

ly double the quantity of potash necessary for the wheat to the turnips alone. These facts will appear from the following table :—

Salts in an imperial acre of—		Total Salts.	Potash.
	Wheat,	358.3 lb.	50. lb.
The crops of a rotation after a single application of manure, viz. :—	Turnips,	389.7 ...	92.4 ...
	Barley,	310.0 ...	40.0 ...
	Hay,	200.0 ...	20.0 ..
	Oats,	207.0 ...	20.0 ...
	Total,	1106.7...	172.4...

3. On the Fossil Fishes of the Old Red Sandstone of Orkney. By Dr Traill.

The author stated, that besides the original localities at Skail, Ichthyolites have been found at Breckness, Quoyloo, and Kirkwall, in Pomona, in South Ronaldshay, and in Papa-Westray. The species already recognised from these localities are, 1. *Osteolepis macrolepidotus*. 2. *Osteolepis microlepidotus*. 3. *Cheirolepis Traillii*. 4. *Cheiracanthus minor*. 5. *Diplocanthus crassissimus*. 6. *Dipterus macrolepidotus*. 7. *Platygnattus paucidens*. 8. *Cocosteus latus*. 9. *Plerichthys Milleri*. 10. *Diplopterus Agassiz*.

All but the last have been named by M. Agassiz, who determined the generic characters from specimens in the author's possession. The characters of the *Diplopterus Agassiz* are the following. The genus *Diplopterus* has two dorsal fins, similar and opposite to two anal fins; vertebræ continued into the upper lobe of a nearly even tail; and a wide mouth armed with strong conical teeth. It belongs to the Sauroid family of Ganoid fishes. The species *D. Agassiz* may be distinguished by a rounded snout; a large head almost equal to a fourth of its whole length; a single row of trigonal, hatchet-shaped scales on the ridge of its back, and oblique rows of rhomboidal scales passing from these to the abdomen; smooth scales, and the dorsal and anal fins rounded at their extremities, and composed of slender rays.

4. Mr Milne made a verbal communication respecting Instruments for registering Shocks of Earthquakes.

The advantages of registering earthquake shocks were first briefly noticed. 1. Such registers would shew whether, as supposed, the shocks were more frequent and violent during certain states of weather, and particular months of the year. If this were ascertained, some light would be thrown on the cause of the shocks, in so far at least