in the blood. We have continued our work and we find that this is not peculiar to the disease just mentioned, but that in various other degenerative nervous diseases (combined sclerosis, disseminated sclerosis, alcoholic neuritis, and beri-beri), choline can also be detected in the blood. The tests we have employed to detect choline are mainly two: (1) a chemical test—namely, the obtaining of the characteristic octahedral crystals of the platinum double salt from the alcoholic extract of the blood; and (2) a physiological test—namely, the lowering of blood-pressure (partly cardiac in origin and partly due to dilatation of peripheral vessels) which a saline solution of the residue of the alcoholic extract produces; this fall is abolished or even replaced by a rise of arterial pressure if the animal has been atropinised. It is possible that such tests may be of diagnostic value in the distinction between organic and so-called functional diseases of the nervous system. The chemical test can frequently be obtained with 10 cubic centimetres of blood.

A similar condition was produced artificially in cats by a division of both sciatic nerves, and is most marked in those animals in which the degenerative process is at its height, as tested histologically by the Marchi reaction. A chemical analysis of the nerves themselves was also made. A series of 18 cats was taken, both sciatic nerves were divided, and the animals were subsequently killed at intervals varying from one to 106 days. The nerves remain practically normal as long as they remain irritable—that is, up to three days after the operation. They then show a progressive increase in the percentage of water and a progressive decrease in the percentage of phosphorus until degeneration is complete. When regeneration occurs the nerves return approximately to their previous chemical condition. The chemical explanation of the Marchi reaction appears to be the replacement of phosphorised by non-phosphorised fat. When the Marchi reaction disappears in the later stages of degeneration the non-phosphorised fat has been absorbed. This absorption occurs earlier in the peripheral nerves than in the central nervous system. This confirms previous observations by one of us (M.) in the spinal cord in which unilateral degeneration of the pyramidal tract by brain lesions produced an increase of water and a diminution of phosphorus in the degenerated side of the cord, which stained by the Marchi reaction.

The paper is illustrated by tracings of the effects on arterial pressure of the choline separated out from the blood of the cases of nervous disease mentioned and from the blood of the cats operated on. Tables are also given of the analyses of the nerves and drawings and photo-micrographs from histological specimens of the nerves. A summary giving the main results of the experiments on animals is shown in the following table:—

Days after section.	Cats' sciatic nerves.			Condition of blood.	Condition of nerves.
	Water.	Solids.	Percentage of phosphorus in solids.		
Normal	65.1	34.9	1.1	{ Minimal traces of choline present.	{ Nerves irritable and histologically healthy.
1-3 ...	64.5	35.5	0.9		
4-6 ...	69.3	30.7	0.9	Choline more abundant.	{ Irritability lost; degeneration beginning.
8 ...	68.2	31.8	0.5	{ Choline abundant.	
10 ...	70.7	29.3	0.3		
13 ...	71.3	28.7	0.2		
25-27...	72.1	27.9	Traces.	{ Choline much less.	{ Marchi reaction still seen, but absorption of degenerated fat has set in.
29 ...	72.5	27.5	0.0		
44 ...	72.6	27.4	0.0	{ Choline almost disappeared.	{ Absorption of fat practically complete. Return of function; nerves regenerated.
100-106	66.2	33.8	0.9		

IN consequence of the death of Professor Manassein of St. Petersburg we regret to learn that the *Vrach*, the foremost medical weekly paper in Russia, which was founded by him, is likely to be discontinued, at all events after the close of the current year.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A CASE OF ERYTHEMA SCARLATINIFORME DESQUAMATIVUM.

By C. KILLICK MILLARD, M.D., D.Sc. EDIN.,
MEDICAL OFFICER OF HEALTH, BURTON-ON-TRENT.

AS comparatively few cases of this disease have been recorded in this country, and as from a diagnostic point of view the affection is of importance on account of its resemblance to scarlet fever, the following case may be of interest. The case was under the care of Mr. E. C. Stack, F.R.C.S. Irel., by whose courtesy it was brought to my notice.

