

## SUBMARINE DISTURBANCE

THE following is an extract from the Meteorological log kept by Capt. R. J. Balderston on board the ship *Belfast* :—

“On December 22, 1884, at about ten minutes to 3 a.m., local ship's time, or 21d. 19h. 6m. Greenwich mean time, the ship *Belfast*, of Liverpool, was shaken by an earthquake which lasted from about 75 to 90 seconds. The vessel at the time was in latitude  $34^{\circ} 34'$  north and longitude  $19^{\circ} 19'$  west, the island of Madeira bearing true S.E., distant 145 miles.

“The shaking of the ship was accompanied by a loud rumbling noise, which, as heard from the cabin, resembled the sound which would be made by the rolling of large, empty, iron tanks about the decks, but which, as heard from the upper deck and in the open air, was as that of not very distant thunder, and it appeared to fill the whole of the air.

“I did not hear the commencement of the thunderous sound, and cannot say on what compass-bearing of the visible sky it commenced, but it travelled rapidly through the air and towards the S.W.

“The vibration of the vessel and the noise were greatest during the first 50 or 60 seconds; the former then died gradually away and ended in the very faintest tremor, while the latter, as it travelled south-westward through the atmosphere, died out with a low roar as it appeared to sink beyond the horizon.

“The helmsman found the steering-wheel much shaken as he held it, and in the cabins and cook-house, tin ware, crockery ware, and other light articles were rattled about.

“This little earthquake occurred three days prior to the commencement of the earthquake which caused so much loss of life and property in Spain.

“Meteorological Office, October 9”

## THE BOTANICAL GARDENS IN JAVA

DURING the last few years so many useful and important improvements have been made in the botanical gardens at Buitenzorg and Tsi-Bodas that it might not be amiss if the attention of the readers of NATURE were again drawn to these valuable seats of systematic and philosophical research.

On entering the gardens at Buitenzorg the stranger is at once struck with the wealth and luxuriance of the vegetation he sees, the great height of the trees whose trunks and branches are in many cases covered with heavy creepers, the dense copses of the different species of bamboo, the eccentric-looking screw-pines and the handsome palm trees; but the scientific observer is also struck with the care that has been taken to arrange all these many varieties of tropical plant life in, as far as possible, their systematic order, and that each specimen has its scientific, and in many cases its Malay name also, clearly and distinctly printed on a little board by its side.

It is not difficult for any one to find his way about the garden, and in a very short time he can discover the particular family or group of plants which he may desire to study. Many families have probably more representatives in these gardens than in any in the world. The Sapataceæ, for instance, so rarely seen in Europe, are here represented by a great variety of genera and species, and the Palmaceæ, the Rubiaceæ, the Burseraceæ, the Orchidaceæ, and other families have now a large number of rare and interesting representatives.

The herbarium which is attached to the garden contains a large collection of dried plants and seeds collected together from the many expeditions into the little or unknown parts of the archipelago and from other sources. Attached to the herbarium there is a comfortable and convenient little library which contains most of the important botanical books and journals.

The laboratory, which, thanks to the energy of Dr. Treub, the director, is now completed, is a large, lofty and, for these climes, particularly cool room, and is well fitted out with reagents and apparatus for carrying on botanical research. The generous invitation which Dr. Treub has issued to naturalists and to which the attention of the readers of NATURE has already been directed has attracted several scientific men of different nationalities, and some excellent research has already been made in this laboratory.

When I arrived in Buitenzorg Dr. Treub was at Tsi-Bodas; so, after spending a few days in study in the gardens, I made the journey across the mountains to pay him a visit. The road from Buitenzorg to Tsi-Bodas crosses the Poenchuk Pass and is full of interest and beauty. On the way the traveller passes quite close to the Talaga Werner, the crater of an extinct volcano which is now filled with water, and forms a most beautiful little lake hidden in the dense foliage of the mountain slopes. The path from the road to the lake is through a dense wood of fine forest trees, and amongst the undergrowth is found many fine shrubs and plants which are not found in the low-lying country beneath.

The gardens at Tsi-Bodas are situated on the slopes of the Gedeh Mountains, at an altitude of 5000 feet, and here I found Dr. Treub at work in the comfortable little house which is attached to the gardens.

From this spot a very wide range of vegetation may be studied, from the rich and varied vegetation of the plains to the interesting vegetation of the Gedeh and Pan-geranso peaks, at an elevation of 10,000 feet. In the gardens themselves a very fine collection of Coniferæ from America, China, Australia, and other parts of the world has been got together, and spaces have been cleared for the growth of the various species of Eucalyptus, Cinchona, and other plants. Year by year the surrounding forest is being encroached upon by these gardens to make room for new importations. I was extremely sorry that I could not prolong my stay at Tsi Bodas, but I had to return to Batavia to catch the Molucca boat. I saw, however, enough to convince me of the great importance of these gardens for the advancement of our botanical knowledge and the great opportunities they afford for research into all branches of the science.

I need hardly say that the climate in this region is extremely pleasant and invigorating, and the neighbouring village of Sindanlaya is much resorted to by Europeans and others whose health has suffered on the coasts or low-lying districts of the Archipelago. At Buitenzorg the climate is by no means unpleasant or unhealthy, but as it lies a few thousand feet lower than Tsi-Bodas, it is naturally a good deal warmer; but I am assured that several Europeans have worked there for several years without feeling their health the least bit affected.

It is hardly necessary to add that every one who has come over to Java to work in these gardens has been amply repaid for the time spent in the long journey over the sea, for the insight which can be gained here into what tropical botany really is is one which can be gained nowhere else in the world so well, and leaves an impression which is not likely to be forgotten in a lifetime.

Batavia, July

SYDNEY J. HICKSON

## ON CERTAIN NEW TERMS OR TERMS USED IN A NEW OR UNUSUAL SENSE IN ELEMENTARY UNIVERSAL GEOMETRY.

*Point, Line, Plane, Space, Extension*

A LINE may as usual be understood to mean a right line unless the contrary is stated.

Representable extension will comprise the concepts corresponding to the first four terms above written. So