Voucher specimen of the representative plant with this number has been deposited in the Jammu University herbarium under No. IAH 6. This number is not totally new to tribe Apieae, being represented exclusively in three genera and in conjucture with other numbers in another four genera. The count is, however, neither known in any representative of genus *Bunium* nor even in related genera, *Carum*, *Conopodium* and *Geocaryum*.

Although in general, lower counts are preferred as fundamental numbers in different plant and animal groups, in sub-family Apioideae of Umbelliferae, 11 is regarded as the deep seated number[3] from which other numbers are believed to have arisen through progression as well as reduction. The fact, that chromosome number 14 is represented in populations of *B. persicum* far removed from the centre of origin of the species, supports the view that it is a derived number.

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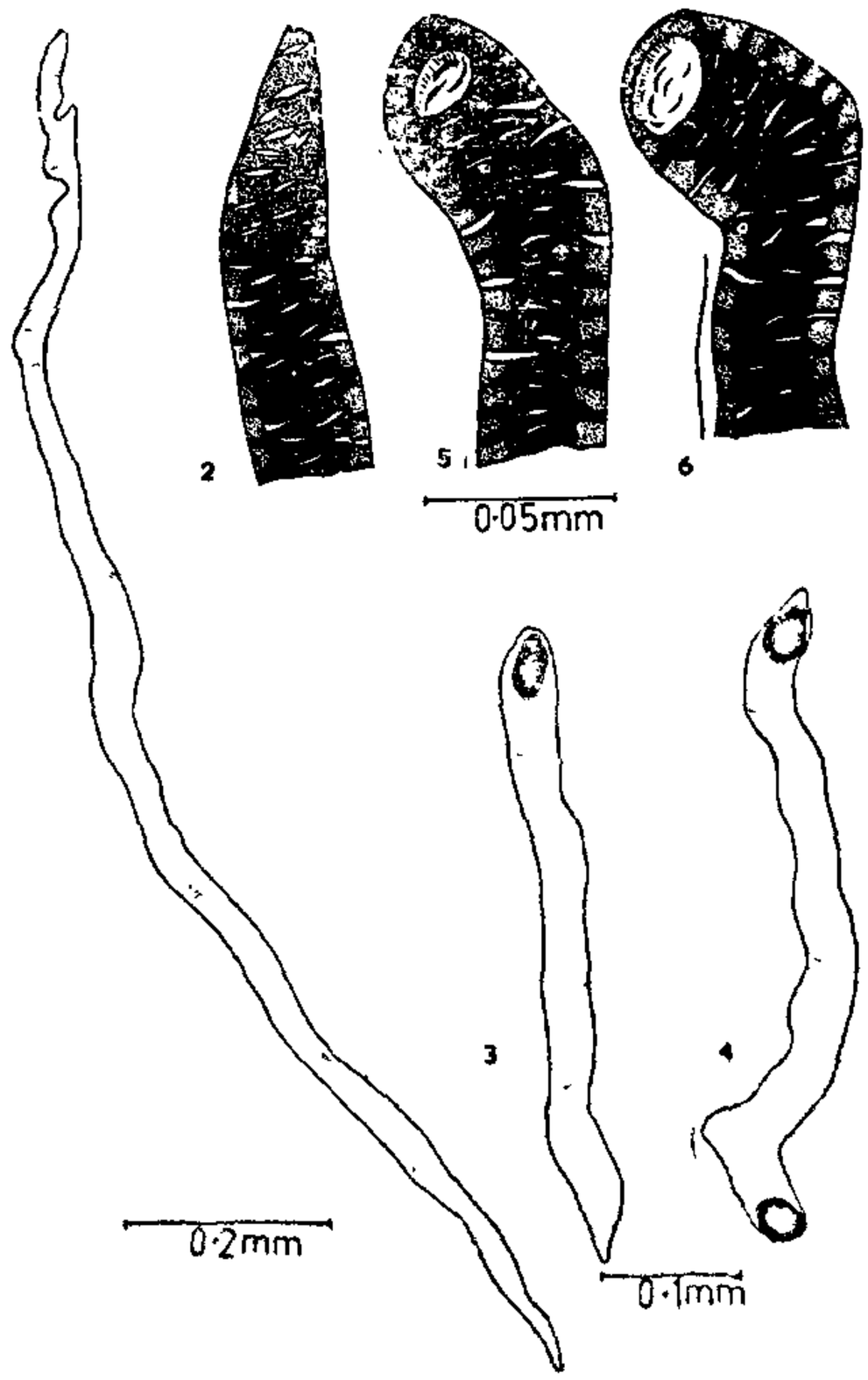
OCCURRENCE OF VESSELS IN *HELMINTHOSTACHYS ZEYLANICA* (LINN.)

