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XL.—On the degree of Cold which the principal Mammalia of hot countries are capable of enduring

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observations upon *Mygale* in the Zoological Transactions." Now this passage is, I grieve to say, a tissue of mistakes, which perhaps might have been avoided by a reference to my paper in the Zoological Transactions, and by a more accurate reading of my letter. In the first place, the bird was a *Zosterops*, not *Gasterops*; and in the second place, the only words in my printed paper on *Mygale* which I ever meant to retract, when I hastily mentioned what I considered to be a curious fact to Mr. Shuckard, were the following: "I will even go so far as to add my utter disbelief in the existence of any bird-catching spider." How Mr. Shuckard should imagine that I meant to retract all my observations on *Mygale* I know not; but I beg here to declare that I retract none of them, except the above-mentioned disbelief. I deny that the tale of *Mygale* catching birds is either "substantiated or confirmed" by another spider of totally different habits having been observed to catch them. *Mygale* is a subterranean spider, and makes no net. In short, my conviction is, that Madame Merian has told a willful falsehood respecting *Mygale*, or rather has painted a falsehood; and that her followers have too hastily placed confidence in her idle tales. My conviction is, that no *Mygale* can catch birds in its net; for, as I have said in the paper printed in the Zoological Transactions, it makes no geometrical net. Nay, further, I have proved that the genus *Nephila*, which lives in a geometrical net, does not catch birds either here or in the West Indies; and moreover, I have ascertained that birds are not the proper food of this New Holland *Epeira*, but that the observation of my father and myself is an exception to the general rule of its insectivorous habits; an exception indeed so rare, that as far as I can learn, no other person here has ever yet witnessed the fact in question but ourselves. I acquit Mr. Shuckard of course of anything like an intentional misrepresentation; but I must express my regret, that when he referred to my private letter he did not use the words of it, although I dare say they were hastily written.

I am, dear Sir, &c.,

Elizabeth Bay, near Sidney,
8th July, 1811.

W. S. MACLEAY.

XL.—On the degree of Cold which the principal Mammalia of hot countries are capable of enduring. By the Rev. ROBERT EVEREST, in a Note to J. E. Gray, Esq., F.R.S., &c.

DEAR SIR,

HAVING always taken an interest in the much-vexed geological question of "climate," I looked forward to a winter

residence in the Himalaya as a means of enabling me to determine the extremes of cold which the principal Mammalia of a hot country were capable of enduring.

I dwelt in a lonely house in the middle of the oak-forests which overlooked the broad valley of the Dehra Dhoon, about 4000 feet perpendicular below. It had been the head-quarters of the Surveyor General, and its height above the sea had been most unexceptionably determined trigonometrically and barometrically at about 6800 feet. The N. lat. was $30^{\circ} 26'$. The mean temperature in the month of December observed at sunrise was 37.7 , and at half-past two for the same period, 45 . For the month of January for the same times it was 35.9 and 42.5 , making the general mean for the two months 40.3 Fahr.

Snow generally falls there late in November or early in December; but the season I was there we had none till Christmas, after which we had several falls, and on the northern slopes the ground remained covered with it until I left, early in February.

Flocks of the large Monkey of the plains (the Hunaman of the Hindoos, and the *Semnopithecus Entellus* of naturalists) inhabited the oak-woods around, feeding upon the acorns, of which they appeared very fond. In the severest weather they seemed quite as much at their ease as at other times, and made no effort to descend to the warm valley of the Dhoon beneath, though such a change would have cost them but little exertion. I left this spot for the interior of the Himalaya early in February, and, late in that month, near the sources of the Touse, met with a large flock of these animals. It was on the northern slope of the valley. The cold was very severe, and full three foot of snow upon the ground. They were in a forest of Deodar and Morinda, busily feeding on the seeds of the fir-cones. The height above the sea could not have been less than from 8000 to 9000 feet.

The common Leopard* of the plains (*Felis Pardus antiquorum*) was also numerous in the oak-forests during December and January. I caught one in a trap, and saw the tracks of them constantly on the snow following those of the Ghooral. While near the sources of the Touse in February and March, I also observed their tracks at great heights, indeed above the limit of forest, *i. e.* near 12,000 feet above the sea, following those of the Wild Goat or Tuare (*Capra Jemlica*).

