H25. 2. β. **Euchrysops contracta contracta,** But. Common.

H27. 1. **Catachrysops strabo,** F. Common.

H28. 1. **Lampides boeticus,** L. Common.

H29. 1. ♂. **Jamides bochus bochus,** Cr. Not rare.

H57. 6. β. **Spindasis ictis ictis,** Hew. Not rare; seen commonly in November.

H84. 1. **Virachola isocrates,** F. Not rare. Locally distributed.

H85. 16. **Rapala melampus,** Cr. Rare. Only three seen; two of which were caught. (18 Dec. 1943, 28 Nov. 1944, and 14 Dec. 1944).

I. HESPERIIDAE.

II. 16. **Hasora alexis alexis,** F. Rare.

197. 24. ♂. **Baoris conjuncta narooa,** M. Rare.

197. 31. β. **Baoris mathias mathias,** F. Common.

198. 1. β. **Gegenes nostrodamus karsana,** M. Scarce.

Nadiad,
Kaira District.
Dec. 1, 1944.

NEW PLANT RECORDS FOR THE PRESIDENCY OF BOMBAY (II).

BY

FR. H. SANTAPAU, S.J.

(With a plate)

In this second set of New Records,[1] I have selected mainly a number of plants from N. Kanara. For the description of the plants, I have consulted Hooker's *Flora of British India*, D Candole's *Prodromus*, Gamble's *Flora of the Presidency of Madras*, and, in the case of *Gomphostemma Heyneanum* Wall, Mukerjee's *Labiatae of the Indian Empire*. Their descriptions have been supplemented from study of the specimens in Blatter Herbarium.

1. **Synedrella nodiflora** Gaertn. *Fruct.*, ii, 456, t. 171, f. 7; D C. *Prodr.*, v, 629; Hook., *Exot. Fl.*, t. 60; Clarke, *Comp. Ind.*, 139; Hooker, *f. Fl. Brit. Ind.*, iii, 308; Gamble, *Fl. Pres. Madr.* 708; Mayuranathan, *Fl. Plants Madr., City*, 153.

Synedrella belongs to the family *Compositae*, and is placed by Hooker under Tribe V *Helianthoideae*, subtribe 6 *Coreopsideae*.

Annual, erect herb, branching dichotomously and reaching a height of about 60 cm.; stems and branches finely striate, terete, glabrous or more or less hairy with whitish appressed hairs, which are more dense just below the nodes.

[1] See *J.B.N.H.S.*, vol. 45, p. 445.

Leaves opposite, ovate-lanceolate, tapering at both ends, serrate or crenate, scaberulous with a few scattered hairs on both sides; base decurrent into the petiole; petioles about 8 mm. long, but often obscure on account of the decurrent leaf blade. Nerves 3 from the base or near it, with about 4—6 pairs of fainter ones higher up. The bases of the petioles of opposite leaves meet round the stem and form a sort of a stipular cup, which is densely hairy with stiff white hairs and ciliate.

Involucres ovoid; bracts few, the outermost herbaceous, densely hairy; the inner ones passing gradually into the paleae of the receptacle, shining, yellowish. Receptacle small, flat. Floral heads in the axils of leaves, at the nodes between two dichotomous branches and at the end of the branches, sessile or nearly so, a few heads generally crowded together.

Florets yellow; outer florets ligulate, fertile, female, ligule short, broad, 2-3-toothed; disc florets hermaphrodite, fertile, tubular, limb 4-toothed. Both ligulate and tubular florets are of about the same size, so that the ligules are easily missed. Anthers black, subentire at the base, half-exerted. Style arms of hermaphrodite florets with long acute tips.

Achenes of ray florets dorsally compressed, 2-winged, smooth, wings irregularly cut unto a number of teeth which are hairy or pubescent (see plate, fig. A.); the achenes are black, the wings and teeth greenish yellow. Achenes of the disc florets narrower, striate, muricate, ending in two stiff, spreading hairy spines, which are as long as or a little shorter than the achenes (see plate, fig. B.)

