There are numerous regions with hot springs in the colony. A typical one is at Asbahalto on the eastern bank of Lake Abbé, called by the Danakils 'the evil smelling water'. Here innumerable thermal springs have deposited walls of travertin which have the appearance of ruins, about 5–10 m. high on the average. This travertin is composed chiefly of calcium carbonate together with a little magnesium carbonate. Superficially it is clear grey whilst in the interior it is yellowish white, having a spongy structure and being somewhat friable. The denticulated walls and small pitons are aligned roughly east-west and probably follow the fault lines. A spring at the foot of Badikoma has a temperature of 100° C., gave a fairly alkaline reaction and when evaporated left a residue of 2·48 gm. per litre. This consisted of silica 0·090 gm., calcium carbonate 0·109 gm., calcium sulphate 0·485 gm., magnesium chloride 0·032 gm., potassium chloride 0·054 gm., sodium chloride 1·648 gm., sodium bromide 0·0035 gm., together with organic and miscellaneous material 0·0585 gm. Other hot springs abound in the plain of Hanleh, in the valley of west Kouri, in Goum, Halol, and in Obock.

FOREST PRODUCTS RESEARCH BOARD

THE report for 1938 of the Forest Products Research Board recently issued (London : H.M. Stationery Office, 1939. 1*s.* 6*d.* net) is dated June 1939. Remembering that the outbreak of war was to come so soon after its completion, there are one or two points which appear to merit particular mention. The chief, perhaps, is the research on composite wood, for which the Board had had under consideration detailed proposals for the provision of equipment.

The interest which this subject has aroused would seem to indicate that all the substitutes which have replaced wood have apparently had little influence upon the great demands still being made on the forest. The Board's report states, with reference to composite wood : "We are impressed with the need for systematic research on the properties of this class of materials in order to build a foundation of technical knowledge such as has been accumulated in the case of 'solid' wood by many years of work at various universities and laboratories in the past." In view of the importance which the processes of manufacture and the interrelations of the materials used have on the properties of the final products, the need for systematic research is evident. New methods of test and investigation may have to be developed to deal with these products, the properties of which differ fundamentally from those of 'solid wood'. Inquiries regarding these products were rapidly increasing, even though the laboratory has disclaimed possession of any real technical knowledge of them. The industries interested cover every field in which natural wood has hitherto been used, and several in which the use of wood has practically been abandoned.

The report of the Director of Forest Products Research is issued with the above. Inquiries in every department of the Laboratory's activities continued to be numerous. As one example of the work undertaken, the experimental work on the production of charcoal in portable steel kilns is proving successful. Charcoal is being increasingly used for various industrial purposes, particularly in the manufacture of Rayon ; and the manufacturer in Great Britain has been very dependent on foreign supplies of it. Hitherto, charcoal which has been made in portable kilns has contained too great a percentage of volatile matter ; the experimental kiln now in use is said to go far in removing this objection. A leading firm of Rayon manufacturers has stated that charcoal produced by certain burnings is equal to the best obtainable from any source.

CORTICAL LOCALIZATION OF INTELLIGENCE

H. M. HILDRETH, at the meeting of the American Association for the Advancement of Science, Columbus, Ohio, December 1939, presented a statistical study of the cortical localization of intelligence.

The problem involves the correlation of an independent physiological variable with a dependent psychological variable. Since in studying human beings it is not possible to destroy predetermined parts of the cortex by operation, an experimental group of individuals whose brains had been damaged by disease or by natural organic changes had to be used. The psychological variable could be measured by using well-established tests of intelligence. The group studied consisted of individuals found to be suffering from cerebral arteriosclerosis, in which disease small areas, apparently occurring at random, are destroyed throughout the brain. From a psychopathic hospital of 4,000, all the patients who after complete examination were found to be suffering from this disease were selected, and from this group were eliminated those who showed signs of any disease, for example, brain tumour, that might conceivably affect intelligence. This gave a selected experimental group of 201 subjects. A control group of 201 normal individuals was also selected, comparable except that they had no signs of arteriosclerosis. Previous records of intelligence and school attainments were available.

It is argued that if all the subjects are now given an intelligence test, since the two groups are matched, then the performance of the normal group might be taken as what the other group would have been if it were not suffering from arteriosclerosis.

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To find out the effect of the disease the two groups were compared in the various Binet tests, the frequency and percentage of each group passing the given tests being tabulated and the percentage of deterioration on each test calculated.

