

analysis of the results of 1000 experiments revealed no advantage for psychics over normal reagents; there were no deviations in right guesses beyond the limits of chance.

The experiments conducted to test the common belief in sensitiveness to being stared at were equally negative in their results, "regular" and "control" experiments being determined in the same way by the throw of a die. A shorter series, in which a single "starer" was replaced by twelve "starers," gave no more definite result. In this series the twelve "starers" were told in the control experiments to image a black cat on the lecture-table. None of the reagents ever thought of black cats.

In part ii. of the volume previous evidence as to the influence of subliminal impressions on judgment is reviewed and the results of some further experiments are given (guessing letters and digits presented by a tachistoscope, influence of whispering, influence of involuntary signals, *e.g.* eye-movements of an experimenter who had a definite number-form). The experiments showed, generally speaking, evidence of that "fringe of perceptions, most often unconscious, but all ready to enter into consciousness, and, in fact, entering in in certain exceptional cases or in certain predisposed subjects," with which Bergson has insisted that "psychical research could and should concern itself." And it seems more than probable that this sort of perception has played a rôle in the evidence for telepathy, as others have even more definitely asserted.

After a discussion in part iii. of the influence of mental habit upon judgment, and of the confirmation by experiment of results obtained by the theory of probability—matter which we should prefer to have seen given in an introductory chapter—the author passes in part iv. to an account of some interesting experiments in "sound-assimilation," *i.e.* the tendency, when sounds are mal-observed, to record not what is actually observed, but an erroneous inference, *e.g.* significant words in lieu of nonsense. How much the mind contributes is shown by preliminary experiments, in which students who could record correctly a significant communication through the telephone, the dictaphone, or the air (at twenty-five metres' distance) could not hear definitely enough to identify a half of the consonantal sounds in nonsense syllables through the dictaphone, a third of them over the telephone, or a quarter of them through the air. As a consequence a dictation garbled into nonsense by substitutions of consonantal sounds when heard, *e.g.* from the dictaphone is converted by the listener, quite unconsciously, into sense, *e.g.* "amb vuth lekrogootheth vu lambwaj vap yuth sporeb im vu wax" is taken down by the listener as "and thus reproduces the language that is stored in the wax." The ear cannot be trusted correctly to report names or phrases when spoken under conditions which, however apparently satisfactory, permit some degree of indistinctness.

That the authorities of the Leland Stanford Junior University should have had some hesitation in accepting the offered endowment will, we think, be readily understood. That Dr. Coover has justified his appointment will, we hope, be agreed. He has presented the results of a series of very careful investigations, organised by a trained worker, which, even if, as in the case of the "card guessing" experiments, they only justify the scepticism of the sceptics, do something at least to clear the field. It may be noted that Prof. Pearson's "Tables for Statisticians and Biometricians" (Cambridge University Press), of the existence of which Dr. Coover seems to be unaware, would have saved him considerable arithmetical work in comparing observed with theoretical distributions.

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## MEETING OF THE BRITISH MEDICAL ASSOCIATION.

A SPECIAL clinical meeting of the British Medical Association was held in London last week on April 8-11 under the presidency of Sir Clifford Allbutt. The various sections met at the Imperial College of Science, and the attendance of members was large and the meeting a success in every way. The social functions included a reception by the president at the Guildhall, a *conversazione* at the Royal Society of Medicine, and receptions by the Presidents of the Royal Colleges of Physicians and Surgeons.

In the Section of Medicine Lt.-Col. Mott introduced the subject of war-neuroses. He emphasised the preponderating part played by hysteria in the production of these conditions, and had found that patients with such suggestive symptoms as constant vomiting, constant headache, and recurring fits might all be suffering from functional disease. He condemned the use of the term "shell shock," declaring that many of the men returned as suffering from shell shock would have been more appropriately designated "shell shy." At the same time a proportion of the cases suffer from definite injury to the brain—the cerebro-spinal fluid may contain blood and albumin, the drum of the ear be ruptured, and microscopic hæmorrhages be present in the brain. Sir James Purves Stewart also deprecated the use of the term "shell shock." The frequent occurrence of neuroses in the present war had excited comment, but it was to be noted that in previous wars our men had been trained and seasoned soldiers, and he expressed surprise that the number of cases of neuroses occurring in our armies during the last five years had been relatively so few. The general opinion was that the treatment of war-neuroses was unsatisfactory, and Dr. Yealland and Col. Gordon Holmes decried the use of hypnotism and psycho-analysis.

