## 32.—NEW PLANT RECORDS FOR BOMBAY PRESIDENCY.

In our rambles about Bombay and neighbouring districts it has been our fortune to find a number of plants of which there is no mention in Cooke's Flora of the Bombay Presidency; occasionally we have met with plants which are considered by Cooke as 'rare' or 'very rare'; due to such a want of ample material, Cooke's descriptions are, not seldom, very imperfect.

It is our intention in this and subsequent notes to supplement such descriptions. In every case our new description is based on fresh and ample material; and it is our sincere hope that botanists all over the Presidency will come forward with their new findings so that in the course of time the phanerogamic flora of Bombay may be fully and adequately recorded.

We offer today three plants, the occurrence of which in our Presidency has so far passed unnoticed.

1. **Acanthospermum hispidum** DC., Prodr. V, 522.

The genus *Acanthospermum* was described for the first time by Schrank in Pl. Rar. Hort. Monac. vol. 2 (1819), t. 53; the species *A. hispidum* was described by DC. in his Prodromus. The following is the translation of the generic and specific characters as given by De Candolle [l.c.]:

'Capitulum many flowered, heterogamous; ray florets uniseriate, female, ligulate-cucullate; disc florets male, tubular, 5-toothed. Involucre uniseriate, of 5 elliptic, concave bracts. Receptacle flat; outer paleae covering the ovaries, armed externally with herbaceous, hooked prickles; inner paleae concave, toothed at the apex, protecting the male flowers. Anthers apendiculate, not caudate. Branches of the style recurved, glabrous at the apex. Achenes tightly covered with prickly paleae, compressed, obtuse, sub-attenuated at the base. Pappus 0.

American herbs, branched, low or diffuse, trichotomous (?). Leaves opposite, punctate beneath. Floral heads solitary, terminal or in the forks of the dichotomous branches, comparatively small. Corolla yellow.

*Sect. II. Ceratochlaena.* Outer paleae (that is, those covering the achenes) trigonous, not sulcate, produced into long horns.

*A. hispidum.* Stem erect, hispid; leaves ovate, base cuneate, sessile, membranous, sub-hispid, sub-dentate from the middle upwards. Collected by Salzman in Brazil on sandy sea-shores near Bahia. Hairs long, white, spreading, articulated. Fruit exactly like that of the previous species, a little more echinate.' DC., Prodr. v, 521-2.

Among the various Indian floras in our library, we have only found a reference to this plant in Gamble's Flora of the Presidency of Madras, Part IV (1921), where on p. 704 Gamble writes:

'*Acanthospermum hispidum*, DC., a South American introduced plant, has been found in S. Canara and Salem Districts, and is said to be spreading and likely to become common. The plant is hairy, the leaves obovate, spathulate; the heads in the forks of dichotomous branches, the achenes spinous.'

The first time that this plant was brought to our notice was from a letter of the Right Revd. The Bishop of Bombay, R. D. Acland, M.A., of December 2nd, 1944:

'These are the inadequate remains of the strange Composite which I mentioned to you the other day. Is there enough to identify it by? Shall I send to Poona for more, if now available?

It appears to be a foreign weed, not in Cooke's Flora, that has established itself in great quantities on uncultivated land round about the Parbati temple.

I call it a Composite because in the centre of the curiously rayed flower heads there is a cluster of about half a dozen typical composite tubular florets, extremely small, while at the ends of the now hard and prickly rays there were typical, tiny, ray florets (ligulate), one to each radiation.'

Shortly after receiving this note, we found the plant at Mumbra, about a quarter of a mile from the G.I.P. local station, along the main road towards Bombay (No. 5527 in Blatter Herbarium, St. Xavier's College, Bombay). The plant at first sight might be mistaken for a young specimen of *Xanthium strumarium* Linn.; in fact the plant was growing in a clump of *Xanthiums*; but the floral heads and especially the fruits of *Acanthospermum* are quite distinct and totally different from those of *Xanthium*. There is an outer whorl of 5-6, or occasionally 8, echinate and horned achenes spreading star-like and surrounding a group of minute, pale yellow, tubular, male florets. The female outer florets are also yellow, but they are ligulate and slightly bigger than the male disc florets.