This seems to be a Central American plant, which has been introduced into India in cultivated lands. Gamble, loc. cit., gives it as a plant of 'Plains Districts, occasional on cultivated lands, introduced from Mexico'. Mayuranathan, loc. cit., mentions that 'this weed is thoroughly naturalized here and is frequently found on waste land'. I have been unable to find any other reference to the plant in any other published floras on India.

In the Blatter Herbarium there is a specimen collected by Sedgwick (Sedg. 2952!) during September 1917 at Belgaum; a note in the handwriting of Sedgwick mentions that the plant is 'well established at Belgaum in the Fort and in compounds'. Recently I found this plant growing abundantly at Jogeshwari near Bombay (Santapau 8161, 8162); it was a gregarious plant, generally growing under the shade of trees, though it seemed to thrive best at some distance from the trunk of the protecting tree. (See pl.).

2. **Salomonia oblongifolia** DC. *Prodr.*, i 354; Bennett in Hooker *f. Fl. Brit. Ind.*, i, 207, *S. obovata* Wight Ill., i, 49, t. 22 B; *S. leptostachya* Wall. Cat. 4193.

Salomonia belongs to the family *Polygalaceae*; Cooke mentions only *Polygala*, Blatter in his Revision (Part XII, in this *Journal*, vol. 34, No. 2, p. 302, July 15, 1930) adds a new genus, *Xanthophyllum*. I add the genus *Salomonia*, which on the testimony of T.R.D.Bell is common in N. Kanara.

Simple or branched annual herb. Stems erect, glabrous, furrowed and slightly winged, 6-30 cm. high.

Leaves elliptic or ovate-lanceolate, sessile or very shortly petiolate, base acute not cordate, margins entire and with a few long distant hairs; mid-nerve strong, other nerves obscure. Stipules O.

Flowers minute in dense terminal spikes; bracts linear, minute, often persistent at the time of flowering. Flowers crowded, minute, 2-3 mm. in length, generally pink, occasionally white (Blatt. Herb. No. 35146). Spikes 1.5-4 cm. long.

Sepals 5, nearly equal, lanceolate, slightly ciliate, the 2 interior somewhat larger. Petals 3, united below with the staminal tube, the inferior petal keel-shaped, galeate, not crested; lateral petals much shorter than the keel. Stamens 4-5, filaments united below into a tube or sheath; anthers opening by pores. Ovary 2-celled, each cell with one pendulous ovule. Capsule much compressed laterally, 2-celled, loculicidal, margins with a row of long teeth, which are red or reddish in colour. Seeds albuminous, black, shining, not strophiolate.

This species is very near *S. ciliata* DC., from which it differs mainly in the shape and structure of the leaves; in *S. ciliata* leaves are amplexicaul, cordate, sessile and strongly ciliate.

To the localities given in *Fl. Br. Ind.*, North Kanara must be added. In the Blatter Herbarium there are several specimens collected during the month of October 1919 in various places of North Kanara: Hallb. and McCann, 35083, Jod-Siddhapur; 35146, Sampakhand; T.R.D.Bell, 4234, grass lands at Sulgeri on the Kala Nadi; L. J. Sedgwick 6656, grass banks by the sea, Karwar; Sedgwick and Bell 7254, Siddhapur. All these specimens show flowers and fruits; the upper part of the spikes is in flower, the lower in fruit, and most of the fruits are dehisced.

3. **Gomphostemma Heyneanum** Wall. Cat. 2152/I and 2152/B; DC. *Prodr.*, xii, 551; Wight Ic. t. 1456; Prain in *Ann. R.B.G.Cal.*, iii, 248 and t. 79; Gamble, *Fl. Madr.*, 1157; Mukerjee, *Lab. Ind. Emp., Rec. Bot. Surv. Ind.*, xiv, 206; *G. strobilinum* var. *Heyneana* Hook. f. *Fl. Brit. Ind.*, iv, 696.

