been easy at all times, irrespective of the growth of vegetable life and the presence of iron.

As the water level sinks in the lake in summer, there is no alternative but to draw water from the second chamber, where the quality and character of the water are distinctly different from those of the surface water and only favourable for choking the filter beds. The temperature, the increase of vegetable organic matter in water, together with a simultaneous reduction in dissolved oxygen and the evolution of carbon dioxide favour the growth of low forms of vegetable life and the concentration of iron in a soluble state.

It is interesting to note that the growth of a *Crenothrix*, unlike other forms of vegetable life, increases free ammonia (Thresh). This is corroborated by our own experiments, thus confirming the presence of *Crenothrix* by chemical tests. This can be explained by the fact that iron which is always associated with *Crenothrix*, very appropriately called *iron-bacterium*, reacts with the ultimate reduction of nitrate into free ammonia.

The vegetable organic matter, sulphuretted hydrogen and carbon dioxide present in water of the second chamber are responsible for the concentration of iron in soluble form as ferrous bicarbonate. But when the water flows from the lake and scatters over the filter beds, coming into contact with air and light, this unstable compound of iron takes on a gelatinous state which is probably the main factor in clogging the fine crevices of slow sand filters.

TREPONEMA VINCENTI AND *BACILLUS FUSIFORMIS* AS POSSIBLE CAUSATIVE AGENTS IN A GROUP OF CASES RESEMBLING MILD INFLUENZA.

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MANY observers have demonstrated the presence of treponemata especially *T. vincenti* in various conditions:—

1. There are certain necrotic and gangrenous infective processes in human beings, such as ulcero-membranous angina, hospital gangrene, noma, fœtid bronchitis, and gangrenous laryngitis in which spirochætes have been frequently demonstrated. Of these one of the chief is the so-called spirillum described by Vincent (1896, 1899) now known as *Treponema vincenti* (Extract from Topley and Wilson—*Principles of Bacteriology and Immunity*—1929).

2. It is not clear whether *Treponema vincenti* is responsible for the various necrotic processes in which it is found or whether it is a secondary invader. Since the organisms may sometimes be demonstrated in the depths of infected tissues it is possible that it may possess actual invasive properties (Ellermann, 1907).

3. Treponemata have been isolated from the sputum of tubercular patients (Bezancon and Etchegoin, 1926) and from bronchial and pulmonary lesions (Bacigalupo, 1928), but we know nothing of the relationship of these organisms to each other or to *Treponema vincenti*.

My attention was drawn to *Treponema vincenti* persistently occurring along with *Bacillus fusiformis* in a group of cases clinically resembling mild influenza.

During the month of April and the early part of May 1929, there were a few cases amongst the troops at Jhansi which were diagnosed "mild influenza." Twenty-five such cases were treated at the Indian Military Hospital, Jhansi. The symptoms in most of these cases were those of fever, headache, pain in the body, coryza with congestion of the throat. In eight of these cases a definite bronchitis was present, but in no case was there any sign of the lung tissue being involved in the inflammatory process. The fever came down to normal in most of these cases in 48 hours. In three cases the pyrexia lasted 3 or 4 days. The highest temperature reached was 104°F., the average being 101—102°F.

The symptoms as met with in the patients were:—

Pyrexia—24 cases—one case had no fever throughout the illness.

Congestion of the throat—24 cases—in one case the throat was not congested.

Headache—13 cases.

Pain in the body—10 cases.

Hæmoptysis—2 cases.

Tonsils enlarged and inflamed—4 cases.

Bronchitis—8 cases.

An attempt was made to isolate the causative organism. The procedure adopted was as laid down for the isolation of the influenza bacillus in Parke and Williams' *Pathogenic Micro-organisms*, 1925 edition.

The sputum was collected daily in sterile test tubes from the day of admission to the hospital to the day the patient was discharged. Throat swabs were also taken from the nasopharynx. Cultures were made on blood-agar, the growth being examined after 24–48 hours. Direct examination of films of sputum and of smears from the throat swabs stained by Giemsa's stain, weak carbol fuchsin and Gram's stain was carried out. The influenza bacillus could not be detected in any of these cases either by culture or by direct method. In all these cases *Treponema vincenti* were found in large numbers along with *Bacillus fusiformis* in the films of the sputum but never in the smears from the throat swabs. Weak carbol fuchsin demonstrated well *T. vincenti* and Giemsa's stain brought out the one or more granules in and the double pointed appearance of *B. fusiformis* very clearly. In most cases *T. vincenti* and *B. fusiformis* disappeared within 3 to 4 days. In five cases they persisted for 7 or more days. In no case was one organism discovered in the absence of the other. None of the throat swabs were positive to *T. vincenti* or *B. fusiformis* although all

the cases excepting one had congestion of the pharynx. In every case including one in which no congestion of the pharynx was present, both the organisms were present in the sputum. Throat swabs were taken prior to any treatment being applied to the throat in all cases. The question of faulty technique with regard to the throat swabs will also not seem to arise as during this period eight throat swabs from cases of tonsillitis were received in the laboratory for examination for *B. diphtheriæ* and other organisms, in none of which either *T. vincenti* or *B. fusiformis* was found to be present. The mouths of many of these patients were free from dental caries, gingivitis, stomatitis, etc.