Influenza was the subject of a joint discussion between the Sections of Medicine and Preventive Medicine. Sir Wilmot Herringham dealt with the clinical aspects of the disease. He emphasised its extreme infectivity, and dwelt on its changed character; so much was the latter the case that he was tempted to ask whether the present disease was influenza at all. Capt. Greenwood, who dealt with the epidemiology of the disease, stated, on the other hand, that we must provisionally conclude that there is no clear-cut formal difference between the outbreaks of 1889-90 and 1918-19.

Major Bowman contributed a paper on the filter-passing germ discovered in collaboration with the late Major G. Gibson and Capt. J. Connor (see NATURE, April 3, p. 90). It had been found impossible to cultivate from the blood of patients Pfeiffer's so-called influenza bacillus. The conclusion was that the primary cause of influenza is some micro-organism other than Pfeiffer's bacillus, probably the filter-passing germ described.

In the Section of Surgery Prof. Bayliss discussed his method of injecting a solution of gum-arabic in cases of wound shock. In this condition the blood-vessels become emptied of blood and more permeable, and hence, if they are to be kept filled, a viscid fluid is necessary, for which purpose the gum solution answers admirably.

Dr. Dale discussed the nature and causation of wound shock. The heart and great vessels are abnormally empty of blood in this condition, and the question arises, Where does the blood go? The answer seems to be that the blood collects and stagnates in the smaller vessels of the skin and other peripheral areas. With regard to the causation of this altered distribution of the blood it has been found



that injections of histamine produce a similar condition; it annuls the "tone" of the capillary vessels, so that they dilate and their walls become abnormally permeable. In cases of considerable injury to muscles (one of the most potent causes of shock) a substance like histamine is generated. Histamine acts more powerfully in animals anaesthetised with ether, and surgeons during the war have noted that patients suffering from shock bear ether badly.

In the Section of Preventive Medicine the dysenteries were considered. Col. Leonard Dudgeon discussed the bacillary form. The dysentery bacillus is scarcely ever present in the blood—in only two cases out of 145 cases examined. The methods of bacteriological examination for the dysentery bacilli were described, and the three methods by which the disease may be spread among a healthy population referred to. These are by "carriers," by infection of water, and by flies. As regards flies, typical dysentery bacilli were isolated from wild flies captured and examined.

Amœbic dysentery was dealt with by Dr. Warrington Yorke. The dysentery amœba is apparently indigenous in England, for it had been found that of 450 civilians in the Liverpool Royal Infirmary who had never been abroad, 1.5 per cent. were infected. Among recruits 5.6, and among lunatics 9.7, per cent. were found to be infected.

Lt.-Col. Dale Logan gave a demonstration on mine-gas poisoning. By the autumn of 1915 mine warfare had made huge strides, and, with the great increase in size of the explosive charges used, more extensive mine systems, and the employment of thousands of men underground, the casualties from mine-gas poisoning assumed serious proportions. The poisoning was entirely due to carbon monoxide gas. The insidious nature of the poisoning and the serious nature of the casualties lent support to rumours that the enemy was employing a new gas and forcing it through into our galleries. The intensity of mine warfare might be gauged by the fact that in 1916 we fired 750, and the enemy 700, mines. At Messines some mines were charged with 90,000 lb. of explosive, and the total charges in all the mines totalled more than 1,000,000 lb. A description was given of the organisation to cope with mine-gas poisoning and of rescue apparatus employed.

Other important discussions and demonstrations were on malaria, injuries of blood-vessels, gunshot wounds of the chest, and bone inflammation and bone repair, details of which will be found in the issues of the *British Medical Journal*.

