短 報

Artificially Produced *Akebia pentaphylla* Makino with Only Female Flowers

(Akira HASHIMOTO[a] and Nobumichi INOMATA[b])

人工交雑のゴヨウアケビの雌花のみをつける株（橋本 皓[a]，猪俣伸道[b]）

Makino (1902) suggested that *Akebia pentaphylla* was a hybrid between *A. quinata* and *A. trifoliata*. However, this has not yet been sufficiently proved experimentally. In this paper it is intended to give an evidence on Makino's hypothesis by having an artificial crossing of the putative parent species.

In April 1981, a reciprocal crossing was carried out between *A. trifoliata* and *A. quinata*. Fruits were obtained from the reciprocal crossing of both the combinations in October 1981. Then, the seeds were sown and they germinated in March 1982. The germination rate of the seeds was over 80% in crosses of both combinations. The flowers of artificial hybrids bloomed for the first time in April 1988. Among the plants obtained from a cross between *A. trifoliata* (♀) and *A. quinata* (♂), there is a strain bearing only the female flowers. On the strain female flowers appeared successively in 1989, 1990 and 1991, but no male flowers were observed.

Ten years after the seed was planted the plant grew up to about 2 m in height with its trunk about 2 cm in diameter.

Figure 1 shows young leaves of the artificially produced *A. pentaphylla*. The leaf consists of a petiole 3－10 cm in length and 3, 4, or 5 leaflets. In matured leaf, the leaflets are rounded at apex as shown in Figure 2. The leaves are ovate to broadly ovate in outline, 2－6 cm in length, 2－4 cm in width, and glabrous on both sides. The leaf edge has a few minute indentations and the leaf tip is slightly emarginate. The central leaflet is somewhat larger than lateral leaflets. Thus the leaf is similar to that of *A. pentaphylla* in nature.

The female flowers forms racemes which hang diagonally from the small branches (Fig. 3). Each raceme consists of 5－12 female flowers, which are deep purple in colour, approximately 7 mm in diameter, and each with 3－5 pistils bearing mucilaginous stigmata (Fig. 4). The calyx has 3－4 sepals. The flower is similar to that of *A. pentaphylla* in nature. When a female flower was crossed with the pollen grains of a different *A. pentaphylla* plant, an elliptical fruit was obtained in October 1990.

From the above observation, we identified that it is a female plant of *A. pentaphylla*. The genus *Akebia* is monoecious and this is the first record of female plant in this genus.

Further observation on the crossing experiment between *A. quinata* and *A. trifoliata* and on the cytological study of the F_1 hybrids will be reported elsewhere. ([a] Osaka Prefectural College of Nursing, [b] Department of Botany, College of Liberal Arts and Sciences, Okayama University).

ゴヨウアケビはアケビとミツバアケビの雑種と考えられている．それを確かめる実験の１つとして，ミツバアケビとアケビの正逆実験を試みF_1雑種を育てた．ミツバアケビ(♀)×アケビ(♂)のF_1雑種の中に雌花のみを総状につける１株が出現した．この株は，葉や雌花の形態と花色は自然にあるゴヨウアケビと似ていて，播種して６年以上を経て初めて開花し，その後は毎年春に雌花のみをつけている．雄花がつかないこと，人工授粉により果実が得られることを４年間観察した．以上からこの１株はミツバアケビとアケビの交配から人為的に合成されたゴヨウアケビの雌株と判定した．