2. **Campanula canescens** Wall. Cat. 1289.

This is another plant of which there is no mention in Cooke's flora; the following description is taken from C. B. Clarke in Hooker's *Flora of British India*, vol. III (1882), p. 439:

'*C. canescens*, Wall. Cat. 1289; hairy, leaves oblong or lanceolate crenate, calyx teeth linear-lanceolate, 1/10-1/5 in. A. DC. Prodr. vii, 473.

Throughout Northern India; alt. 0-5,000 ft., from the Himalaya to Central India and Pegu, very common. Ceylon, Thwaites.

Stems 6-24 in. Leaves 1 by 1/4-1/3 in. Flowers numerous, clustered in panicles, dimorphic (both forms frequently on one stem); one form complete, the other very much smaller without corolla or stamens. Calyx-teeth 1/5 in. in the perfect flower, often scarcely 1/12 in. in the imperfect. Corolla 1/4 by 1/5 in., broadly campanulate, shortly lobed, grey-purple. Ovary 3-celled, or in large examples 5-celled. Capsule 1/5-1/4 in. in diameter; or in the imperfect flowers often scarcely 1/10 in., producing perfect seeds. Seeds very minute.'

In an old copy of Hooker's Flora that was frequently used by the late Fr. E. Blatter, there is a marginal note in pencil in the hand-writing of Fr. Blatter stating that he found the plant at Panchgani. T. R. D. Bell collected the same plant at Ambavadi, Thana district, N. Konkan, in February 1918 (Sedgwick's Herbarium, St. Xavier's College, nos. 3618 & 3618 II). During the Christmas season of 1944 we found the plant growing and in flower at Purandhar, Poona Dt. (No. 5738 & 5738 II, Blatter Herbarium); the plant was nowhere abundant, but it was spread all over Purandhar hill, in gardens, along the paths, etc.; on some of the specimens all the flowers were of the imperfect type mentioned by Clarke; other specimens had perfect flowers mixed with imperfect ones. Our specimens agree in all respects with Clarke's description except for the colour of the flower: in old flowers the colour was greyish-purple, but fresh, young flowers were of a brilliant purplish-blue colour. The whole plant is covered with spreading hairs; on the calyx such hairs are found along the midrib of the lobes, from the base to the very tip; the leaves are covered on both sides with stiff hairs which are spreading or appressed. The size of the leaves in Sedgwick's specimens is up to 1.75 x 1 in.

3. **Aeginetia pedun** Wall. Pl. As. Rar. iii, 13, t. 219.

The following is the description of the plant as given by J. D. Hooker in *Fl. Br. Ind.* IV, (Jan. 1884), p. 320:

'Scape short, stout very fleshy many-fld., flowers on long peduncles, bracteate at the base, corolla-tube yellow mouth blue, placentas 2 each of 2 plates.

Throughout India, on the roots of grasses, from Murree, *Elliot*, Sikkim, *Clarke*, and Assam, to Travancore and Singapore.—Distrib. Cochin China, Java.

Whole plant 3-6 in. high, red or yellow. Stem very short, as thick as a swan's quill, buried in the soil, giving off numerous alternate pedicelled flowers that rise above the surface of the ground, rarely slender and 1-fld. Peduncles 1-4 in., slender to stout, bracteate at the base; bract 1/4-1/2 in., ovate obtuse. Calyx 1 1/2-2 1/2 in. long, fleshy, red then yellow white, loaded with mucilage, tip obtuse, acute or shortly beaked. Corolla-tube as long as the calyx, yellowish, limb bright violet, lobes crenate and erose. Anthers of lower stamens with large dorsal fleshy decurved horn. Stigma broadly cordiform, peltate. Capsule ovoid. Seeds brown.—Wight's figures represent the placentas as more divided than other analyses show.'

