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could not find a specimen of the common housefly in them. They would not find many in Australian museums either. He believed that as a result of the want of research many people on the other side of the world wondered whether they had the same species in Australia. They really should know something about its history. He assumed that they knew the fly laid eggs, but warned people against accepting the statements of text-books without verification. The eggs were 1-20 in. long. The books said that a fly laid four batches of 120 eggs each, whereas investigation had shown the usual figures to be two batches of 60 eggs each. It would be well if they could get people to speak of the filth fly rather than the housefly—the latter was too homely a name. Let them term it rather the typhoid fly, or some such name. He had to take off his hat to the Americans on their fly campaign. He had been talking on some abstruse subject to a man in his office, and his entertainer had interrupted the conversation occasionally to kill a fly with a special device for the purpose. If there were no putrefaction going on there would be no housefly. It could not live on sterile material. The present method of sheepbreeding assisted the fly, which was harboored and fed on the filth in wool, so that the pastoral industry also fostered its greatest enemy. The whole of a fly's growth was during the larval stage, and the starved maggot would produce a stunted insect. The housefly could be distinguished from other species which had their wings spread at a greater angle, and had veins to the end of them. The big housefly was better known in Australia than the little one, but as the latter did not settle low so often as the other it might in reality be as numerous. Dr. Cleland, in private experiments, had found that he caught about 98 per cent. of the big and 2 per cent. of the little ones.

Flies bred in horse manure, and the control of its disposal was an important thing. The housefly favored horse manure, whereas cow manure was the breeding-place of the little black fly. Stale manure was no good to the housefly, therefore most of the infection of cities came from their stables and garbage tips. The housefly would breed in almost any place where there was fermentation, so that as long as bacteriation was in progress there would be procreation of flies. Probably next to horse manure, the housefly preferred the privy. He understood that the pail system of sanitation was in use in some of the outer suburbs of Adelaide, and that in others the disposal of nightsoil was left to the individual householder. That meant that if a man neglected an unpleasant job at the end of any week he was taking a risk of spreading disease throughout the entire neighborhood. The fly did not wait a week to breed: it was on the job all the time, and experiments had shown that its eggs hatched out 100 per cent. The negligent householder was one of the gaps which must be stopped in any campaign against the fly. It was no wonder that children suffered from summer diarrhoea, because the fly had not the slightest objection to wandering from its loathsome meal, where it became covered with bacteria, to a child's lips.

They could not afford to have rubbish dumps near cities unless they were so treated that they would not attract flies. Refuse and garbage tins were visited by flies for food and when the rubbish man left scraps behind they became homes for bacteria, which liquefied the material, so that flies loved it. That made it necessary to cleanse such tins properly every week. Flies laid eggs four days after mating. The minimum time in which the eggs hatched was eight hours. Then there were three instar or larval periods, which occupied from four to eight days, according to conditions. It had been found that a temperature of 104 deg. was too great for the comfort of flies, so that the natural heat of manure during decomposition could be used for their destruction. As the eggs hatched out the larvae should be covered with new deposits, and the generated heat would exterminate them. Another method used in America was to fill trenches round manure heaps with water, and as the hatched larvae crawled away they were drowned. It had been found by experiment that the actual time from a fly's hatching until its first progeny was hatched was 18 days. A fly's life in captivity had been known to extend to nine days.

Screens to houses were useful, but they were not a means of eradication. Most of the measures now adopted could deal with only an infinitesimal number of flies, and the great thing was to get the whole of the people interested in their destruction. Next to making filth inaccessible publicity was the most formidable menace to the fly.

## MR. HAROLD WYLDE'S ORGAN RECITAL.

Another half-hour's free organ recital was conducted by Mr. Harold Wylde, F.R.C.O., at the Elder Conservatorium during the luncheon hour on Thursday. There was a large and appreciative attendance, and every number was heartily applauded. Mr. Wylde's fame as an organist is widely known. The organist made a start with the "Introduction and Passalagila" (Max Reger), which he followed by "The Angelus" (Fargeon), the well-known strains of which sounded particularly sweet as they unfolded themselves in the vast Conservatorium. The "Wedding day" (Stuart Archer) was next, followed by the stirring "Evening song" (Bairstow) and Saint Saens's "Nightingale and the rose." Mailly's intricate and fascinating "March Salonnelle" brought to a close a very pleasant and educational half-hour's music. There will not be any recital next Thursday.

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Another South Australian who has done well abroad is Dr. W. J. E. Phillips, a son of Mr. J. H. Phillips, of Mitchell-street, Hyde Park. Dr. Phillips has just received an important appointment at Kuala Lumpur, Malay Straits, which is described as "the very richest of England's colonies and the only place in the world which has not a debt." Kuala Lumpur, though on the equator, is said to have a

Dr. W. J. E. Phillips.

splendid climate, not much worse than an English summer for most of the year, and in the hills it is so cold that fires have to be lighted at night. Besides its freedom from debt, Kuala Lumpur has another attraction that Australian housewives will envy—one may have "four servants for 80 dollars a month and find themselves; they work about ten times as well as white servants."

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## LAW STUDENTS' SOCIETY.

