	42.	"	
2	F., 1½ years.	Nov. 29th.	15	Nov. 30th.	8 hours.	Dec. 5th.	6	Positive.*	Very mild case with few symptoms. Three members of the family admitted three weeks after, evidently infected from this baby.
3	M., 6 years.	Nov. 3rd.	8	Nov. 11th.	8	Dec. 7th.	26	Positive.	Mild case.
						" 15th.	34	"	
						" 21st.	40	Negative.	
4	M., 20 years.	Nov. 5th.	14	Nov. 19th.	14	Dec. 21st.	31	Negative.	—
5	F., 29 years.	Sept. 16th.	24	Oct. 20th. Relapse Oct. 24th. Temperature again normal Nov. 15th.	34	Nov. 9th.	Pyrexia present.	Positive.	Case characterised by prolonged temperature. No severe symptoms.
						" 24th.	9	"	
						Dec. 2nd.	17	"	
						" 15th.	30	"	
						" 19th.	34	"	
						" 28th.	43	Negative.	
6	F., 19 years.	Oct. 25th.	7	Nov. 22nd.	28	Dec. 27th.	35	Positive.	—
						Jan. 3rd.	42	Negative.	
7	F., 45 years.	Sept. 10th.	25	Oct. 10th. Relapse Oct. 22nd. Temperature again normal Nov. 12th.	30	Nov. 25th.	13	Positive.	Prolonged case with marked diarrhoea and hæmorrhage.
						Dec. 2nd.	20	"	
						" 12th.	30	"	
						" 19th.	37	"	
						Jan. 3rd.	52	Negative.	
8	F., 7 years.	Oct. 3rd.	7	Oct. 16th. Temperature again elevated Dec. 7th owing to abscess.	13	Dec. 30th.	Pyrexia present.	Negative.	Large abscess which contained staphylococci.
9	F., 20 years.	Oct. 2nd.	6	Oct. 16th.	14	Nov. 14th.	29	Positive.	Mild case with little diarrhoea.
						" 22nd.	37	"	
						" 29th.	44	"	
						Dec. 5th.	50	"	
						" 12th.	57	"	
						" 20th.	65	"	
						Jan. 2nd.	78	"	
10	M., 12 years.	Nov. 13th.	9	Nov. 24th.	11	Dec. 26th.	32	Positive.	Mild case.
						Jan. 2nd.	39	Negative.	
11	F., 11 years.	Sept. 16th.	9	Sept. 24th.	8	Oct. 20th.	26	Positive.	Very little diarrhoea throughout illness.
12	M., 8 years.	Sept. 6th.	11	Sept. 25th.	19	Oct. 15th.	20	Negative.	Diarrhoea well marked.
13	M., 31 years.	Aug. 17th.	14	August 19th. Relapse Sept. 10th. Temperature again normal Sept. 19th.	2	Oct. 12th.	23 (dating from end of relapse).	Negative.	—
14	F., 7 years.	Sept. 17th.	3 (?)	Sept. 27th.	10	Oct. 20th.	23	Negative.	—
15	F., 22 years.	July 20th.	18	August 6th. Relapse August 15th. Temperature again normal Sept. 8th.	17	Oct. 2nd.	24	Positive.	Diarrhoea well marked.
						" 7th.	29	Negative.	
16	M., 6 years.	Sept. 13th.	13	Sept. 25th. Transient rise on Oct. 2nd, lasting only 24 hours.	12	Oct. 24th.	28	Negative.	—
17	M., 7 years.	Sept. 15th.	17	Sept. 21st.	6	Oct. 17th.	26	Positive.	—
						Oct. 25th.	34	Negative.	
18	M., 12 years.	Sept. 29th.	14	Oct. 4th.	5	Oct. 31st.	27	Negative.	Mild case.
19	F., 9 years.	Sept. 7th.	4	Sept. 27th.	20	Oct. 30th.	33	Negative.	—

* Endo's and Wercitzki's media used. Subcultures made on potato, milk, peptone, and McConkey's media. Cultures agglutinated with known typhoid serum.