This plant grows abundantly on the slopes of Behram's Plateau at Khandala on the Western Ghauts, just above tunnel no. 23 of the G. I. P. line Bombay to Poona; it was found growing on the roots of various grasses. The following description was written at Khandala on Sept. 4th, 1943, and was based on fresh specimens collected that very morning at the place mentioned.

Peduncle of flower up to 2.5 in. long. Bract at the base of the flower about 3/8 in. long, triangular, acute; calyx spathaceous, split down one side to about half its length, up to 2 in. long, inflated, 'dirty' yellow in colour, coriaceous, glabrous, inclined to be angular (perhaps this is due to the pressure exerted by the neighbouring flowers). Corolla tubular, with 5 free, subequal lobes; tube curved; limb of the corolla slightly 2-lipped, the lobes orbicular, margins undulate. The colour of the corolla lobes is purplish-blue with a bright yellow spot in the centre of the midlobe; throat yellow; tube white. Stamens 4; filaments stout, glabrous, inserted on the corolla tube. Style incurved, stigma large, umbonate, white. Ovary superior, 2-locular, ovules many in each loculus; ovoid, about 3/8 in. long, divided into two lobes by shallow, longitudinal depressions. Stamens, stigma and ovary included. There is an abundant mucilaginous secretion between the calyx and the corolla tube. (Nos. 2605, 2606, 2607).

On October 1st, 1943 the plant was still in full bloom at the same spot. A specimen collected at this later date shows remarkable abnormality in that one flower is perfectly regular in structure and colour and the number of petals was 6 in place of the usual 5; each one of the lobes of this flower had a bright yellow spot in the centre. The other flowers on the same plant were 5-lobed, slightly two-lipped with but one single yellow spot in the centre of the midlobe of the lower lip. The abnormal flower has been preserved in formaline in the Blatter Herbarium (No. 2775).

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## 33.—SOME COMMENTS ON 'A SKETCH OF THE BOTANY AND GEOGRAPHY OF NORTH BURMA'.

Those interested in North Burma will be grateful to Kingdon-Ward for his valuable monograph entitled 'A Sketch of the Botany and Geography of North Burma, parts I & II of which were published in the August and December 1944 numbers of the *Journal*. Is it too much to hope that he will one day produce a flora of the area, even though the materials be inadequate or at least a guide to the more beautiful flowering plants and shrubs? Such a guide would greatly enhance the interest of a visit to the area, and who is better qualified to write it than Kingdon-Ward, with his unique field experience of North Burma?

One or two minor errors in the monograph need to be corrected. On page 557 he writes:—'South of Fort Hertz the Nam Yak, rising in the western range, joins in; its broad valley forms the southern boundary of the plain.' The Nam Lang is the river that forms the southern boundary of the plain. The Nam Yak rises at the Chaukan pass and after describing a wide U finishes up with a 12-mile stretch running almost due north to join the Nam Lang a few hundred yards above its junction with the Mali Hka.

On page 558 (top) he writes:—'Two other shorter rivers join the Taron immediately east of where the Nam Tamai parts company from it, both flowing from the north. These are the Dablu and the Tazu . . .' In actual fact the Dablu Wang is a tributary of the Nam Tamai, and joins it about 2 miles north-west of the Taron junction.

On page 553 he states that in 1922 he reached the Taron for the first time and continuing south-east reached Hkamti Long via the Nam Tamai. Hkamti Long is south-west of the Taron.

On page 17 of the December issue he writes: 'Few villages appear to last more than 20 years; quite a number scarcely last ten'. The people certainly move about a good deal, but taking the Nam Tamai as a whole the majority of the villages are found exactly where they were when mapped by the Survey some 25 years ago. The backward Nung tribes of the Taron and upper Nam Tamai valleys seem to be the most mobile; in the Putao subdivision the most noticeable changes have taken place in the Dablu and Nam Tisang valleys; all the villages in the latter north