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## SHORT SCIENTIFIC NOTES

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### On the Occurrence of *Blumea heiracifolia* (D. Don) DC. var. *flexuosa* (Cl.) Randeria (Asteraceae) in India

During a recent exploration for the collection of medicinal plants in Chikmagalur district the authors collected near Sirlu village, 40 km from Sringeri (Karnataka State) a taxon identified as *Blumea flexuosa* C.B.Cl.

The revision work of Randeria in *Blumea* 10 (1) : 1960, 176–317, on the genus *Blumea* DC. was consulted for determining the nomenclature of this taxon. It was observed that Randeria, *l.c.*, p. 249, has reduced this species *flexuosa* C.B.Cl., to a variety under *Blumea heiracifolia* (D. Don) DC. var. *flexuosa* (Cl.) Randeria, effecting the new combination also. Further, the occurrence of this plant has been stated to be 'endemic' to Ceylon. This observation of endemism has been based on the herbarium specimens examined by her.

The authors examined the type material at MH and one sheet of *Thwaites* C.P. 19 was observed to be present among this type material and the specimens collected by the authors exactly matched with this specimen. Further, there was one more sheet under *B. flexuosa* collected by *R.H. Beddome s.n.* (accession No. 27641) with the locality mentioned as South Canara which also matches with the specimen present *Thwaites* C.P. 19.

Gamble has annotated in pencil on this sheet "I am not sure this may not be *B. crinita*". But *B. crinita* can be easily distinguished from *B. heiracifolia* var. *flexuosa* in not being woolly or silky, having denticulated leaf margins and rounded leaf bases (Randeria, *l.c.*, p. 251).

The collection of our specimens from Sirlu village and the presence of a sheet in MH from South Canara, both of which match with the type material *Thwaites* C.P. 19 present at MH, corroborates the occurrence of this taxon as mentioned by Gamble in the *Flora of the Presidency of Madras*, p. 481 (repr. ed. 1967) under *B. flexuosa*, as occurring in "Western Ghats, hills of Mysore at 3,500 ft., Sispara in Nilgiris about 6,000 ft., hills of Travancore at 6,000 ft".

While Randeria has made every attempt to examine all available sheets in the various herbaria, it is quite possible that she has missed the sheets from South India (since no reference has been made in the revision work) on which Gamble, *l.c.*, p. 481 has based the occurrence of this taxon. Since all the sheets referred to by Randeria are from Ceylon,

it has led her to the conclusion that the taxon is endemic to Ceylon.

Our recent collections, supported by a sheet present in MH from South Canara and also the distribution of the taxon as mentioned by Gamble (*l.c.*), are sufficient to prove that *B. heiracifolia* (Don) DC. var. *flexuosa* (Cl.) Randeria is not endemic to Ceylon but also occurs in South India.

*Herbarium specimens examined* : MH : *Thwaites* C.P. 19 ; one sheet with accession No. 27662 (from Ceylon); *R. H. Beddome s.n.* (accession No. 27641 from South Canara, 1867). *Yoganarasimhan* 1109, 22–2–1972, flowering, near Sirlu village, ca 1,000 m. fairly common in grasslands of hill tops, deposited at the Herbarium of the Regional Research Centre, Bangalore-11.

The authors are thankful to Mr. Vivekananthan, Botanist, for useful discussion and to the Regional Botanist, Botanical Survey of India, Coimbatore, for permitting to consult the Madras herbarium. Thanks are also due to the Director, Central Council for Research in Indian Medicine and Homoeopathy, New-Delhi and Officer-in-Charge, Regional Research Centre, Bangalore, for facilities.

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(C.C.R.I.M.H.), K. SUBRAMANYAM.  
Bangalore-11, October 23, 1974.

### Discovery of Uraniferous Precambrian Conglomerates at Chikmagalur, Karnataka, India

*Introduction.*—The purpose of this note is to report the discovery of uranium-bearing conglomerates of Precambrian age at Chikmagalur (13° 19' 20" N, 75° 46' 30" E.; Survey of India top-sheet No. 480/15) in Karnataka State, and to briefly describe their geological setting, radioactivity, and mineralogy.