The Tiger is very scarce in the Himalaya, even in summer-

* Mr. Everest has very kindly presented the specimens mentioned to the British Museum collection.—J. E. GRAY.

time, being too large and unwieldy an animal to follow the Caprine races over the precipitous ground. I however met with their tracks on the snow near my house; and while shooting in the oak-forest, from 5000 to 6000 feet above the sea, had one of my people carried away by one. They can go wherever the Stag (*Cervus Hippelaphus*) can obtain a footing, and remain on a mountain north of Massoori (Nagtiba, near 10,000 feet in height) all the year round. They live principally on stags and also bears.

The Hyæna is very rare in the Himalaya, and I only once saw one. It was early in March, about 6000 feet above the sea.

The common Wolf is numerous in the plains, but I have never seen or even heard of them in the Himalaya.

The Jackal is rare there, and I have never met with them but in the low and warm valleys.

The Fox of the Himalaya is much larger than the diminutive fox of the plains, and greatly resembles the English one.

The Wild Elephant is not found beyond the base of the hills, but the slopes there are so steep that it would be impossible for so heavy an animal to obtain a footing. However, at a village called Burkote, about twenty miles from the source of the Jumna, young elephants are reared for the Rajah of Tisee. The spot is within the limit of Deodar Forest and also that of winter snow. The animals remain in an open shed during the year.

Before concluding, I will not omit calling your attention to the high temperature of Dehra in the Dhoon, which, in N. lat. $30^{\circ} 19'$, and 2380 feet above the sea, has a mean annual temperature of 70° to 71° Fahr., being the same as that of the summit of the hill on the island of Penang in N. lat. $5^{\circ} 15'$, and at nearly the same height above the sea, viz. 2280 feet.

This may be attributed to three causes:—1st, the situation of Dehra at the foot of the southern slope of the Himalaya, screened from the north by enormous mountains; next, its position, several hundred miles from the sea, and its contiguity towards the south to very wide sandy plains which are intensely heated by the sun; and lastly, the circumstance that almost all the rain there falls during the summer-time. The south-west monsoon blows nearly from the equator, and brings with it aqueous vapour at a high temperature, which is deposited and soaks into the ground very deep, communicating its temperature to the soil.

Be the causes what they may, the circumstance of the tem-

328 Meyen's *Report for 1839 on Physiological Botany.*

perature of the year being the same in the sixth degree of N. lat. and the thirty-first is remarkable, as showing the great extent to which climate may be modified by locality.

ROBERT EVEREST.

XLI.—*Report of the Results of Researches in Physiological Botany made in the year 1839.* By F. J. MEYEN, M.D., Professor of Botany in the University of Berlin*.

Observations on the presence of certain assimilated and secreted substances in Plants, continued from p. 257.

M. HÜNEFELD† has with great diligence attempted to prove the presence of amyllum in the flowers of plants; he found it in the flowers of *Calendula officinalis*, in which plant it has been already proved to exist by other chemists. M. Hünefeld then mentions thirty other plants in whose flowers he discovered amyllum with more or less distinctness; whether however, he adds, the amyllum of flowers always becomes blue by iodine, he must still leave undetermined; in the flowers of *Calendula* it becomes blue, but in the others the colour was more of a dark green. It appeared probable to M. Hünefeld, that it was the yellow colour of the flowers only which caused this green tint; but he has left this important point undetermined, although it were easy to settle by a good microscope. He contradicts himself in his statements, for globules in the flowers which are not coloured blue by iodine cannot be considered as amyllum. Amyllum, even that from mosses, is always coloured blue; and even when it becomes brown by iodine, it is modified amyllum. M. Hünefeld mentions *Tropæolum majus* as one of the few plants which contain amyllum in the stem; this however is a tolerably common phenomenon. Decoctions of the flowers of *Calendula*, *Tropæolum*, *Helianthus*, &c. exhibited no trace of amyllum, which is easily explained by the microscopical examination of the parts thus treated; the amyllum swells within the cells, but does not pass through their walls.

M. P. Savi‡ of Pisa has published some observations on the physical phenomenon seen in the leaves of *Schinus Molle*

* Translated by Henry Croft, Esq., teacher of Chemistry in London.

† Erdmann's and Marchand's *Journal für praktische Chemie*, 1839, 1^{re} band, p. 87—90.

‡ *Memorie Valdarnesi per cura del Dott. Corinaldi*. Pisa, 1839, p. 42—48.