The patient, a man, aged 36 years, was attacked on Nov. 24th, 1900, with slight pyrexia and malaise accompanied by an intense universal scarlatiniform eruption. He was first seen by me on the 26th. The eruption was then beginning to fade. It consisted in a diffuse erythema affecting the skin everywhere, including the face, the palms of the hands, and the soles of the feet, and presenting an appearance closely resembling that of a severe case of scarlet fever. The tongue was slightly furred, but the fauces appeared to be unaffected. The pyrexia and malaise had now passed off. On the 27th, three days from the onset, desquamation set in, beginning on the upper part of the chest, and it rapidly involved the whole surface, the palms of the hands and the soles of the feet being affected last. The process developed just as in scarlet fever, but with more rapidity. It was very profuse, the epidermis in some parts coming away in sheets. It continued for about three weeks, the patient returning to work at the end of that time after making an uninterrupted recovery. An examination of the urine revealed nothing abnormal. The patient, who otherwise had enjoyed good health, had suffered from attacks similar to the above ever since he was a child. They usually recurred about once every 12 months, irrespectively of season. He once, however, had two attacks in three months. He had never been able to account for them in any way and was unaware of any cause, dietary or otherwise, tending to determine them. They came on quite without warning, the first noticeable symptom being a feeling of burning heat in the skin immediately followed by the appearance of the eruption. The latter usually appeared first about the genitals and rapidly invaded the whole surface of the body. It was not specially irritating. There were usually some headache and malaise at the onset, but they were not severe and soon passed off and the appetite was not affected. The constitutional disturbances, indeed, appeared to be very slight. Desquamation always began within two or three days, appearing first about the neck, the shoulders, or the face, and last upon the hands and feet. It was always profuse and on one occasion, several years ago, the nails were shed. The process was usually completed in about three weeks. During an attack he would remain at home, but never in bed. The attacks had more than once been diagnosed as scarlet fever until the full history was given and his appearance at out-patient departments was apt to cause a commotion. The patient had eight brothers and sisters, all healthy, but two cousins, he believed, suffered in a somewhat similar way but to a less extent.

The above appears to be a typical case of idiopathic erythema scarlatiniforme desquamativum. The disease is a rare one in this country, but is more common in France, and our knowledge of it is chiefly due to the French dermatologists Bercier and Brocq. Erythema scarlatiniforme desquamativum is a febrile non-infectious exanthematous affection. The tongue may be furred, but it is never a typical "strawberry" tongue, and the fauces are unaffected. Pyrexia is usually slight, but the temperature may occasionally reach 103° or 104° F. The eruption is generally universal and intense, and it closely resembles that of scarlet fever. Desquamation always sets

in early, a point of some diagnostic importance, and is usually profuse, the hair and nails being sometimes shed. The pathology is obscure. Brocq is inclined to regard the affection as a general exfoliative dermatitis. The etiology is also uncertain. Many of the cases appear to be idiopathic and to depend upon predisposition; the attacks then tend to recur. Amongst the causes that have been given are: (1) septicæmia and pyæmia; (2) specific fevers—e.g., variola and typhoid fever; (3) rheumatism, ague, chronic Bright's disease; (4) sewer gas poisoning (Crocker); and (5) drug manifestations. The disease is to be distinguished from scarlet fever by the absence of throat symptoms, by the disproportion between the intensity of the eruption and the amount of pyrexia, by the absence of the "circum-oral ring," and by the early onset of desquamation. When there is a history of recurrent attacks, as in the present case, the diagnosis should be easy. The prognosis in idiopathic cases is favourable. In other cases it will depend upon the associated cause. The treatment must be on general principles, but is unsatisfactory. Arsenic is to be avoided.

Burton-on-Trent.

NEUTRAL RED AS A MEANS OF DETECTING THE PRESENCE OF THE BACILLUS COLI COMMUNIS IN WATER-SUPPLIES.

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ASSISTANT BACTERIOLOGIST TO THE LONDON HOSPITAL.

(From the Bacteriological Laboratory, London Hospital.)

QUITE recently I showed¹ that the use of neutral red as suggested by Rothberger afforded a reliable method of distinguishing the bacillus coli communis from the bacillus typhosus, and further, that it was possible to diagnose by means of this method with certainty the presence of the bacillus coli communis in the majority of fluids within from 12 to 24 hours. At my suggestion Dr. Makgill has made some experiments with the object of finding whether this reaction affords a means of detecting the bacillus coli communis in water-supplies and of estimating thereby the number of bacilli present. The following is a summary of the results obtained.