On the hypothesis that the ability to pass a given test is cortically localized, a randomly distributed deterioration would be expected. Such was not the case. The experimental findings supported the hypothesis that intelligence is a function of the whole brain, against the hypothesis of specific localization.

LONDON'S WATER DURING 1938

THE recently issued report of the Metropolitan Water Board* tells of the unceasing supervision exercised over London's water supply during 1938. The total output from the Board's works was 111,438 million gallons, a slight increase over the previous high record of 1937, the average daily supply to consumers being 312·77 million gallons, of which 65 per cent was derived from the Thames.

Some 50,000 samples were analysed during the year, of which about 30,000 were routine bacteriological, and 4,700 routine chemical, examinations, the main purpose of which is to determine that all the processes—storage, filtration, purification, distribution—are working satisfactorily so as to ensure a pure and safe supply to consumers. Based upon the *Bact. coli* test, 99 per cent of all samples were of first-class quality (absence of *Bact. coli* from 100 ml.) —a highly satisfactory record.

Of researches conducted in the Board's Laboratories, much attention has been directed to improving the *Bact. coli* test, and the method for isolating coliform organisms when present, for the purpose of differentiating the type. New procedures were also investigated for improving the method of isolation of *Clostridium Welchii* and the Streptococcus organisms that are sometimes of service for assessment of the potability of a water.

The occurrence of *Bact. paratyphosum* B, a microbe that causes a form of enteric fever, in Epping sewage has been noted since 1931. This specific organism is still present in the sewage, in fact was somewhat more numerous than it was in 1937, and as a precaution chlorination of the effluent has now been established as a permanent measure. Investigations on improved methods for the isolation of this organism are in progress.

Complaints are sometimes received concerning the taste of the water, and no less than 11,360 'taste' tests were carried out during the year by the expert tasters of the Board's staff. Complaints of taste are generally attributable to some defect at the works, the commonest being an overdose of chlorine. Earthy or musty tastes result from decomposition of, or fungoid growths in, filter bed skins during hot weather, and characteristic tastes are produced by decomposing plankton. In one instance, a musty taste occurred in the water drawn from the cold water tap in a kitchen, and was traced to two species of fungi growing in the tap. Organisms belonging to the Actinomyces are capable of producing earthy tastes, and this subject is under investigation.

Certain algæ and diatoms are subject to periods of sudden excessive growth, and are liable to cause trouble in reservoirs and filter beds. Thus, it was reported that a 'brown' growth had arisen in one of the reservoirs, and microscopical examination showed that this was caused by excessive growth of a diatom, *Stephanodiscus Hantzschii*, which was clogging the secondary filter beds. By treatment with alum this trouble was overcome. Investigations are being carried out in the Biological Section with the view of ascertaining the cause of these fluctuations in the number of the algal and other living forms in the water; they may depend upon peculiar variations in the silica, phosphates and other mineral constituents of the water which are known to take place at certain seasons of the year. An account is given of the appearance in a reservoir of *Oscillatoria rubescens*, a blue-green alga, and of the chemical conditions prevailing. In August when this organism became very numerous, *p*H values were higher, temporary hardness was lower, and concentrations of PO_4 were rising rapidly to a very high level compared with March, when the organism was scanty.

Notes are given on the occurrence of certain rare Copepods and other forms of microscopic life, numerous tables are included, and the report is illustrated with several excellent plates.

* Metropolitan Water Board. Thirty-third Annual Report on The Results of the Bacteriological, Chemical and Biological Examinations of London Waters for the Twelve Months ended 31st December, 1938. By Lt.-Col. E. F. W. Mackenzie, Director of Water Examination, Metropolitan Water Board. (P. S. King and Son, Ltd., 14 Great Smith Street, Westminster.) 10*s.* 6*d.*

ECONOMICS OF WAR COSTS

THE problem of paying for the War is discussed in an Oxford Pamphlet on World Affairs (Oxford: Clarendon Press. 3*d.* net) by G. Crowther and a broadsheet issued by Political and Economic Planning (P E P), which have both appeared under that title. The real problems of paying for the War, the broadsheet points out, are economic, political and psychological; for the limits of war effort are not financial but social, psychological and economic. The size of the output of war material depends on the willingness of people to work harder and make their capital resources last longer, and above all, on the way they react to reductions in their standards of life. The methods of financing the War are vitally important, since they determine the distribution of its cost between different groups of people and may

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