overtook them. It may, therefore, I think, be assumed that the lake has never in recent times been so extensive as it is now, but that formerly it was much more so.

It will naturally be asked, What are the causes of its recent rapid growth, and what is likely to be the end of it? Without doubt the chief cause lies in the killing of the trees, which, until lately, covered almost uninterruptedly the whole basin except the lowest portion. The water is thus drained rapidly into the lake, and the surface exposed to evaporation reduced to a minimum. The trees have been destroyed chiefly by the squatter, in order to let in the sun and improve the grass. But another and unexplained cause has been at work during recent years destroying the bush, and the trees have died away mysteriously at the rate of scores, if not hundreds, of acres annually. Grub at the roots or within the bark, the injury done by cattle and sheep, opossums destroying persistently the young shoots, and various other pests, have been set down as the cause, but no explanation has as yet been accepted as satisfactory. It would seem rather as if the trees were suffering from some sickness such as animals are subject to, and many square miles of bush may be cleared away before the disease has spent itself.

Whatever may be the cause, the trees are rapidly disappearing within the drainage area of the lake, and the result will be that with improved drainage and less absorption the lake *must* increase in extent during the next few years, provided the rainfall does not seriously diminish during the same period. Another cause which has probably been at work enlarging the lake during the last twenty-four years, is an increased rainfall, but the argument on this point is rather drawn from the rapid growth of the lake than from any accurate observation. It has certainly happened once or twice during dry seasons that the lake has fallen a foot or two, but it has always recovered and advanced during the following year, so that its growth may be considered to have been continuous since the year 1852. After the winter of 1874, the lake rose from four to five feet, and during the severe drought of the following summer sank to the extent of from one to two feet, but with the returning rains it recovered its former level. If, up to the present time, the first and wet half of a cycle has been operating, and twenty-five years of deficient rainfall were now to commence, it would still, I think, be unreasonable to expect that the lake would contract very much—say to one-half or one-quarter its present size. The water that falls at the most distant spot in the basin is carried within a few hours into the lake—in the same manner as in other parts of the country it is carried into the rivers; and the same cause which tends to make the floods of the Hunter and other rivers more violent every year, will prevent Lake George from ever again becoming an insignificant pool. It may be noticed that cloudy summers—not necessarily rainy ones—would have a considerable effect in diminishing evaporation and thereby preventing shrinkage. A prevalence of westerly or northerly winds would have an opposite effect.

Near one of the squatter's houses, long ago submerged, was a well-stocked fish-pond. This the advancing waters soon appropriated, and its occupants finding their way into the lake, have increased to such an extent that the lake itself is now well stocked. These fish were chiefly the freshwater cod of Australian streams, and some of them have thriven so well that it is by no means rare to meet with specimens weighing from thirty to forty pounds each. Black swans, large flocks of three or four different kinds of ducks, with the red-legged ibis and other birds frequent the shores and afford good sport.

The general appearance of the lake shore is somewhat desolate on account of the enormous number of partially submerged trees that stand, some of them a mile or more, out in the water, and give the lake the appearance of an American river during a flood. The Eastern shore, however, is very beautiful for Australian scenery, the hills dotted with clumps of dark casuarina rising in beautiful grassy slopes from the water's edge.

At a few miles distance from Lake George to the eastward is Lake Bathurst, a much smaller sheet of water that appears to be under very much the same influences as the larger lake, the encroachment of the water being as well marked, although not so extensive.

It would be interesting to know all the influences at work in the increase of the Great Salt Lake, Utah, which is said to be growing at the rate of ten inches in vertical height yearly. As the whole country in the neighbourhood of this lake is destitute of trees, a periodic increase of rainfall is most probably the chief cause, in which case the lake's maximum may be expected to be reached at any time.