Gomphostemma belongs to the family *Labiatae*, and is placed by Mukerjee in Tribe VI, *Prasieae*. The following description is taken from Mukerjee, loc. cit.:

'Tall robust subshrubby herb, 60-100 cm. high; stem erect, obtusely tetragonous, slightly grooved, densely tomentose with stellate hairs. Leaves petiolate, elliptic-ovate, subacute, closely serrate, base abruptely cuneate and decurring on the petiole; lamina 16-24 cm. long, slightly rugose and shortly hirsute above, flocculently tomentose beneath; petiole 4 cm. long. Spikes terminal, interrupted near the base; bracts ovate or ovate-lanceolate, acute, rounded at the base, longer than the calyx; bracteoles linear. Calyx about 11 mm. long, teeth shorter than the tube, lanceolate, acuminate. Corolla yellow or blue with purple tinge, 12-15 mm. long, tube as long as the calyx, slightly incurved above, hirsute in the middle within; mouth broad, upper lip short, tomentose. Style glabrous. Nutlets 5 mm. long, black, rugose, glabrous.'

In the Blatter Herbarium there are several specimens of this plant, all of which have been collected in North Kanara round about Gersoppa Falls; No. 35076 was collected by Hallberg and

McCann in October 1919; Sedgwick collected Nos. 7062 and 7235/I, 7235/II, 7235/III in October 1918. All these Herbarium sheets bear remarks by the collectors showing that in every case the flowers were bright yellow. Prain, loc. cit., gives Stocks as the authority stating that the plant is found in the Konkan; I have been unable to trace this reference; neither Hooker *f.* nor Mukerjee mention Stocks as having found the plant in the Konkan; there are no specimens from the Konkan in Blatter Herbarium.

For a fine plate of this plant, see Prain, loc. cit., plate no. 79.

4. **Euphorbia prostrata** Ait. *Hort. Kew.* ii, 130; Hooker *f. Fl. Br. Ind.*, v, 266C not *E. prostrata* Grah., which is a synonym for *E. thymyfolia* Burm).

J. D. Hooker in his *Fl. Brit. Ind.*, loc. cit., places this species at the end of his Euphorbias, under the heading 'Doubtful Species'. He adds the following remarks: 'Englemann (in Torrey, *Bot. Mex. Bound. Exped.*) says of this American species that it is found in India; but I have seen no specimen, nor does Boissier, who figures it well (*Euphorb.* Ic. t. 17), mention it as Indian. It is a native of W. Africa and the Mauritius. It closely resembles *E. microphylla*, differing in the ciliate keel of the cocci.'

In Blatter Herbarium there are three specimens collected by M. Ezechiel at Poona on the 17th and 21st of may 1917 and identified by the collector as *E. thymifolia* Burm.; the identification of these three specimens (13509, 13509/B, 13510) has been corrected by Blatter, who adds the following remarks: 'Cocci ciliate especially the keels'. Gamble, *Fl. Pres. Madr.*, p. 1276, notes: '*Euphorbia prostrata* Ait . . . . Deccan and Carnatic, occasionally, usually probably as a weed in gardens. An introduced plant, native of W. Indies. A Prostrate herb.' On the evidence of Gamble and of the specimens in Blatter Herbarium, there is, therefore, no doubt as to the occurrence of this plant in India in general and in Bombay Presidency in particular.

5. **Isanthera permollis** Nees in *Trans. Linn. Soc.*, xvii, 82; DC. *Prodr.*, ix, 279; Wight Ic. t. 1355; Clarke in *Hooker's Fl. Brit. Ind.*, iv, 372.

This plant belongs to the family *Gesneraceae*.

