Indian Snakes

I HAVE just had the opportunity of examining the cobra mentioned in my letter dated 12th inst., together with a very handsome one belonging to another snake charmer. This latter cobra also devoured a frog in the space of a minute or two after it was placed in the basket, the frog croaking audibly about half a minute after it was swallowed.

I append the description of these cobras for the benefit of those interested in such matters.

Naja tripudians.—Specimen A.—Colour above very pale olive with pair of conspicuous white, black-edged spectacles. A pair of black H-shaped marks on 12th, 13th, and 14th series (transverse) corresponding to spectacles. Posterior edges of hood above, dark olive. Blackish band 17th to 21st ventral and corresponding scales—rest of belly mottled with dark spots.

Lower anterior temporal in contact with three (3) other temporals.

Ventrals 182, sub-caudals 51, scales 23 series.

Specimen B.—Colour above, olive brown, with numerous pale olive irregular transverse bands and blotches. Belly mottled and barred with blackish. A pair of snow-white, black-edged spectacles. Interstitial skin of anterior central portion of hood pure white, scales pale olive; that of posterior portion and margins black, scales dark olive; colour of hood extending across back in strong contrast to the paler hue of the body.

A pair of white dark-edged spectacles beneath the hood, corresponding to pair above, but the white portion very much wider. Central spots below oval, black, situated on 10th, 11th, and 12th series of scales.

Scales of head pale olive, anterior margins of vertical, supraciliary and occipital shields dark olive, forming a double band across the head. Posterior margins of occipitals dark olive. A vertical infra-orbital streak of dark olive.

Lower anterior temporal in contact with three (3) other temporals. The following ventrals blackish, forming distinct bands 17th to 31st, 24th to 30th, 35th to 38th, 48th to 51st, 61st to 64th all inclusive. Beyond these there are dark bands but the ventrals composing them are not as a rule black throughout.

Ventrals 185, sub-caudals 53, scales 23

Sept. 17, 1873 E. H. PRINGLE

The use of Terms in Cryptogamic Botany

IT seems to me that there is a very perplexing want of uniformity in the names employed by different authors to indicate the reproductive organs of cryptogamic plants.

To a private student this want of formality in the nomenclature of homologous organs is very bewildering; especially when he happens to meet with a term which no botanical work or glossary within his reach explains.

In reading the Rev. M. J. Berkeley's "Introduction to Cryptogamic Botany," I have come across a term which I cannot find used in the same sense in any botanical work I have consulted.

In the division of algæ called Rhodospermeæ, he says, in speaking of the fruit, "indefinite spores in distinct nuclei."

In *Callithamnion corymbosum* he calls the expanded wall of the mother cell from whose endochrome the walls have been produced by cell division, the nucleus.

In some other genera, he calls the cluster of naked spore-threads the nucleus. In other genera the spore threads arising from a placenta, together with the conceptacles containing them are called a nucleus.

In *Wrangelliaceæ* it is stated that the nucleus is composed of pyriform spores arising from the endochromes of the terminal cells of the spore-threads.

I had first settled in my mind that nucleus was used by Mr. Berkeley as a general name in this disvision of algæ, for an indefinite cluster of spores.

On re-consideration it seemed to me that the term nucleus in the division *Gongylospermeæ* was not applied to the clusters of spores, but to the expanded wall of the mother-cell, or walls of the mother-cells, whose contents had been transformed into spores; and in the great division *Desmiospermeæ* to the spore-threads from whose cells the spores are produced. Having at length given up this supposition as untenable, it then occurred to me that "nucleus" did not mean the expanded walls of the mother-cells alone, or the clusters of spores alone, or the spore-threads alone; but was a general term applied to the fruit consisting in some cases of spores and spore-threads, in others spores, spore-threads and conceptacles, and in others of the expanded walls of the mother-cells and their contained spores.

When, however, I again read that in *Wrangelliaceæ* the nucleus is composed of radiating pyriform spores, I gave up all attempts at a solution satisfactory to myself.

Can any of your readers inform me what, in this division of algæ, is meant by the term "nucleus," and why it is only used in this division? Did the term not occur in a book written by so high an authority in Cryptogamic Botany it might be passed over as a piece of affectation on the part of the writer. D. R.

*POLARISATION OF LIGHT**

III.

WE now proceed to the consideration of the colours produced by plates of crystal when submitted to the action of polarised light. A crystal very commonly used for this purpose is selenite or sulphate of lime, which is readily split and ground into flat plates of almost any required thickness. If such a plate be placed between the polariser and analyser when crossed, it will be found that there are two positions at right angles to each other, in which, if the selenite be placed, the field will remain dark as before. The selenite is, in fact, a doubly refracting crystal, and the positions in question are those in which the plane of vibration of the ordinary ray coincides with that of the polariser (or analyser), and that of the extraordinary ray with that of the analyser (or polariser). In every other position of the selenite, and notably when it has turned through 45° from either of the positions before mentioned, or neutral positions as they may be called, light passes through, and the field becomes bright. If the thickness of the selenite be considerable, the field when bright will be colourless; but if it be inconsiderable, say not more than three millimetres, the field will be brilliantly coloured with tints depending upon the thickness of the plate.

Supposing however that, the selenite remaining fixed, the analyser be turned round, we shall find that in the first place the colour gradually fades as before; until when the analyser has been turned through 45°, all trace of colour is lost. After this, colour again begins to appear; not however the original tint, but its complementary; and in fact, there is no more sure way of producing colours complementary to one another than that here used. A general explanation of this change of colour is already furnished by our former experiments. Doubly refracting crystals generally, in the same way as Iceland spar, divide every ray, and consequently every beam of light which passes through them, into two, so that of every object seen through them, or projected through it on to a screen, two images are produced. These two, being parts of one and the same beam of light, would, if recombined, reproduce the original beam; and the same is, of course, the case with the two images. This may be rendered visible by using the double-image prism as an analyser, and throwing both images on the screen together. As the prism is turned round, it will be seen that, just as when no selenite was interposed, the images are alternately distinguished; but that when both are visible, their colours are complementary. And if the distance of the prism be so adjusted that the images overlap, it will be found that, when both are visible, the part where they overlap is always white, whatever be the thickness of the plate used.

An instructive experiment may be made by interposing an opaque object in the path of the beam of light, so that its shadow may fall upon the part of the field common to the two images. The shadow will of course intercept the light forming each of the images, and will consequently appear double. Suppose that the two images are

* Continued from p. 169.