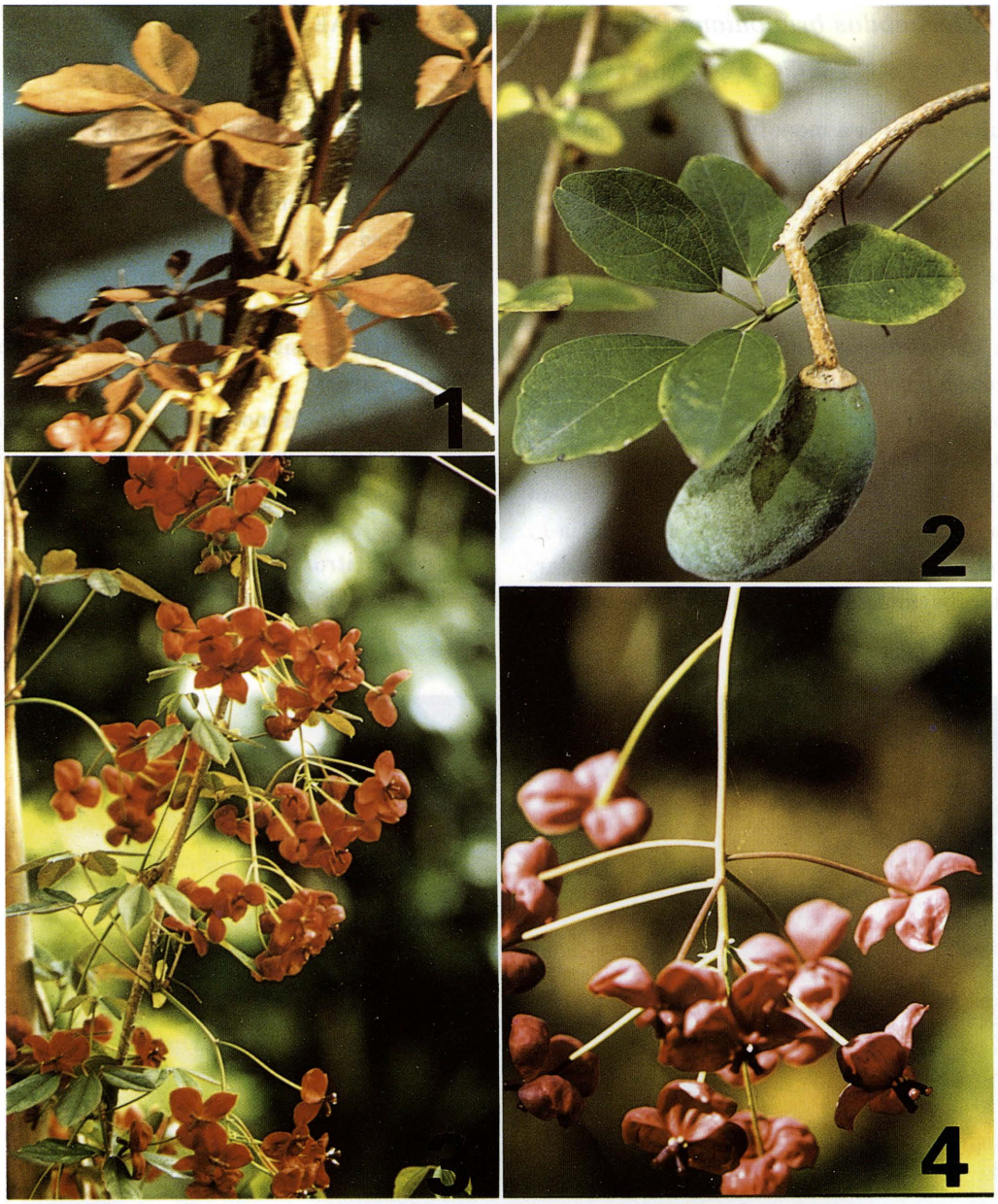

Fig. 1. Young leaves of artificially produced *A. pentaphylla*. Fig. 2. A mature leaf of the same plant of *A. pentaphylla* as shown in Figure 1. Figs. 3−4. Female flowers in full bloom of artificial *A. pentaphylla*.

([a]大阪府立看護短期大学, [b]岡山大学教養部生物学教室)

Reference

Makino T. 1902. Observations on the flora of Japan, *Akebia pentaphylla*. Bot. Mag. Tokyo **16** : 30−31.