

on the Pampa de los Huesos, when an expedition is made to the summit.

The most interesting of all the meteorological stations in Peru—indeed, the most interesting meteorological station in the world, because it is the *highest in the world*—is that on the summit of the Misti, at an altitude of 19,200 feet above the level of the sea. This was established by Professor S. I. Bailey in October, 1893. The shape of the Misti is that of an almost perfect, although more or less truncated cone, and the conditions of exposure of the instruments are as nearly perfect as it is possible to obtain on a mountain. The instruments now in use on the summit are dry- and wet-bulb and maximum and minimum thermometers, rain-gauge, barograph, thermograph and hygrograph. There is also a meteorograph, constructed by Fergusson, of Blue Hill Observatory, especially for this station, and designed to record temperature, pressure, humidity, and wind direction and velocity, and to run three months without re-winding. This meteorograph has not yet given as complete records as it was originally hoped would be obtained from it. For some months after its establishment the Misti station, together with the Huesos and Mont Blanc stations, was visited by one of the assistants in the Observatory once in ten days, but lately not more than one visit a month has been possible. The trip is by no means an easy one, and the altitude of the Misti is so great that almost every one going there suffers from *soroche*, or mountain sickness. The writer has twice visited the 'highest meteorological station in the world' during his present stay in Peru, and both times had some experience in the unpleasant symptoms of *soroche*. Although it has thus far been impossible, in view of the great altitude and the distance of the station, to secure complete and continuous records from it, still the broken records which have been obtained are so interesting that this, to a considerable extent, makes up for their fragmental character.

The seventh station is at some distance farther north, at Cuzco (lat. 13° 30' 55" S.; long. 74° 24' 30" W., approximately), lying in a valley between the eastern and western ranges of the Cordillera, at an elevation of

11,378 feet above sea-level. It is rather an interesting fact that here, in the ancient capital of the Incas, a North American university should be maintaining a meteorological station. Cuzco is at present distant from Arequipa five days' journey; two days being spent in the train, one in a vehicle and two on horseback. The instruments are wet- and dry-bulb and maximum and minimum thermometers, rain-gauge, wind-vane, Pickering sunshine recorder, barograph and thermograph.

The last station, the farthest from Mejia, is Echarati, on the eastern slopes of the eastern ranges of the Cordillera, and in the fertile valley of the Urubamba, about 130 miles north of Cuzco. Echarati is at present just at the outer limits of what may be called civilized Peru, for a short distance beyond it comes a wild territory, inhabited altogether by Indians, through which white men seldom pass. When first established, in 1894, the shelter was at Santa Ana, about 30 miles nearer Cuzco, but last year the instruments were removed farther north, to their present location. The equipment is the same as at Cuzco. The altitude is 3,300 feet.

A glance at a good map of Peru will show at once what a magnificent series of stations Harvard has thus established in this hitherto meteorologically unknown country. Reaching from sea-level across the desert pampa of Islay to Arequipa, they continue on up past 13,400 and 15,700 to 19,200 feet, and then down, towards the north, to 11,378 feet and finally to 3,300 feet. The line of stations thus cuts diagonally across the desert belt of Peru and extends through a region of increasing rainfall down to the well-watered valley of Urubamba, which belongs to the Amazon water-shed. That the large number of observations already collected in Peru, and now being tabulated for publication, will furnish data of the greatest interest and value is a foregone conclusion.

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#### THE CRUSTACEAN GENUS SCYLLARIDES.

WHILE looking into the anatomy and nomenclature of the Astacoidean crustaceans, I in-

identally learned that the only species of *Scyllarus* known to Fabricius\* in 1775, when he first made known that genus, was the *S. arctus*—the *Cancer arctus* of Linnæus. That, being the only species, is necessarily the type, and, therefore, the name *Scyllarus* must be retained for it. The early carcinologists (Latreille, White) correctly recognized the type. Nevertheless, the *S. arctus* was taken as the type of a new genus—*Arctus*—and the name *Scyllarus* was reserved for the "*Sc. sculptus, latus, squamosus, equinoxialis, Haanii, Sieboldi,*" by Dana in 1852. He was doubtless influenced in this respect by the consideration that the *arctus* was the only species of its genus known to him, while most belonged to the other one. All succeeding carcinologists have followed him, and, indeed, the family is one of the very few for which a classification proposed nearly half a century ago has been retained intact to the present time, new species only having been added meanwhile. However, the necessity for a change will be recognized by almost every zoologist, and the sooner it is made the better it will be. I, therefore, propose to restore *Scyllarus* to the typical species, and to give the new name *Scyllarides* (*Scyllarus* with the Greek patronymic termination *-ides*) to the bereft genus. *Scyllarides* may be typified by the *S. æquinoctialis* (*Scyllarus æquinoctialis* of Nicolaus Tönder Lund).†

According to Dr. Ortmann (Zool. Jahrb., Syst., 268, X., 1897), there are five well defined species of *Scyllarides*—*squamosus, latus, haanii, æquinoctialis* and *elizabethi*.

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#### LAMARCK AND 'A PERFECTING TENDENCY.'

PROFESSOR JOHN GARDINER has done well to recall the fact that the chief factor in evolution,

\* *Systema Entomologiæ*, p. 413, 1775.

† The proper authority for the species (generally known as '*S. æquinoxialis* Fabr.')

has been given by Miss Rathbun in the *Annals of the Institute of Jamaica* (I., 43). The excellent memoir of Lund (Om Slægten *Scyllarus* < Skrivter af Naturh. Selskabet, II., p. 17-22, 1793) has been ignored by almost all others. It was referred to by White, but the references to Lund were mostly given after those to Fabricius.

according to Lamarck, is not the so-called 'Lamarckian factor,' but 'a perfecting tendency.' Lamarck's *Histoire Naturelle* is in perfect accord with his *Philosophie Zoologique*, as interpreted by Professor Gardiner. Lamarck thus describes his two factors: (1) '*Composition progressive, 'progression, 'plan de la nature, 'pouvoir qui tend sans cesse à compliquer l'organisation, à accroître le nombre et le perfectionnement des facultés, 'cause première et prédominante.*' (2) "*La cause accidentelle n'ayant pu altérer la progression en question, que dans des particularités de détail, et jamais dans la généralité des organisations.*"

The editors of the second edition of the *Histoire Naturelle* add a foot-note (Vol. I., p. 114) which concisely states Lamarck's position: "Il y a donc, d'après Lamarck, deux causes toujours agissantes sur les animaux, l'une qui tend à les perfectionner d'une manière uniforme dans leur organisation, l'autre modifiant irrégulièrement ces perfectionnements, parcequ'elle agit selon les circonstances locales, fortuites, de température, de milieu, de nourriture, etc., dans lesquels les animaux vivent nécessairement."

Lamarck repudiates the '*échelle graduée*' of Bonnet, and claims there is no identity between it and his '*composition progressive*.'

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#### SCIENTIFIC LITERATURE.

*Recent and Coming Eclipses.* By SIR NORMAN LOCKYER, K.C.B., F.R.S. Macmillan & Co. 1897.

This volume, consisting mainly of articles which have appeared from time to time in current periodicals, is issued with a view to supplying the general reader with information regarding the latest phases of the chief eclipse problems.

The treatment divides itself into two parts. The earlier chapters of the work contain elementary explanations of the theory of eclipses, and that of the instruments used in their observation. The spectroscope in its various forms is discussed in detail, and much stress is laid on the efficiency of the slitless spectroscope or 'prismatic camera.' The application of this