Small undershrubs; stems in the Kanara specimens 10-20 cm. high, up to 6 mm. thick, woody, covered with leaf scars almost from the base. Leaves alternate, broadly oblanceolate, tapering at both ends, entire or nearly so, with slightly revolute margins; up to 15 x 6 cm.; base decurrent into the petiole; petioles 0.6—3 cm. long. Nerves about 12-14 pairs, very distinct on the under surface of the leaves. Leaves, when young, densely silky pubescent with reddish hairs; at length glabrous or nearly so above, more or less pubescent beneath. Inflorescence cymose, axillary, towards the end of the stem; whole inflorescence densely silky pubescent, at length more or less glabrous. Peduncles about as long as the petioles, the whole cyme 1.5-4.5 cm. in diam. Bracts narrow, acute, up to 9 mm. long. Sepals 5, small, narrow, 4-6 mm. long, silky, at length glabrous. Corolla small, shortly campanulate, obscurely 2-lipped; lobes 5, ovate, white. Stamens 4, fertile; filaments short, anthers small, subquadrate, 2-celled, slits marginal, finally confluent at the subemarginate apex. Disc very small or O.

Ovary ovoid, sessile; style shorter than the ovary, stigma small, simple, ovary glabrous, muriculate.

Fruit a berry, small ovoid, 8×4 mm., fleshy, indehiscent. Seeds very small, ellipsoid, smooth, brown in colour.

Collected by Hallberg and McCann near Gersoppa Falls, North Kanara in October 1919 (Nos. 34758, 35050, 35053). Sedgwick and Bell collected it in the same month and year at Malemane Ghat in North Kanara (Nos. 7208/I, 7208/II).

6. **Microcarpaea muscosa** Br. *Prodr.* 436; Benth. in DC. *Prodr.*, x, 433; Gamble, *Fl. Pres. Madr.*, 963; Hooker in *Fl. Brit. Ind.* iv. 286.

This plant belongs to the family *Scrophulariaceae*, and the genus is not mentioned in Cooke as occurring in the Presidency.

A very small slender, diffuse or creeping nearly glabrous herb. Stems tufted and interlaced, 6-12 cm. long, rooting at the nodes, angles of the stem and calyx sometimes ciliate.

Leaves opposite, sessile, oblong, obtuse, entire, 3-8 mm. long. Flowers minute, axillary, solitary, sessile, ebracteate, in one axil only of each pair of leaves, about 2-3 mm. long. Calyx tubular 5-angled, 5-fid. Corolla very short, tube broad; lobes 5, spreading, the 2 upper lobes subconnate; tube shorter than the calyx. Stamens 2 perfect, filaments filiform; anthers confluent, 1-celled; staminodes 0. Style filiform, stigma capitate, recurved. Capsule minute, included, ovoid, 2-grooved, loculicidal; valves entire, separating from the placentiferous septum. Seeds few, ovoid.

To the localities given in Hooker's Flora must be added those given by Gamble: 'W. Coast, S. Canara to Travancore in marshy places.' In the Blatter Herbarium I have seen the following specimens: No. 34345, collected by Hallberg and McCann at Karwar, N. Kanara during the month of October 1919; Sedgwick 5123, collected by Sedgwick in a rice field at Karwar in December 1918, and Sedg. 7256 collected by Sedgwick and Bell at Siddhapur in October 1919. These three specimens constitute a new record for the Presidency.

ADDITIONAL NOTES ON THE BOTANY OF NORTH BURMA.

BY

F. KINGDON WARD, B.A., F.L.S., etc.

(With a map.)

Recently I received from Mr. E. J. H. Corner, Assistant Director of the Singapore Botanic Garden, the Burma diaries which I left there in 1941. Mr. Corner was a prisoner of war throughout the Japanese occupation, but had persuaded the Japanese of the importance of keeping up the Gardens; with the result that not only was he himself in some measure retained to help Professor Tanakadate—appointed by Tokyo University to the Directorship—but