It may be pointed out that no definite claim is made that either *T. vincenti* or *B. fusiformis* is considered to be the causative organism in these cases as the evidence is obviously inconclusive. No animal inoculations were carried out, but apparently *T. vincenti* injected subcutaneously into guinea-pigs usually gives rise to no harmful effects as stated by Tunnicliff in 1906. Nevertheless it is thought that it is probable that in these cases the treponemata were the causative agents of the symptoms, and that their occurrence in this group of cases is of sufficient interest to be recorded.

My thanks are due to Jemadar Gurcharan Singh for his help in this work.

CORRIGENDA.

By an unfortunate oversight, the letterpress to the colour plate facing p. 6 in our issue for January 1931 was not printed. It should read as follows:—

Fig. 1.—Schizont rosette of *P. falciparum* ingested by a large hyaline mononuclear leucocyte. Case 5.

Fig. 2.—Merozoite of *P. vivax* ingested by a polymorphonuclear leucocyte.

Fig. 3.—A single field from a blood film from Case 5, taken on 2nd September, 1930, showing growing trophozoite and early schizont forms of *P. falciparum* in the peripheral blood.

Fig. 4.—Schizont rosette of *P. falciparum* ingested by a polymorphonuclear leucocyte. Case 5.

Fig. 5.—A single field from a blood film taken from a diabetic patient who contracted a fatal infection with *P. falciparum,* showing growing trophozoites and schizont forms in the peripheral blood.

In the map opposite p. 12, showing the distribution of filariasis in India, the letterpress below the map should be deleted. It refers only to the blank map forms.

A Mirror of Hospital Practice.

A CASE OF CELLULAR EMPHYSEMA.

By G. B. ARCHER, M.D., Toronto,

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A MOHAMMEDAN GIRL, aged 4, reported at the dispensary on September 5th. The complaint was fever for three days, and a swelling over the suprasternal notch. This was about the size of an egg and had the crackling of cellular emphysema. There was no history of injury. She was seen on this occasion by our house physician, who advised the parents to leave her in hospital but this they refused to do. On September 7th, the child was brought again and I admitted her into hospital. There was no fever, but the cellular emphysema had extended over the neck to the cheeks, the abdomen and back to below the level of the umbilicus, and the arms to the elbow joints. The child was restless and had slight dyspnœa and cough, but nothing abnormal could be heard in the chest. The emphysema extended down the arms to the wrists. On the 10th the emphysema began to subside, leaving the arms first and becoming less marked over the chest and abdomen, and to-day, September 17th, the emphysema has entirely disappeared, the child was quite well and was discharged.

The only treatment followed was bandaging the chest and arms, and small doses of tinct. camph. co. to allay cough and restlessness.

A CASE OF ANOMALOUS DIAPHRAGMATIC MOVEMENTS.

By R. N. TANDON, B.SC., M.B., B.S., D.M.R.E. (Cantab.), T.D.D. (Wales),

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A FEW months back, a young man, aged about 40 years, a case of pulmonary tuberculosis, was sent to me for *x*-ray examination of the chest. The patient was a resident of the province of Bihar, and had come to Bhowali for treatment. He had been suffering from this disease for about 3 years, and at the time of examination was practically without symptoms, and was taking long walks as advised by his physician. Radiological examination showed that the disease was confined to the left lung in the upper and the middle zones. No evidence of infiltration could be made out, the lesion had almost completely fibrosed and was badly pulling on the trachea and the aorta. The contralateral lung was extraordinarily radioluscent. However, contrary to what one would expect, the left side of the diaphragm was moving much more freely than the right, as a matter of fact the limited excursions on the right attracted attention. No previous history of pleurisy on the right side was forthcoming and no radiological evidence of disease could be found in that lung. On enquiry it was found from the patient's physician that some prolonged expiration was noted by him on the right side.

One is inclined to think that the anomalous movements may be explained by the existence of compensatory emphysema on the right side, which restricted the diaphragmatic movements. If it be so, one is at a loss to understand why the compensatory emphysema, if it was to occur, did not do so in the healthy part of the left lung.

SKIN-GRAFTING IN COMPLETE AVULSION OF THE SCALP.

By K. L. BASU MALLIK, M.B.,

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COMPLETE avulsion of the scalp must of necessity be a comparatively rare occurrence and the following case is reported to show what can be done to such patients out in the tropics by way of skin-grafting.

Two photographs are reproduced to show the condition of the scalp before and after the skin-grafting.

T. D., Hindu female, aged about 26 years, was employed inside the "preparing" department of a jute mill. Her occupation was that of a feeder of jute