*Geological setting.*—The uraniumiferous conglomerates occur over a granitic-migmatitic basement, and grade upwards to pebbly quartzite, grit, arkose, and quartzite. This sequence is followed by a second zone of conglomerates, and by massive mafic metavolcanic rocks, in some of which pillow structures can be recognised.

*Uranium content.*—Surface samples of the conglomerates have assayed upto 0.13%  $U_3O_8$ , and core samples from boreholes drilled to a depth of 106 metres analyse upto 0.21% uranium. 90% of the uranium is in a leachable state.

**Distribution.**—The uraniferous conglomerates occur as five distinct ribbon-shaped bands or beds, each 5 km long.

**Mineralogy.**—The radioactive minerals in the conglomerates are pitchblende, monazite, and zircon. The other interesting constituents are chalcopyrite, covellite, rammelsbergite, pyrite, siderite, ilmenite, rutile, leucosene, and magnetite. The common minerals include white and grey quartz pebbles (1 to 3 cm in diameter) embedded in a quartz-rich matrix, and some ferromagnesian assemblages.

**Conclusion.**—Preliminary studies suggest that the uraniferous conglomerates of Chikmagalur are comparable to the well-known uranium-rich Precambrian quartz-pebble conglomerates of Blind River in Canada, and the Witwatersrand in South Africa. The results of detailed investigations currently in progress will be published elsewhere.

I am grateful to Dr. G. R. Udas, Director, Atomic Minerals Division, for suggesting the study.

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#### Identification of Chlorinated Hydrocarbon Pesticides on T.L.C. Plates Using Modified Wood's Reagent

WOOD<sup>1</sup> described the use of a mixture of bromophenol blue and silver nitrate for the detection of chloride ion on paper chromatograms. Abbott, Egan and Thomson<sup>2</sup> used this reagent for the detection of chlorinated hydrocarbon pesticides on T.L.C. plates. However the limits of detectability were not reported. Their method of detection involved several steps and there was difficulty in handling the plates at 105° C.

A modified Wood's reagent using ammonia vapour exposure, developed in this laboratory, eliminates these difficulties and facilitates detection of chlorinated pesticides at levels less than 1 µg. The method is as follows:

T.L.C. plates are prepared using prewashed silica gel G with a layer thickness of 250 µ. Chromatograms of Aldrin, Dieldrin, Endrin, Thiodan and D.D.T. with different concentrations are developed using cyclo-hexane as solvent. After development the plates are dried at room temperature and sprayed with the modified Wood's reagent (90 ml of 0.05% bromophenol blue dissolved in acetone plus 10 ml of 2% aqueous silver nitrate solution). They are then exposed to ammonia vapour for 15 minutes in a sealed tank. Blue spots on purple background

are obtained. The limits of detectability and rf values are presented in Table I.

TABLE I

Pesticide	Lowest limit of detectability/ µg	rf value (94°-98° F)
Aldrin	0.8	0.88
Dieldrin	0.8	0.29
Endrin	0.8	0.31
Thiodan	3.0	0.38
OP' DPT and PP' DDT	0.6 µg in technical DDT	0.75 for OP' isomer 0.72 for PP' isomer

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August 9, 1974.

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#### *Archipsocus* sp. (Archipsocidae: Psocoptera), A New Pest of Citrus from India\*

Some Mandarin (*Citrus reticulata*) trees were found severely attacked by psocid, *Archipsocus* sp. during the surveys of citrus orchards in Coorg District during September–October 1972 and 1973. Nymphs and adults gregariously feed on the foliage and shoots by inhabiting within the silken webs formed by them. Occasionally the colonies extend upto the main branches. Affected twigs turn yellow and chlorotic. In severe cases the leaves shed off and twigs and branches die out. About 128 insect pests, so far, have been reported to attack *Citrus* spp. in India<sup>1</sup>. This is the first record of this insect pest on citrus and as such is an addition to the above list.

Thanks are due to Dr. G. S. Randhawa, Director, Indian Institute of Horticultural Research, for encouragement and to Dr. R. G. Fennah, Director, British Museum, London, for identification of the pest.

Indian Institute of Horticultural Research, Bangalore-6,  
November 3, 1974.

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\* Contribution No. 343 of Indian Institute of Horticultural Research, 255, Upper Palace Orchards, Bangalore-6.

1. Pruthi, H. S. and Mani, M. S., *ICAR., Sci. Monogr. No. 16*, 1945.