

highlands and lowlands which in one part of their course have cut deep vertical gorges not unlike cañons, while at another they have scooped out wide open valleys with gently sloping sides, so to come to any conclusion based on the assumption that the eroding action of streams is uniform is very unsafe.

Mr. Browne seems also to take a very peculiar view of the extent of the ancient glaciers, as he speaks of the channel of the little stream he describes as "sufficient to guide the glacier in its flow," seeing that the great glacier which flowed over Scotland from north-west to south-east took no notice of such a channel in its course as the Firth of Tay, but swept over it and the county of Fife beyond, scarcely showing a trace of being deflected at all. Surely there could not be such an enormous difference in the dimensions of the glaciers on the opposite coast as this would indicate. Whatever was the case on Loch Maree, the glaciers that moved down Loch Assynt and Loch Broom were no pignies.

JAS. DURHAM

Newport, Fife, September 27

### The Bis-cobra, the Goh-sámp, and the Scorpion

SNAKES of all kinds are held in great horror by the natives of India, and they slay indiscriminately and ruthlessly all they come across, but this horror pales before the terror inspired even by the names of the bis-cobra and goh-sámp,—terror so great, that, if met with, the harmless animals are given the widest berth possible, and their destruction is never attempted. Though actual animals, they are virtually mythical, that is as regards the deadly properties assigned to them, and we easily recognise in them the originals of the flame-breathing dragon and deadly basilisk. The gaze of the bis-cobra is awful even from a distance and its bite is instant death; and if the goh-sámp breathes upon, or at you, you fall dead at once.

With such awful reputations attached to them, I lost no time, in my early career, in attempting to make the acquaintance of these formidable reptiles, and, after much labour, succeeded.

No one would help me in procuring a bis-cobra, and my servants repeatedly warned me against the risk and madness of the attempt. At one time I had engaged the services of a savage woodsman in collecting birds' eggs, and to him I, one day, applied for a bis-cobra, but he at first refused, and it was only the promise of large bakhsheesh that ultimately induced him to promise his assistance. After several days he appeared carrying an earthen pot at the end of a long bamboo, and meeting me, whispered mysteriously in my ear "Sahib! bis-cobra!" Glad of the news, I summoned my servants, who, when they heard the reason of the summons, reluctantly formed a distant semi-circle. The pásee cautiously put down the pot and also retired to a distance. In no way dismayed, I approached the pot, removed the dirty rag around its mouth and looked in. As expected, I found a beautiful brown and yellow lizard, freely protruding in its fear a forked anguine tongue, and anxious to escape. On taking it up it seized my hand with its delicate teeth, and in this position I held it up to the horror-stricken servants who exclaimed in fear "Sahib! sahib! chör do, phenk do (Master! master! let (it) go, throw (it) away!)." Then, on my declining to do either, they, like the barbarians of old, waited anxiously to see whether I "should have swollen or fallen down dead suddenly," and, seeing no harm, they quietly dispersed.

My adventure with the goh-sámp was unsought and equally satisfactory.

Walking in my garden one day, I met the gardener running away with affrighted look from a pear tree, and asked the reason; he could only gasp out "Goh-sámp, sahib, goh-sámp!" and implore my return. Delighted at the opportunity, I pressed on, and soon saw the awful reptile trying to dodge my gaze; a large scaly, uncanny looking tree lizard about fourteen inches long. In the distance the mali (gardener) implored me to beware his "phoonk" (blast of breath), but I courted it, by trying to dislodge him, which I succeeded in doing by shaking the bough, and then he threw himself on the ground and scuttled up another tree. Both lizards are absolutely harmless, and I believe a poisonous lizard is quite unknown.

The scorpion is not dreaded like the snake, but, like it, is inevitably killed. Its habits and pursuits well deserve study; my observance of the former has enabled me to clear away (to my own satisfaction) many obscurities with regard to its poison weapon and the mode of using it. And let me declare at once that the popular idea regarding scorpionic suicide is a delusion based on impossibility. Owing to the position and nature of its

weapon, the animal cannot strike itself. It does not protrude a sting as bees, *et hoc genus omne*, do, and the line of strike is downwards and backwards, with at times a lateral but yet downward motion. As literally described in Holy Writ, *it strikes but does not sting*; and its motion in so doing may be imitated by seizing the tip of the index or middle finger with the thumb, and suddenly liberating the former.

The poison is acid and albuminous; the latter I presume, as on placing a living specimen in spirit, the animal in its death throes ejected it, and it immediately coagulated in threads.

