

might be considered, therefore, that brown-top, though such an abundant grass and such a prolific pollinator, is not a very potent factor from the hay-fever aspect. In about 5 per cent. of the cases treated for hay-fever at the Medical School this last season the patients give a history of some slight hay-fever during January; probably the addition of brown-top extract to their treatment sets would have prevented their symptoms.

Regarding the toxicity of the various New Zealand grasses, the following figures, derived from the combined number and intensity of 1,941 dermal tests (534 North Island, 1,407 South Island), give an approximate relative estimate.

				North Island. Per Cent.	South Island. Per Cent.
Italian rye	..	..	..	.. 57	56
Cocksfoot	..	..	..	.. 51	58
Sweet vernal	..	..	..	.. 49	53
Timothy	..	..	..	.. 49	36
Perennial rye	..	..	..	.. 47	41
Crested dogstail	..	..	..	.. 41	37
Yorkshire fog	..	..	..	.. 37	39
<i>Poa pratensis</i>	..	..	..	.. 30	33
<i>Poa annua</i>	..	..	..	.. 19	19
Plantago	..	..	..	.. 17	9

It would therefore appear that cocksfoot is a more potent factor in the production of hay-fever in the South Island than it is in the North Island, whilst timothy is of far greater importance in the North Island than it is in the South Island, similarly perennial rye. Plantago is but a small factor in New Zealand. It is unfortunate that brown-top could not be included in the above list, but no supplies of the pollen were available when the tests were being made. During the present investigations, however, sufficient quantities of pollen were collected for future experiment.

COLLECTION OF GRASS-POLLEN.

A number of experiments were made during the collection as to the weight of pollen produced by any known number of average grass-heads, and the result was rather astounding.

Weight of pollen produced by 100 average grass-heads: Cocksfoot, 2.68 grammes; perennial rye, 1.50 grammes; italian rye, 2.10 grammes; Yorkshire fog, 0.9 grammes; brown-top, 0.09 grammes.

These are the most abundant pollinators in the district. On the average, in well-planted areas 100 heads can be taken as equivalent to half a square foot of ground. Ten acres of cocksfoot would therefore, for example, yield about 1 ton of pollen.

SPECIAL INVESTIGATIONS.

PART I.—REPORT ON AN OUTBREAK OF TYPHOID FEVER IN A FARMHOUSE.

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History of the Outbreak.—On the 17th March, 1928, T. W., aged seventeen, a farm hand employed by Mr. A., became ill, and, making no improvement, was moved to hospital on the 26th March as a possible case of typhoid fever. The diagnosis was established by a positive Widal on the 29th March (1/750 dilution), and the case was notified on the same day.

The medical attendant then called attention to two previous cases of undiagnosed illness in the same household.

Mrs. A., the wife of the farmer, became ill on the 14th August, 1927, her symptoms being those of septicæmia, which was thought to be a delayed result of her confinement eight weeks earlier. On the 22nd August she was moved to hospital, and died on the following day.

B. J., aged eighteen, another employee on the farm, became ill on the 9th December, 1927, and was seen by a doctor, who diagnosed influenza. He came down to his parents' home in Dunedin, but received no medical attention until the 29th December, when a doctor was called in and found him emaciated and very ill, with obvious signs of an abdominal abscess. A diagnosis of appendicitis, with perforation, was made, and the abdomen was opened and drained the same afternoon, the patient dying about fifteen hours after the operation. The surgeon now considers, in view of the other cases, that he was in all probability suffering from typhoid fever, with a perforated ulcer. No ulcers were seen at the time of operation, as the patient was too ill for him to do more than open and drain the abscess.

On receipt of the notification of the case of T. W. an extensive investigation was made of the farm household. It then comprised the following persons: Mr. A.; five boys—G. A. (10), J. A. (9), W. A. (8), F. A. (6), F. A. (3); B., housekeeper; C., domestic servant; D., ploughman; K., farm hand (16). D. arrived on the 29th March after T. W. had been taken to hospital.

The usual inquiry was made regarding water-supply, milk, vegetables, shell-fish, &c., but no useful information was obtained. No history of typhoid or other lengthy illness was given by any one. Specimens of faeces and urine were obtained from A. and K.; and blood, faeces, and urine from B. and C., the housekeeper and domestic servant. All these specimens were negative as regards the presence