longer than the sepals and lacking a clear midlobe; callus being 3-lobed.

Small epiphyte. *Roots* capillary, white. *Leaves* 4-6, distichous, jointed at base, linear, arched, thick, furrowed ventrally, convex dorsally, 2-7 × 0.3-0.5 cm, apex keeled; keel beaked. *Spikes* 1-3, axillary at lower nodes, shorter than the leaves; scape 1-2.5 cm long, slender, cylindrical, slightly swollen towards the top with the condensed bracts and flowers; bracts very few, tiny. *Flowers* sessile, 1-3, white; perigone widespread; dorsal sepal 5.0 × 3.5 mm, broadly ovate to elliptic, obtuse; laterals 5.0 × 4.5 mm, broadly obliquely ovate, obtuse, sepals 5-nerved; petals 4.5 × 2.0 mm, ovate-elliptic, obtuse, 3-nerved. *Lip* spurred, *in situ* with its lobes hugging the column, juglike, clavate or globose-glandular hairy at the rim and more densely so within along the midzone leading to the spur, pinkish streaked on the sides, when spread out, two-lobed with a broad median sinus or sometimes with an obscure mid-lobe; lobes obtusely triangular, *ca* 1.5 × 2.0 mm; spur gibbously sub-scrotiform, 2.0-2.5 mm long, *ca* 3 mm broad towards lip, and 2 mm at tip, with a zone of glandular hairs merging with that of the lip and a median callus within, where the spur mouth connects the lip; callus narrow, flaplike, faintly 3-lobed, midlobe orange-red; column *ca* 1 mm, erect with a short foot; pollinia terminal, in two pairs, each pair unequal. *Capsule* almost transverse to the scape, 2.5-4.0 cm long, narrowly cylindric, finely 3-ridged with marcescent perianth (Figs. 1-6).

Holotype: *Joseph* 45621A between Umran and Umsaw, beside the Gauhati-Shillong highway, 23rd July 1966 (CAL). Isotypes: *Joseph* 45621 B-G & Paratypes: *A. S. Rao* 45638 A-G, old cinchona plantation area, Umsaw forest, just beside the Gauhati-Shillong highway, 8th November 1967 (ASSAM).

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A NOTE ON THE CYTOMORPHOLOGY OF *TARAXACUM OFFICINALE* COMPLEX FROM N. W. HIMALAYAS

Taraxacum Wigg is a cosmopolitan genus consisting of 152 species and has very wide distribution adapting itself to a variety of situation, which accounts for its intricate variability. In India, two species, namely *T. officinale* and *T. wattii* are met in the Himalayas from 300-6000 m (Hooker, 1882), the former being more common.

Intensive cytomorphological studies were carried out in Western Himalayas from Kashmir to Kumaon hills with an altitudinal range of 1200-3600 m and different populations of *Taraxacum officinale* were studied from various localities. The present study reveals the presence of seven cytotypes *i.e.* 2n = 24, 26, 27, 32, 40, 44, 48, in the W. Himalayas. Darlington & Wylie (1955) suggested 8 as the base number for this genus and accordingly the cytotypes are triploid (2n = 24), aneuploid at triploid level (2n = 26, 27), tetraploid (2n = 32), pentaploid (2n = 40), aneuploid at pentaploid level (2n = 44) and hexaploid (2n = 48) respectively. Meiotic and karyotypic studies of all these cytotypes from different localities of W. Himalayas were made. Meiosis in all these cases was abnormal due to the presence of laggards at telophase, high percentage of pollen sterility, univalents at metaphase, irregular distribution of chromosomes at A-I and A-II, coupled with formation of dyads, tetrads and polyads. Gustafsson (1935) remarks that the genus *Taraxacum* is highly apomictic. The presence of some percentage of normal tetrad and filled pollen indicates that *T officinale* is a facultative and not obligate apomict.

The origin of triploid can be speculated from a cross between diploid and tetraploid of the same species or even a closely allied one. As a consequence of the univalent formation, restitution nuclei and dyads with unreduced numbers arise which can be responsible for the origin of aneuploid races. Pentaploid could be due to the fertilization of a reduced gamete of tetraploid with a reduced gamete of a hexaploid or an unreduced one gamete of triploid fertilizing a reduced one of a triploid.

The morphological characters not only differ in various cytotypes, but are not constant even in the same cytotype. Leaf size in triploids ranges from

5-12 cm, in tetraploids from 4.9-27.5 cm and in aneuploids, pentaploids and hexaploid it varies from 12-15 cm.