The cultivation of land previously bare might naturally be expected to cause a greater retention of moisture, whilst at the same time the hardening of the surface by the treading of cattle and sheep would cause the water to run off more easily; but the area of cultivated or pastured land within the drainage basin compared with that left in its primitive condition, is unknown, and it would be impossible to differentiate their effects.

It will be a subject of considerable interest to watch the conduct of these lakes during the next twenty years. R. ABBAY

The Cruise of the *Argo*

MANY useful suggestions were forwarded to me by the readers of NATURE before the yacht left Liverpool, in return for which I send my best thanks and a list of the places we have visited in the course of our most delightful and, as I trust, not unsuccessful voyage: Jan. 24, Madeira; Feb. 7, Antigua; Feb. 12, Barbuda; Feb. 13, St. Kitts; Feb. 14, Guadeloupe; Feb. 13, Dominica; Feb. 17, Martinique; Feb. 18, St. Vincent; Feb. 20, Grenada; Feb. 22, Trinidad; March 9, La Guayra; March 10, Caracas; March 17, Valentia; March 18, Puerto Caballo; March 21, Tucacas; March 27, Santa Marta; March 29, Savanilla; March 31, Cartagena; April 2, Kingston, Jamaica; April 13, Havana (Museum most creditable). We leave tomorrow for Vera Cruz and the city of Mexico, with the Bahamas, Philadelphia, New York, and Niagara in prospect. We have had a clean bill of health and favourable weather throughout. One of the chief objects proposed by Mr. Cholmondeley in undertaking the voyage was to observe the habits of tropical birds in the west, and to increase his fine collection in the aviaries at Condoover. Amongst the very numerous specimens of birds now on board are some that are extremely fine, and such as have rarely been brought to England in a living state.

In marine collecting most has been done in sponges, tunicates, and echinoderms. These, which have been gathered amply and in the rough, will no doubt on examination yield some good microscopic forms, and perhaps a few polyzoa, of which there has been to me, a most deplorable scarcity. In botanising, very fair success has been met with in Mosses, Lichens, and Jungermannia. A few most interesting fungi were collected in the deep forest in Trinidad. Entomology has not been neglected, but the extreme dryness of the season has been unfavourable. Of the eminent men, true students of nature, it has been my good fortune to meet, I must not now attempt to mention even the names. My great obligations to them will I trust find a suitable opportunity for acknowledgment. HENRY H. HIGGINS

Havana, April 10

Recent Discoveries in New Guinea; and Papua or Papooa?

THE ascent for ninety miles of a fine river in the south-east portion of New Guinea, in September last, by the mission vessel *Ellengowan*, has doubtless, before now, been made known in England (NATURE, vol. xiii. p. 76).

I expect, during the present year, to leave Samoa on my return to England, and I have some hope that I may take New Guinea *en route* to Australia, and visit the mission stations of the London Missionary Society on the south-east coast. If this hope is realised, I shall use every available means to determine what this large quadruped is, which has been tracked in three different parts of the island, if no one else makes the discovery before then.¹

In concluding this letter, I wish to enter a protest against Dr. A. B. Meyer's orthography of the Malay names of New Guinea and the frizzly-haired portion of its inhabitants. He says (NATURE, vol. ix. p. 77, note): "I write Papooas, and not Papuas, because the Malays pronounce the word Papooa and not Papua." Surely Dr. Meyer must be aware that the vowel *u* in Malay is pronounced like *oo* in English. As early as 1812 Marsden, in his Malay Grammar (p. 12), gives as examples of the sound of *u* the "English *oo* in loom and tool." It appears to me not only pedantic and unnecessary, but also very objectionable, to make a change at the present time. Perhaps I feel more keenly on this point than most persons, owing to the fact that, with the assistance of a large staff of co-workers in various parts of the Pacific, I have in progress a comparative grammar

¹ It has been recently announced in the *Sydney Herald* that Sigaor D'Albertis has identified the large bird with the red-necked hornbill, and the droppings as those of the cassowary.—Ed.