The pain and constitutional disturbance attendant on scorpion strike are often very severe, and children have occasionally succumbed; but adults only complain of the pain, which generally passes off in half-an-hour. On two occasions I have passed through a host of migrating crickets, once by day and once by night; on the first occasion my carriage wheels crunched for a mile through a cricket migration; and on the second my palkee bearers' feet slid about amid crushed crickets; on this occasion one of the bearers yelled out that a scorpion (out on a cricket spree) had struck his foot, and hobbled up to the palkee. Having the means at hand I applied a paste of ipecacuanha and laudanum, with almost immediate relief, and the bearer trudged on with the rest.

Peshawar

H. F. HUTCHINSON

### Certain Animal Poisons

I HAVE had unpleasant experiences of the poisonous properties of the Portuguese man-of-war, the great hornet, and the centipede.

While bathing at the Cape as a boy I managed to get the long lovely blue tentacle of the first round my wrist, and well recollect the attendant long-enduring agony and irritation, while the blue mark remained long on my wrist. Twenty-five years after, while soaking in a P. and O. steamer's marble bath in Madras roads, I suddenly received what seemed an agonizing stab below my left knee, and jumped out of the bath with the pain. The cause was at once apparent, a bit of the fatal blue filament had been pumped into the bath, and left the familiar mark on my knee, and I bore it for a long time.

On one occasion I was showing some friends over the famous "Arrah House" and opened a small window to let in more air and light; in doing so, I unwittingly disturbed the adhesions of a great hornet's nest, and one of the infuriated inmates at once stung me on the left temple; the pain was intense and the swelling immediate; aware of the constitutional disturbance which would follow, I made for home (about 500 yards distant), and reached the threshold of my drawing room, and there I was brought to an instant standstill, unable to move hand or foot, and trembling like an aspen leaf. I was laid on a sofa, and asked for a glass of port wine, which soon revived me.

This dreadful hornet, nearly two inches long, deep brown with a broad yellow band across the abdomen, builds large globular paper nests, and is not rare in the Himalayas, where it may often be seen in the pines. The hillmen dread it extremely, and with good reason, for a swarm, or even a few individuals will attack you fiercely and follow you for miles.

Griffs, who have fired at a nest, against the remonstrances of their hillmen, have paid dearly for their rashness. When attacked, the hillmen squat down and drawing their blankets closely around them, await the subsidence of the storm, rarely escaping two or three stings. I have known one of these hornets kill a child by its sting; and many horses have been destroyed by an infuriated swarm. These are the dreadful animals which assisted in the expulsion of the Amorites of old.

The common bee, which in India often builds in trees and ruins, frequently attacks men and horses, irritated by the smoke of the fires (for cooking) lighted under the trees or in the buildings, and a general *saave qui peut* is the only mode of escape.

Many ludicrous adventures occur from this cause out here, and I will describe a recent one. The officers of a British regiment stationed at Umballa were dressing for Sunday morning Church parade, when the alarm was given in the compound of three who lived together, that the bees were abroad. As escape from the parade was impossible, and the infuriated bees had to be faced, the three griffs made a syce (horse attendant) envelope himself in a blanket, while each wrapped a sheet around himself, and then formed a line, the front officer holding on to the syce's bamboo, and the other two to one another's swords, and in this guise they groped their way out of the compound surrounded by

the angry bees; cautiously emerging from their sheets on the high road, the first person they encountered was their Colonel and his family driving to Church. The finale may be imagined!

I have always been fond of sleeping out during the hot weather, *sub Jove frigido*, or rather *torrido*, and used to have a sooráée (a porous earthen water bottle) capped by a tumbler, on the ground by my side.

One night I awoke to drink and, half awake, lifting the sooráée on to my naked knee proceeded to fill the tumbler. In a moment I felt as if a red hot poker had been freely applied to my knee, and, thinking that I had been stung by a snake, rushed into the house for a light, and a dose of *sal volatile*. I was now wide awake, and returned with the light to examine into matters, and then I found a large centipede coiled round the bottom of the sooráée, whither it had come for coolness or a drink, or both. It was six inches long. Judging from the size of the burn (for I bore the large red mark for many days), I inferred that I had not been bitten, but that the whole animal was acrid.

Peshawar

H. F. HUTCHINSON

### Spider's Web, New Caledonia

CONSUL LAYARD's account of the spiders' webs of the Polynesian Arachnids (NATURE, vol. xx. p. 456) reminds one of the colonial enthusiasm of certain fair ladies in Mauritius seventy years ago, previous to the capture of that island by General Abercrombie.

Throughout the Mascarene group are numerous species of *Araneidea*, among which *Epeira inaurata* and *E. mauricia* are pre-eminent, their bright yellow webs being conspicuously stretched between the pointed leaves of the agaves and prickly-pears. Taking advantage of these "grandes toiles verticales à fils jaunes, soyeux et susceptibles d'être travaillés; sous le gouverneur-général Decaen, les dames créoles de l'île de France tissèrent avec les fils de ces belles aranéides une paire de gants dont elles firent hommage à l'impératrice." S. P. OLIVER

October 5

### Change of Colour in Frogs

CAN any of your readers tell me if it is a fact that frogs change their colour before a change takes place in the weather?