True vessels have been reported to occur in seven pteridophytic genera, *viz.*, *Pteridium*, *Selaginella*, *Equisetum*, *Marsilea*, *Regnellidium*, *Notholaena* and *Woodsia*[2,4,6]. Tracheary elements of Pteridophytes including the members of Ophioglossales have received considerable attention of Bierhorst[1,2] and White[6]. In the present work, during a detailed study of tracheary elements of Ophioglossales, true vessels have been observed in *H. zeylanica* L. The standard technique of maceration[7] was followed. A few longitudinal microtomic sections prepared by customary methods of dehydration and embedding were also studied for verification.[3]

The tracheids commonly observed are directly or indirectly attached annular, reticulate, and reticulate-pitted. The typical tracheids are quite long with a mean length of 1·50 mm and a mean diameter of 0·027 mm only (Fig. 1). Both the ends are tapered and they overlap each other along their length. Apart from these typical tracheids, it was not uncommon to observe some tracheary elements having specialized oblique end plates either at one or both ends, in both rhizome and root (Fig. 2). This type of tracheary elements show a close approach to vessel members; they do not have any true perforations in their end plates. Such tracheary elements have been referred to be presumptive vessels by White[6]. Furthermore, several small tracheary elements were observed in rhizome with near about transverse end plates having true openings in the centre, at one or both the ends (Figs. 3–6). These tracheary elements measure 0·66 mm in mean length; 0·048 mm in mean diameter and have dense reticulate thickenings on their lateral walls. They are similar to the true vessels as described for *Marsilea*, *Notholaena* and *Woodsia*[4–6] but do not resemble the vessel members of Gnetales, where usually the tracheary elements have a few foraminate openings at the oblique end plates. These openings fuse to form the aperture.



Figs. 1–6. Fig. 1. A typical tracheid with both the ends tapered. Fig. 2. A presumptive vessel showing oblique end plate. Figs. 3–4. True vessels showing opening on one or both ends respectively. Figs. 5–6. Terminal portions of true vessels magnified to show different size of openings.

Occurrence of vessels in *H. zeylanica* can either have a phylogenetic significance or can be correlated to the xeric habitat Presence of vessels in Angiosperms and Gymnosperms, is considered to be an advanced feature. *Pteridium* and *Marsilea* are also advanced genera of ferns but their occurrence in unspecialised genera like *Woodsia* and *Notholaena* suggests that they have developed sporad cally in Pteridophytes and have little phylogenetic significance in the group. Thus, the contention of White[6] that occurrence of vessels in Pteridophytes does not necessarily indicate a high level of advancement, gets further support from the present work. *Ophioglossum*, which is said to be highly evolved in Ophioglossales, does not show vessels. Some of the vessel bearing Pteridophytes (*i.e.*, species of *Woodsia*, *Pteridium*, *Equisetum*) are certainly plants of dry habitats but their absence from typical xerophytic ferns like *Cheilanthes*, *Ceterach*, and *Actinopteris* and their presence in certain mesophytic plants like *Selaginella* does not warrant such a conclusion.

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ISOMERISM IN FLOWERS OF *AZANZA LAMPAS* DALZ. (MALVACEAE)

THE aestivation of the corolla in species of Malvaceae[1,2], Bombacaceae[3], Euphorbiaceae[4], Caricaceae[5] and Papilionaceae[6] is distinctly twisted either to left or right in bud. In most cases this condition persists even after the opening of the flower. It has been reported that many species of Malvaceae, show the petals twisted in clockwise (left-handed or levo-rotatory) and counter clock-wise (right-handed or dextro-rotatory) fashion[1,2]. This left- and right-handed ness in any plant organ is referred to as bioisomcry[7]. Bioisomerism or isomerism is known to occur in different plant organs[5,6]. The present communication deals with isomerism in corolla of *Azanza lampas* Dalz.

The flowers of *A. lampas* are pentamerous and the five twisted petals are free to the base, where they are attached to the monoadelphous staminal tube. The individual petals are asymmetrical—a character perhaps correlated with the twisted aestivation. The petals are yellow with basal red eye and are twisted to left or right in the bud as well as in the open flower (Fig. 1). The gynoecium is pentacarpellary, superior, the stigma twisting to left or right (Fig. 2). The fruit is a capsule with 3–5 seeds in each locule.

FIGS. 1–2. Fig. 1 (left to right). Flowers showing left-handed and right-handed twisting. Fig. 2 (left to right). Staminal column with stigma—showing right-and left-handed twisting of stigma.

Numerical data regarding the handedness of corolla in 15 plants were collected on plants grown in Botanical Gardens, M.S. University, Baroda. The data are presented in Table I and shown in Fig. 1. It may be seen from the table that out of 15 plants examined 10 show excess of left-handed flowers, while the rest show more of right-handed flowers. *A lampas* like other Malvaceae species[2] also show more of left-handed flowers. On the whole, the left-handed flowers account for 53·78% of the total flowers examined as compared with the right-handed flowers (46·22%). The χ^2 (5 d.f.) value is 2·503, which is insignificant.