All this data suggests that the leaf size does not correspond to the level of ploidy or chromosome number. But the length of leaf and extent of dissection is chiefly affected by environments.

Further cytomorphological and embryological studies are in progress.

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PARAKAEMPFERIA SYNANTHA (ZINGIBERACEAE)—A NEW GENUS & SPECIES FROM ASSAM

During a plant exploration in May, 1966, in the North Lakhimpur district bordering the lower hill-ranges of Subansiri district, a Zingiberaceous plant resembling *Kaempferia* L. was collected, both for the herbarium and the experimental garden. The plant in the experimental garden at 'Woodlands', Shillong, has survived, but not bloomed. A critical study of the herbarium specimens showed that while our plant resembled *Kaempferia* L. and *Caulokaempferia* Larsen, it was distinctive in its elongated leafy stem, contemporaneous with the radical spikes. Accordingly, it is now described.

Parakaempferia A. S. Rao et D. M. Verma gen. nov.

Herbae terrestres, perennes. *Rhizoma* repens, squamosum, nodosum ad basin surculorum ; radices robustae. *Caules* elongati. *Folia* alterna, disticha, floribus contemporanea ; vaginae apertae ; ligula brevis ; nervi pinnati. *Spica* una vel plures, radicales, circum caulem ; pedunculi graciles, squamis imbricantibus bracteae similibus inclusi ; rachis longa, gracilis ; bracteae plures, ascendentes, uniflorae ; bracteolae ellipticae. *Flores* successive aperiendi e basi sursum ; calyx tenuiter 3-lobus, ad unum latus divisus ; corolla tubularis ; laciniae 3, posterior quidem latior et apiculata ; staminodia lateralia bina, petaloidea ; labium obovatum, emarginatum ; stamen unum ; filamento brevi ; connectivo lato ; antherae crista ampla, subreniformi, integra ; ovarium 3-loculare, placentis axilibus, ovulis pluribus ; stylus canaliculo staminali inclusus ; stigma turbinatum, pilosum. Species typica sequens.

Parakaempferia synantha A. S. Rao et D. M. Verma sp. nov.

Rhizoma crassum *ca* 5 mm. *Caulis* 40-60 cm altus. *Folia* 4-6, inferiora quidem sessilia, superiora vero petiolata ; petiolis ad 1 cm longis ; lamina lanceolata vel oblongo-lanceolata, 13-24 cm longa, 3.3-7 cm lata, basi cuneata, apice caudato-acuminato, pagina superiore glabra, inferiore pubescenti praesertim secus nervum medium ad basin ; ligula 2-3 mm longa, biloba, pubescens. *Spica* 1-3 ; pedunculi 3-6 cm longi, *ca* 1.5 mm crassi, villosi ; rachis 6-12 cm longa, villosa ; bracteae 7-11, lanceolatae, convolutae, 2-2.6 cm longae, 6-8 mm latae, acutae, marginibus scariosis, pubescentes, roseae ; bracteola 6.5-8 mm longa, *ca* 4.5 mm lata, obtusa, pubescens. *Calyx ca* 1 cm longus ; pubescens ; corollae tubus bracteis aequilongus, albus ; corollae laciniae oblongo-lanceolatae, 1.5-1.9 cm longae, 6-9 mm latae, albae, nervis roseis ; staminodia lateralia oblonga, 1.7-2 cm longa, 6-7 mm lata, ad apicem rotundata, alba, nervis roseis ; labium late obovoideum, 2.5-2.8 cm longum, 2.2-2.5 cm latum, album, nervis roseis et duplici linea media lutea e basi usque ad prope centrum ; filamentum gracile, *ca* 2 mm longum ; connectivum *ca* 6 mm latum, marginibus inflexis, purpureo-rubrum ; anthera *ca* 8 mm longa ; antherae crista *ca* 6 mm alta, *ca* 8 mm lata, apice deflexo, purpureo-rubra ; ovarium ellipsoideum, *ca* 4 mm longum, villosum ; stylus stamini subaequilongus. (Figs. 1-10).

Holotypus *D. M. Verma* 46585A, secus Kana flumen, Chaldhowa, in Lakhimpur septentrionali, die 22.5.1966 (CAL) ; isotypi *D. M. Verma* 46585 B-G (ASSAM).

Parakaempferia A. S. Rao & D. M. Verma gen. nov.

Perennial, terrestrial *herbs*. *Rhizome* creeping,