A few days ago I was told at a village in Worcestershire, during heavy rain, that it would be fine to-morrow because a frog had been seen turning yellow. The fine weather came. I was informed that frogs become dark-coloured before wet weather sets in.

W. J. CHAMBERLAYNE

Junior United Service Club, September 30

["The changes which the colour of the frog undergoes both in intensity and hue from the *variation of temperature, the presence and absence of light* . . . although certainly much less striking and considerable, are *scarcely less varied* than those exhibited by the chameleon."—Bell, "British Reptiles."]

### SUBJECT-INDEXES TO TRANSACTIONS OF LEARNED SOCIETIES<sup>1</sup>

WE all remember the excellent paper read at the Oxford Conference by Mr. J. B. Bailey, sub-librarian at the Radcliffe Library, upon the advantage of a subject-index to scientific periodicals. Mr. Bailey spoke with just praise of the splendid alphabetical catalogue issued by the Royal Society, but observed that from the nature of the case this is "nearly useless in making a bibliography of any given subject, unless one is familiar with the names of all the authors who have written thereon." This is manifestly the case. As an illustration both of the value and the deficiencies of the Royal Society's index, I may mention that while on the one hand it has enabled me to discover that my father, chiefly celebrated as a philologist, has written a paper on the curious and perplexing subject of the formation of ice at the bottoms of rivers, the existence of which was wholly unknown to his family, it does not, on the other

<sup>1</sup> By Richard Garnett, Superintendent of the Reading Room, British Museum. Read at the March monthly meeting of the Library Association of the United Kingdom. Contributed by the Author.

hand, assist me to ascertain, without a most tedious search, what other writers may have investigated the subject, or consequently how far his observations are in accordance with theirs. Multiply my little embarrassment by several hundred thousand, and you will have some idea of the amount of ignorance which the classified index suggested by Mr. Bailey would enlighten. We may well believe that the only objection he has heard alleged is the magnitude of the undertaking, and must sympathise with his conviction that, granting this, it still ought not to be put aside merely because it is difficult. I hope to point out, however, that so far as concerns the scientific papers, to which alone Mr. Bailey's proposal relates, the difficulty has been over-estimated, that the literary compilation need encounter no serious obstacle, and that the foundation might be laid in a short time by a single competent workman, such as Mr. Bailey himself. Of an index to literary papers I shall speak subsequently; and, there, I must acknowledge, the difficulties are much more formidable. But as regards scientific papers, it appears to me that the only considerable impediment is the financial. When the others are overcome, then, and not till then, we shall be in a favourable position for overcoming this also. The reason why the formation of a classified index to scientific papers is comparatively easy, is that the groundwork has been already provided by the alphabetical index of the Royal Society. We have the titles of all scientific papers from 1800 to 1865 before us, and shall soon have them to 1873. Though it might be interesting, it is not essential to go further back. We have now to consider how best to distribute this alphabetical series into a number of subject-indexes. To take the first step we merely require a little money (the first condition of success in most undertakings), and some leisure on the part of a gentleman competent to distinguish the grand primary divisions of scientific research from each other, and avoid the errors which cataloguers have been known to commit in classing the star-fish with constellations, and confusing Plato the philosopher with Plato a volcano in the moon. I need only say that very many of our body would bring far more than this necessary minimum of scientific knowledge to the task. I may instance Mr. Bailey himself. The money would be required to procure two copies of the alphabetical index (which, however, the Royal Society would very likely present), and to pay an assistant for cutting these two copies up into strips, each strip containing a single entry of a scientific paper, and pasting the same upon card-board. It would be necessary to have two copies of the alphabetical catalogue, as this is printed on both sides of the paper; and as the name of the writer is not repeated at the head of each of his contributions, and would therefore have to be written on the card, close supervision would be required, or else a very intelligent workman. When this was done, the entire catalogue would exist upon cards, in a movable form instead of an immovable. The work of the arranger or arrangers would now begin. All that he or they would have to do would be to write somewhere upon the card, say in the left hand upper corner, the name of the broad scientific division, such as astronomy, meteorology, geology, to which the printed title pasted upon the card appertained, and to put each into a box appropriated to its special subject, preserving the alphabetical order of each division. We should then have the classed index already in the rough, at a very small relative expenditure of time, money, and labour. For the purposes of science, however, a more minute subdivision would be necessary. Here the functions of our Council would come into play, and it would have a great opportunity of demonstrating its usefulness as an organising body by inducing, whether by negotiation with individuals or with scientific corporations like the Royal Society, competent men of science to undertake the task of classifying the papers relating to