### A HYPOTHETICAL CASE.

A meeting of the Adelaide University Law Students' Society was held at the University, on the evening of July 3. A large number of members was present, and interesting arguments were submitted. The question set for argument was:—"A, who was accustomed to visit B's hotel in Rundle street, for the purpose of obtaining drinks, went there on April 30, for that purpose. B was the lessee of the hotel, and his lease expired at the end of the year. Under the terms of the lease, C, who was the owner of the hotel in fee, covenanted with B to keep in repair the courtyard of the hotel, which was paved with pavestones. The courtyard was badly lighted, and its floor was out of repair. There was a convenience at the end of the courtyard, which was, as was well known to B and C, used by visitors to the hotel. On the night in question A desired to use it, and was directed there by a person in the employ of B. In crossing the courtyard, he tripped over a flagstone and was badly injured. There was evidence that both B and C knew that the yard was out of repair, and that B, but not C, knew the place was badly lighted. A brings an action for damages against both B and C." Counsel were:—For A, Mr. K. N. Innes; for B, Mr. P. P. McCarthy; for C, Mr. P. A. Kiley. After some excellent matter had been brought forward, the case was discussed by the meeting. The speakers were:—Messrs. McLeay, G. Harry, Tucker, Haywood, L. T. Gunn, M. Bednall, P. A. Ohlstrom, J. J. McCarthy, V. Millhouse, and C. C. Crump. The adjudicator (Mr. C. C. Brebner), in delivering judgment, referred severally to the positions of B and C. As to C, he pointed out that the proprietors of a house are not liable for injuries received there if he leases the place, except through concealed dangers. (Payne v. Rogers, and Cavalier v. Pope).—In this case C, the proprietor, did not know of the concealed danger, and was not liable to A. Judgment was given for the defendant. As to B, the question was whether A was a licensee or an invitee. It seemed that he was in invitee, so B was liable for A's

## MEASURING EMOTIONS.

### Advances in Psychology.

Professor J. McKellar Stuart, of the Adelaide University, delivered, at the Prince of Wales Theatre, University, on Thursday evening a most interesting address, entitled "Some recent developments of psychology." He said that in the minds of most people advance in psychology was connected with the names psycho-analysis, suggestion, and auto-suggestion. The words "complex," "repression," and "unconscious" were on everyone's lips. It was not with the psychological facts which might lie behind those words that he intended to deal that night, but rather with some of the psychological work which was being carried on more quietly, and which did not appeal so strongly to the popular mind. He regarded that work, however, as of extreme importance, not only in the interests of traditional psychological theory, but also as necessary if order were to be introduced into the welter of fact and theory which was beginning to p under the name of the new psychology. It was safe to say that pathological conditions of mind, with which the new psychology was mainly concerned, could be rightly understood only when they were viewed in the light of what was known of the normal functioning of mind. He would call attention to some developments which had recently taken place in the psychology of emotions.

#### Feelings and Impulses.

In James's well-known theory the emotions were held to be identical with certain organic sensations. At a later date MacDougall connected the emotions with the operation of instincts, defining an emotion as the effective, or feeling, aspect of the operation of one of the principal instincts; and, more recently still, Shand had worked out in great detail the theory that the emotions were the root forces of character. They were not merely feelings, but also impulss, and growth in character was conditioned by the organization of those impulsive systems into harmonious and inclusive systems. But, with the development of theory in those directions, the presence, in emotional experience, of organic sensations upon which James laid stress, and probably over-emphasized, was still recognised. In the psychological laboratories of Great Britain a method had been devised for the measurement of those organic sensations, which, it might be said, gave the emotions their affective tone. It had been found that, in all emotional experience, certain functional changes took place in the skin. The precise nature of those changes had not yet been ascertained, but they included a polarization effect in the skin. An electrical apparatus had been devised by means of which those skin changes, which might be taken as an index of the feeling tone of the emotion could be measured.

#### Successful Results.

The subject experimented upon had a pair of electrodes placed, one above and the other below, his head, in contact with it. Connection was established with a galvanometer, which, again, was connected with a lamp which threw a spot of light on a graduated celluloid scale. The intensity of organic change in the skin of the hand, as it increased or diminished, caused a deflection in the spot of light. Words were uttered to the subject, and it was found that those which had a distinct emotional significance brought about a decided galvanometer deflection, the amount of the deflection being the measure of the intensity of the affective tone. That method of measuring the affective tone had been applied to an investigation of its influence on the process of memory. Attempts had been made to measure, quantitatively, the amount of affectivt tone excited in different subjects by certain words, also the ease with which those words were retained in the memory. For instance, the word "kiss," which had a normal emotional association, was found to produce a decided galvanometer deflection. Such words were, it had been found, most easily retained in the memory. Then there was the opposite effect in words that had not a pleasant emotional tone, for they were the most easily forgotten. So that affective tone influenced memory in two directions, and was of two kinds, one of which facilitated, and the other impeded, memory.

## DISEASES IN CATTLE.

"The Worm Nodule Disease in Australian Cattle" was the subject of Professor Harvey Johnston's third and final lecture of the series on "Zoological Problems in Australian Industry" at the Prince of Wales Theatre, Adelaide University.

Professor Mitchell, Vice-Chancellor of the University, was in the chair, and introduced the lecturer, who said that the worst form of nodule disease was caused by a very long parasitic worm (Orchocerca Gibsoni). A similar disease was found in man in West Africa and Central America, in horses in Europe, and in cattle in South-Eastern Asia. The disease existed on almost every cattle station in Queensland, and grew less prevalent towards the South. About 50 per cent of the cattle killed for export in Sydney were infected. A tremendous quantity of brisket meat was rendered unfit for export by it. Seventy-four per cent. of a million briskets examined during a period of 2½ years in Queensland were infected. Compulsory examination and mutilation of all carcases for export from Australia required the removal of the brisket of all exportable cattle and the gashing of the hindquarter, which resulted in a loss of £1 per head. Australia exported half a million carcases per annum. Experimental work carried out in Eastern Australia had been unsuccessful so far in determining the insect which transmitted the disease. Lice, mosquitoes, and march flies were suspected. The lecturer referred to the presence in Australian cattle of two other worms, causing the nodule disease, and both were very common, one causing nodules in the neck region and the other the stomach. He concluded with an appeal for some sort of assistance to carry out further research work, as the need for investigation was pressing.