It is a very well known fact that we can only get crosses or hybrids between closely allied species, and when produced they are sterile. The wide difference between the feline and the marsupial races forbids us to expect a cross or hybrid. The domestic cat crosses readily with various wild species, and it would appear that the character of the domestic breeds has at least in some cases been thus affected.

The author described the varieties and peculiarities of cats as mentioned by several writers, sufficient in his opinion to account for the appearance of this specimen, without supposing that it is a cross between the cat and opossum. He believed it to be only a cat.

2. "On Recent Additions to the Museum," by A. C. Purdie.

The author described several species of Mammalia which have been recently presented to the Museum. These included the lynx and lemming from Norway, musk-deer from Java, and some well known Australian marsupials.

3. "On the Work of the Past Year in Astronomy and Celestial Physics," by J. S. Webb. (See Appendix, p. l.)

4. M. Villaine, inventor of a special design for a submarine boat, intended to be employed in gold-mining under water, was present by invitation, and on his behalf Mr. Nuttall explained the design.

It was represented that an iron boat on this principle, 26ft. long by 7ft. in diameter, is capable of containing three men at work for six hours at the bottom, without communicating at the surface. Provision is made for propelling the boat under water. The interior of the boat is divided into compartments, namely, a ballast chamber, a place for working in, airtight compartments containing air compressed to six atmospheres, and a space into which water is admitted to sink the boat, the water being afterwards used to wash the metallic ore, there being a sluice 30ft. long in the boat. There is also an open space for allowing communication between the two ends of the vessel, and there are pipes and cocks for regulating the air, and chemical means are taken for renovating it. Provision is made for those inside to move the boat ahead or astern on the bottom, for maintaining the equilibrium of the boat, and for fixing it upon an angle of 45° or 50° if required. The mode of working it is as follows:—The boat being brought to the scene of operations, those intending to descend get into her through a man-hole. When a sufficient quantity of air has been accumulated in the reservoirs, the man-hole and air-funnels are hermetically closed, and sufficient water is then admitted to sink the boat. Once on the bottom, the compressed air is allowed to rush into the working chamber, upon which the bottom of the boat, an iron door of eight superficial feet, is opened, and work is commenced. The vessel is again brought to the surface by discharging the water taken in.

A short conversation ensued on the merits of the invention and the feasibility of working such a boat in the rapid current of the Clutha.

FIFTH MEETING. *29th October*, 1872.

The Rev. Dr. Stuart, Vice-President, in the chair.

His Honour Mr. Justice Chapman was chosen to vote in the election of the Board of Governors for the ensuing year, in accordance with clause 7 of the New Zealand Institute Act.

1. Mr. R. Gillies presented to the Society the remains of two kiwis, which had been captured on the harbour side, near Burke's brewery, by a dog of Mr. Joseph Drake's. One of the birds when found was partly devoured, but was still fresh and warm. Mr. Gillies stated that, so far as he was aware, this was the first authentic instance on record of the kiwi being found on the eastern coast of the South Island; and that, seeing the birds were running wild, the inference was that in the vast bush extending from the harbour to beyond Blueskin there must, in all likelihood, be other specimens; and, seeing that they were becoming almost extinct, it might be worth while to consider whether in the interests of science the Society should not take some steps to let the fact of the existence of these birds in that bush be as widely known as possible to the settlers, with a view to their preservation as much as possible.

In the discussion which followed, it was stated that on two or three previous occasions the capture of kiwis in the bush to the north of Dunedin had been reported, and that some specimens, one of which was now in the Museum, had been secured. It was thought that Mr. Gillies' suggestions should be acted upon.

2. "Notes on Plants collected near Invercargill," by J. S. Webb. (See *Transactions*, p. 360.)

The author gave the result of an investigation of open tussocky ground between the Puni creek and the Main East road for the purpose of comparison with that of similar ground elsewhere. He mentioned the curious circumstance that none of the imported plants, including white clover, had been able to make headway against the native vegetation, notwithstanding that cattle were constantly wandering over the ground. It was also stated that the collection included five specimens which had not before been reported as existing in the province.