Media containing neutral red form an extremely delicate test for the presence of the bacillus coli communis. This is most marked in the case of peptone bouillon in which the presence of one or two bacilli will produce a reaction within 24 hours if other micro-organisms are excluded. In water containing the ordinary varieties of aquatic micro-organisms the reaction is delayed unless comparatively large numbers of the bacillus coli communis are present. Thus, if a cubic centimetre of unsterilised tap-water, containing from 10 to 20 bacilli coli per cubic centimetre, were mixed with the neutral red bouillon, a reaction would be present in 24 hours, but if the bacilli numbered only from three to four per cubic centimetre their presence might not be shown until the second day had been completed. By noting such differences in time as varying amounts of the water to be examined require, a fairly accurate idea of the proportions of the bacillus coli present can be gained. By making shake cultures with one or two cubic centimetres of water in neutral red glucose agar, and incubating at 37° C. for two or three days, the bacillus coli can be detected and can be readily isolated when present in extremely small numbers. The reaction in broth has so far proved to be specific. In glucose agar, however—i.e., under anaerobic conditions—the bacillus tetani and the bacillus maligni oedematis produce a reaction similar to that of the bacillus coli communis. Notwithstanding this fact the value of the reaction in regard to the presence of the bacillus coli communis in water-supplies is scarcely affected. Dr. Makgill intends to publish soon the results of his experiments more in detail.

London Hospital, E.

A NOTE ON THE CONCURRENCE OF MEASLES AND DIPHThERIA.

BY J. D. RAWLINGS, M.B. LOND., &c.,
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ONE or two cases of the somewhat unusual combination of measles and diphtheria having been recently published in

¹ THE LANCET, March 2nd, 1901, p. 613.

THE LANCET the notes of the following case which came into my hands in 1895 at St. Bartholomew's Hospital may interest some of your readers.

The patient, a child, aged 13 months, was admitted into the hospital for laryngeal obstruction. She was quite well till a week before, when she developed a cough. This continued till the day of admission when it became croupy and the breathing was noisy. On the day before there were a little discharge from the nose and redness of the eyes. There was no history of exposure to the infection of diphtheria. Two children in the house where the patient lived had had measles a fortnight before. The patient never had measles or any other illness. On admission the child was not very ill and was not cyanosed. The breathing was stridulous, but the signs of laryngeal obstruction were not very great—indeed, tracheotomy never became necessary. The respirations were 40. There was slight inspiratory recession of the lower costal cartilages and epigastrium; the sterno-mastoids and scaleni were working. The temperature was 102·8° F. and the pulse was 160, of smaller volume during inspiration than during expiration. There was no rash. General dry bronchitis existed, but there were no signs of pneumonia. There was nothing abnormal in the fauces and there was little or no enlargement of the glands at the angles of the jaw. The urine showed a thick cloud of albumin. There was very slight injection of the conjunctivæ. The diagnosis was important as I had to decide at once whether to admit the child to the diphtheria ward or not. I decided to do so. On the next morning the child had a measles rash, and the pathologist reported that diphtheria bacilli had grown from the swab. The little patient died three days after admission. Post mortem, flakes of diphtheritic membrane were found in the larynx and trachea and there was extensive broncho-pneumonia in both lungs.

The case is interesting chiefly from the point of view of diagnosis. The recognition of the diphtheria was due to the quantity of albumin in the urine and to the fact that the signs of laryngeal obstruction, although not great, were more than are generally found in the catarrh of uncomplicated measles. These mixed cases of measles and diphtheria in young children are almost always fatal, and I think Mr. W. Wyllys is to be congratulated on the favourable result in the case which he has published.¹

Dorking.

A Mirror

OF

HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv., Proœmium.

ST. MARY'S HOSPITAL.

A CASE OF SUBPHRENIC AND SPLENIC ABSCESS;
OPERATION; RECOVERY.

(Under the care of Dr. W. B. CHEADLE and
Mr. H. STANSFIELD COLLIER.)

THE etiology of sub-diaphragmatic abscesses is frequently very obscure, but it is fairly certain that in most of the cases the abscess is connected with a perforation of the stomach, duodenum, or some other portion of the bowel. Dr. Lee Dickinson in a paper read before the Pathological Society in 1895² referred to a case of subphrenic abscess which resulted from a duodenal ulcer. Occasionally it may follow an appendicitis, but the abscess then is generally on the left side of the body. For the notes of the case we are indebted to Dr. H. J. Van Praagh, house physician.

A domestic servant, aged 19 years, was admitted into the Alexandra Ward of St. Mary's Hospital on Oct. 20th, 1900, under the care of Dr. Cheadle, suffering from pain in the chest and shortness of breath. The patient had been quite well on the 18th, but on the evening of that date, whilst stooping at her work she was suddenly seized with

¹ THE LANCET, Feb. 23rd, 1901, p. 549.

² THE LANCET, April 6th, 1895, p. 874.