Number of case.	Sex and age.	Date of admission.	Day of disease on admission.	Date of normal temperature.	Duration of pyrexia after admission in days.	Dates of examination of stools.	Number of days of normal temperature preceding examination of stools.	Result.	Remarks.
20	M., 35 years.	Aug. 23rd.	13	Sept. 18th.	26	Oct. 12th. " 18th. " 24th. " 28th. " 31st. Nov. 8th. " 10th.	24 30 36 40 43 51 53	Positive. " " " " Negative. "	Severe case.
21	M., 13 years.	Oct. 4th.	10	Oct. 18th.	14	Nov. 20th.	32	Negative.	—
22	F., 18 years.	Oct. 2nd.	6	Oct. 24th.	22	Nov. 17th. " 22nd. Dec. 2nd.	24 29 39	Positive. " Negative.	—
23	M., 23 years.	Aug. 31st.	9	Sept. 30th.*	30	Nov. 16th. " 24th. Dec. 2nd.	14 22 30	Positive. " Negative.	Multiple abscesses due to staphylococci. Got up Nov. 8th.
24	M., 7 years.	Oct. 10th.	8	Oct. 19th.	9	Nov. 20th. " 29th.	32 41	Positive. Negative.	Up in clothes Nov. 21st.
25	F., 6 years.	Oct. 5th.	9	Oct. 14th.	9	Nov. 25th.	42	Negative.	Up in clothes Nov. 19th.
26	M., 30 years.	Sept. 30th.	15	Oct. 24th.	24	Nov. 20th. " 29th. Dec. 5th.	27 36 42	Positive. " Negative.	Up in clothes Nov. 13th.
27	M., 23 years.	Oct. 16th.	6	Nov. 5th.	20	Dec. 7th.	32	Negative.	Up Nov. 27th.

* An irregular pyrexia, due to the abscesses, commenced on Oct. 7th, the temperature again becoming normal on Nov. 2nd.

keep patients until assurance is made that they will not become carrier cases ; several examinations showing negative results are necessary to make certain that the patient will not become a carrier, as it is well known that carriers often pass the bacilli intermittently.

Some importance may eventually be ascribed to discovering the period when a patient ceases to pass the bacilli, as probably it will be found that these cases are free from the liability to have relapses. I cannot, however, give any proofs of this at present. A glance at the table will show the variability in the period when a negative result was obtained.

The persistence of infection bears no relation to clinical signs ; the patient in No. 9, who showed typhoid bacilli in the stools 78 days after the temperature was normal, was a mild case with little diarrhoea.

A consideration of the table tends to show that carrier cases do not have such a marked influence on the spread of the disease as might be thought possible, because "return" cases of enteric fever are very rare, and as most hospitals discharge their patients without a bacteriological examination of the stools a fair proportion must be sent home with typhoid bacilli still present in the intestines.

I am indebted to the medical officer of health, Dr. Lauder, for permission to publish this article.
Southampton.

Dr. George M. Robertson, lecturer on mental diseases in the University of Edinburgh, and physician-superintendent of the Royal Morningside Asylum, Edinburgh, and Dr. A. R. Urquhart, physician superintendent of James Murray's Royal Asylum, Perth, have been elected corresponding members of the Society of Psychiatry of Paris.

THE WEST HAM AND EAST LONDON HOSPITAL.
—At a large public meeting of the governors and subscribers of this charity, held in the council chamber of the Town Hall, Stratford, by kind permission of the mayor and corporation, the alteration of the name of the institution to "The West Ham and Eastern General Hospital" was unanimously confirmed. The hospital is now in every sense of the term a general hospital, having surgical and medical wards for both male and female cases, as well as ample accommodation for dealing with accidents.

SPOROTRICHOSIS.

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THE disease known as "sporotrichosis" seems to be sufficiently rare to justify the publication of notes upon a case which just recently came into my hands. Further history of the case and the effects of the therapy may allow a more complete picture of it to be given.

The patient, a female, aged 18½ years, had been quite a healthy child up to six years ago. The family history does not show anything of importance ; neither tubercle nor specific disease can be traced. Six years ago the patient had a glandular swelling on the left side of the neck, which was operated upon, the glands being removed. She was quite well after that until about three years ago, when the whole of her neck—that is, probably all the cervical glands—began to swell, the condition being diagnosed as Hodgkin's disease. After a few months a diagnosis of tubercular glands was made by another medical man, and the patient was submitted to X ray treatment, which apparently at one time caused the glands slightly to decrease in size, but they rapidly increased again, and the prolonged X ray treatment did not seem to have any further effect.

The case came into my hands on Nov. 18th, 1910, and from the opsonic index to tubercle (which varied between 1·22 to 0·73) I concluded that the diagnosis of tubercle must have been the correct one, and the patient was submitted to a course of inoculations with B.E. tuberculin. At the same time there was a fairly hard, not very tender, swelling over the middle third of the left tibia which was sometimes painful, especially at night. This swelling had existed (as I was informed) since September, 1910.

The three possibilities which were taken into consideration at the time were : (1) tubercular periostitis or osteitis ; (2) gumma ; and (3) osteo-sarcoma. No. 1 seemed to be the most probable one in consideration of the condition of the glands of the patient. To exclude No. 2 a Wassermann test was made which proved negative. To decide No. 3 the effects of the tuberculin treatment could be watched. There existed also a sinus behind the left ear, above the mastoid process, the result of an incision designed to lead