nodules in Cucurbitaceae show greater chromaticity, belated fusion and ultimate mixing with the general cytoplasm, their detachment, degeneration and disappearance in *Oldenlandia* need confirmation.

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## Biosystematics of the *Sisymbrium irio* Complex

*S. irio* Linn. is a polytypic winter annual which grows throughout the Panjab plains. It occurs in diploid, triploid, tetraploid, hexaploid and octoploid races. All these races get considerably modified in response to varying amounts of moisture and sunlight. The phenotypic plasticity has been studied experimentally using the conventional 'water-light' gardens.

The diploid is morphologically uniform and shows seven bivalents. Its artificial autotetraploid shows quadrivalents and does not resemble the natural tetraploid. The latter possesses two ecological races which are markedly different from the diploid. At meiosis it has always fourteen bivalents. It is a genomic alloploid, which is confirmed by the presence of fourteen univalents in its polyhaploid. The triploid is morphologically somewhat akin to diploid but differs in details of leaf shape, flower size and above all in being completely sterile. It is a natural hybrid between diploid and tetraploid. At meiosis it shows seven to eight bivalents plus seven to five univalents. Evidently one of the genoms of the tetraploid is homologous with the diploid. Such plants yield only five to six seeds in strong contrast to the production of several thousand by the parents. Generally these seeds are of hexaploid constitution. The hexaploid is morphologically like the triploid except that it has bigger flowers and long fertile siliquas. At meiosis there are almost always twenty-one bivalents, but at times there are one to two quadrivalents. The octoploid is morphologically somewhat akin to tetraploid. However, it differs from the tetraploid in possessing shorter and thicker stems and fruits and bigger and thicker leaves, flowers and seeds. It shows varying numbers of quadrivalents and bivalents.

Crosses were attempted in all directions, but so far no hybrids except the triploid have either been obtained or seen in Nature. The hexaploid and octoploid have been synthesized. The former is either auto-allo or segmental alloploid, while the latter is auto-alloploid. It is concluded that, in this complex, one of the basic genoms is either the same as that of the diploid or of some form very close to it. The other genom has not been discovered yet.

Identifications carried out at the Forestry Research Institute, Dehra Dun, and Kew Herbariums reveal that all the races are taxonomically under the same species—*S. irio* Linn. Comparison of the various races was very kindly made by Dr. N. Y. Sandwith with the Linnean type material. It has become clear that only the hexaploid race compares very well with the Linnean holotype (Sheet No. 836.35) collected from Spain. These resemble each other in fruit characters, but differ in number of lobes of leaves.

The species has a very wide distribution covering the whole of Europe and extending to the north-western Indian sub-continent. So far it has been possible to study it in Panjab (India) primarily from Amritsar and nearby areas within a radius of approximately fifty miles. For any clear understanding of the variation pattern of the *irio* complex it is imperative to study it from most of the areas of its range.

I would be very grateful to the botanists in the area who are in a position to help me by sending seed samples, if possible accompanied by herbarium sheets giving pertinent information. Furthermore, seed samples of any other species of the genus *Sisymbrium* and allied genera like *Alliaria*, *Arabidopsis*, *Descurainia* and *Eutrema* would also be most welcome.

The details of the investigation involving morphological, cytogenetical, ecological and taxonomical aspects of the problem will be published in due course.

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## Supra-sternal Ossicles in Primates other than Man : some Isolated Cases in Gorilla and Chimpanzee

SCHULTZ[1] examined nearly three hundred gibbon skeletons and his report contains the following interesting observation : "Separate suprasternal ossicles occur in two of the gibbons examined (= 0·07%). . . . These ossicles are quite common in Man. . . . Never before have they been observed in primates other than man". Cobb[2] found no evidence of suprasternal ossicles in the skeletons of sixty-one gorillas, thirty-eight chimpanzees and eight orangs. Schultz has not seen this primitive condition "among many hundreds of monkey and ape skeletons examined, except in the two gibbons mentioned".

In view of these statements, it is of interest to record that I have found the condition unilaterally, in one chimpanzee, and, bilaterally, in one gorilla out of a total of 101 chimpanzee and 110 gorilla specimens examined. Radiographs of (*a*) the entire chimpanzee sternum and (*b*) the manubrium of the gorilla sternum are shown in Fig. 1. In each case the ossicles were situated towards the posterior margin of the upper border of the manubrium as is always the case in man.

The significance of suprasternal ossicles is still a matter for speculation. The first record of their appearance in man occurs in a paper by Béclard[3], but their discovery was claimed by Breschet[4]. Béclard considered the ossicles to represent rudiments of the furcular clavicle of birds ; Breschet believed them to be atavistic remnants of the ventral ends of cervical ribs ; Gegenbaur[5], Ruge[6] and Eggeling[7] were of the opinion that they were derived from the