

2. "On the Natural History of Three Species of *Microlepidoptera*," by G. V. Hudson. (*Transactions*, p. 189.)

3. "On the Mole-cricket in New Zealand (*Gryllotalpa vulgaris*)," by T. W. Kirk, F.R.M.S. (*Transactions*, p. 233.)

Mr. Hudson remarked that the mole-cricket had been the subject of many interesting memoirs on the anatomy of insects, and its arrival would therefore be interesting to entomologists. He did not think it was likely to do as much harm as the author thought.

Mr. Brandon said it was a pity this insect should have been introduced, and he thought information should be circulated as to the best means of getting rid of it.

The President remarked that from an entomological point of view the occurrence here of these mole-crickets was interesting. As for their hurtful propensities, opinions seemed to be divided; but it should always be remembered that comparisons between New Zealand and England were not always correct, on account of the difference of climate. He, however, took the opportunity of saying that experience in this country seemed to point to the fact that imported animals, probably both useful and noxious, unless fostered in some special way, after greatly increasing for some time, appeared to decrease. As instances of this, in connection with useful animals, might be taken the pheasants and partridges, which in some parts of the colony—for example, North Canterbury and Amuri—after growing into such numbers that they might be seen in every paddock, were now becoming rare, if not very rare. Doubtless poachers, cats, fires, rats, &c., had something to do with this; but he thought they did not account for all of it. Nor could it be said that these birds were not adapted to the country, else why had they increased so largely? In like manner, he was informed, one of our worst insect-enemies, *Icerya purchasi*, is supposed to be doing much less damage than formerly, if it is not, indeed, dying out altogether. It may be that some law obtains whereby new importations, good or bad, useful or noxious, flourish with excessive fertility for a while, and then are apt to die out. Perhaps this would be the case even with the rabbit; perhaps also these mole-crickets would come under the same law.

Mr. Park did not think there was any great danger to be apprehended from the rapid spread of the mole-cricket, which, according to Mr. Kirk's own statement, had only increased at the rate of 100 per cent. in seven years. He thought there was nothing in this to alarm farmers or gardeners.

Mr. Kirk, in reply, said that the farmers and market-gardeners had a much more lively interest in the mole-cricket than entomologists had, as they would be direct losers should the insect increase rapidly, while the scientists' interest was purely intellectual. He had not stated that the insect had only increased at the rate of 100 per cent.; he merely said that only three specimens had fallen into his hands; but he had not looked for them, and probably, now attention had been directed to the subject, we should find that many other persons had observed the creature without knowing what it was.

4. "On the Supposed Occurrence of Two Sets of Greensand-beds at Waihao Forks, South Canterbury," by Alexander McKay, F.G.S.

ABSTRACT.

This paper dealt chiefly with certain mistakes and misapprehensions contained in previous papers on the geology of the Waihao Valley, and explained some matters complained of in Professor Hutton's last paper on this subject. In vol. xix. of "*Transactions of the New Zealand In-*

stitute" Professor Hutton sought to show that the Waihao Forks greensands do not underlie the limestones of the Oamaru system at that place; and Mr. McKay, in reply, endeavoured to prove that they do. In vol. xx., "Trans. N.Z. Inst.," Professor Hutton admits there is a greensand under the limestone, but contends that it is not the greensand equivalent to that at the Waihao Forks, which, as appears, he still regards as younger than the Waihao limestone. Mr. McKay also admits the occurrence of two distinct deposits or bands of greensand, but he maintains that both have a position inferior to the Waihao limestone.

Mr. Park said there was really no geology in this paper; it was merely an explanation of some personal differences between the author and Professor Hutton. He deplored the fact that personalities should find their way into scientific discussions, and thought it would be wise to exclude such papers from publication.

5. Mr. James Wallace gave an interesting account of the recent discovery of manganese upon property near the Wellington-Manawatu Railway Company's line. He stated that a quantity had been sent home for a professional opinion as to its real value. He stated that upon analysis in the Colonial Laboratory the ores yielded, in the case of the oxide, 75 per cent., and of the carbonate, 84 per cent. of manganese.

Mr. McKay considered this an important discovery: it occurred in very large blocks, and would no doubt prove of commercial value.

Mr. Hughes, who had also visited the locality and seen the deposit, spoke highly of it. He had sent samples to England for expert opinion.

FOURTH MEETING: *22nd August, 1888.*

W. M. MASKELL, F.R.M.S., President, in the chair.

New Member.—A. B. Keyworth.

Papers.—I. "On the Oil-bearing Strata of the North Island," by J. Park, F.G.S.

ABSTRACT.

Mr. Park said that the oil-strata of this island belonged to two formations—one of pleistocene and the other of cretaceous age. The former included the petroleum springs at Taranaki, and the latter the oil-rocks at the east coast of Wellington and Poverty Bay. The geological conditions and the surface-evidences of oil at these places were discussed at considerable length. On the east coast of Wellington the strongest gas-spring was that at Blairlogie, the flow of gas being about equal to the discharge of an inch pipe. The oil-strata, consisting of slaty shales and crumbling marly clays, were everywhere much shattered and contorted. The gas-spring at Langdale was unlike any other in the district. The gas was sulphuretted hydrogen, and the water accompanying the gas belonged to the sulphurous or hepatic class of mineral waters, which possess valuable medicinal properties. The gas-springs at Ika, Aohanga, and Akitio were feeble compared with that at Blairlogie. Passing on to Poverty Bay, Mr. Park said that the first report on the district was made by Sir James Hector in 1873. Gas-springs were numerous throughout the whole district, and at places oil oozed from the rocks and collected on the surface of lagoons and pools. The author quoted from the reports of Sir James Hector and Mr. McKay to show the character of the oil-strata, which consist of grey contorted sandstones and dark-grey shaly marls. The strata are everywhere much disturbed and broken. At Taranaki the oil-strata consist of volcanic agglomerates and tufaceous sandstones,