#### AGRICULTURAL RESEARCH IN MADRAS.

THE 1918 Year-book of the Madras Agricultural Department<sup>1</sup> indicates that the officers of the department are giving attention to a variety of problems of great local importance. No results of wide significance for tropical agriculture are recorded, but a good deal of useful work has been done, which is not without its value beyond the Indian province in which it was carried out.

In "A Note on Grading Cotton" Mr. R. C. Wood gives the results of a grading trial made with cotton grown at the Coimbatore Agricultural College. The crude cotton and the two grades produced in the trial were submitted for valuation to five firms—three spinners and two buyers for export. If 1000 lb. of lint had been graded and sold to each of two of the firms on the basis of these valuations, the reduction in profits as the result of grading would have been 32 and 6 rupees respectively, whilst a similar operation with the three remaining firms would only have added 4, 4, and 17 rupees respectively to the price realised for

<sup>1</sup> (Madras: Superintendent, Government Press, 1918.) Price 1s. 9d.

a like quantity of ungraded cotton. More interest is now being taken in Indian cotton in Great Britain, and the utility of this note to the British reader would have been much enhanced if results of examination of the crude and graded cottons had been given in detail as well as the valuations. In explanation of the disappointing results, the author is only able to suggest that possibly the crop was of poor quality owing to the bad season, and that consequently there was less difference between the crude cotton and the first grade than would normally be the case.

Mr. T. V. R. Ayyar writes on the habits and life-history of *Pempheres affinis*, Faust, a stem weevil, which attacks Cambodia cotton. Treatment of the stems with the usual insecticides has not so far protected the crops from serious damage, but the removal and destruction of the plants first attacked in a plantation have sufficed to check the spread of the pest, and the author suggests that the practice adopted in Uganda of clearing and destroying all cotton plants, after the crop is harvested each year, would probably be a useful preventive measure.

Dr. Harrison, Government Agricultural Chemist, contributes "A Report upon the Extent and Character of the Saline Lands of the Madras Presidency" and "Some Notes on Manures in Southern India." The latter refers to the available sources of supply of lime, gypsum, magnesia, and phosphates, and gives information as to the poonacs (oil-cakes) and fish manures obtainable in the Presidency. A paper by Mr. M. R. R. Sivan on "Phosphatic Nodules of Trichinopoly and their Availability as Manure" is also of interest in this connection. It appears that since 1892 much correspondence and several negotiations regarding concessions to work this area for phosphates have taken place, but so far only small quantities have been extracted for local use.

Dr. F. Marsden has a note in the Year-book on "A Hot-water Process for the Extraction of Indigo," but this subject and other matters relating to indigo are more fully dealt with in the same author's "Indigo Manufacture in Madras," which forms No. 74 of the Madras Department of Agriculture Series of Bulletins.<sup>2</sup> Before starting on his tour of inspection of the Madras indigo districts the author had the advantage of visiting with Mr. W. A. Davis, Indigo Research Chemist to the Government of India, some of the chief Indian indigo factories managed by Europeans, and chiefly situated in Behar. In Madras indigo cultivation and manufacture are almost entirely in the hands of natives, though in at least one instance a European firm issues seed to the ryots and provides vats in which the crop can be worked up for dyestuff; a similar arrangement is sometimes adopted on a smaller scale by native merchants. In most cases, however, the ryot sells his crop to a native vat-owner, or hires a vat in which to manufacture the dyestuff. No records are kept as to yields, and Dr. Marsden regards as untrustworthy the rough estimates he was able to get, which are much higher than the yields recorded in Behar. Though indigo as rich in indigotin as that produced in Behar is made in Madras, the quality is, on the whole, poor, and, what is perhaps worse, variable. These defects are due chiefly to carelessness in manufacture, but also in part, at any rate in some areas, to deliberate adulteration with clay and mud.

The work already done by Mr. Davis in India has shown that the cultivation and manufacture of indigo, even in Behar, where the industry is in the control of Europeans and comparatively well organised, presents many problems, which, if solved, might greatly improve its position and prospects. In the case of

<sup>2</sup> (Madras: Superintendent, Government Press, 1918.) Price 6d.