SHORT COMMUNICATIONS

Iridodiols, the Effective Components of Actinidia Polygama for Chrysopidae

By Takeo SAKAN, Sachihiko ISOE, Suong Be HYEON, Teiichi ONO and Ichirō TAKAGI

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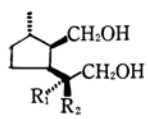
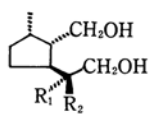
In previous papers[1] we reported the structures of matatabilactone and actinidine, the effective components of *Actinidia Polygama* Miq. for Felidae animals. It has been privately communicated[2] that the male of a sort of lacewing (*Chrysopa septempunctata* Wesmael)[3] is also attracted by the same plant. Attempts have now been made to isolate the effective component from the gall of *Actinidia Polygama* Miq. The elaborate column chromatography on alumina and silicic acid of the neutral fraction extracted from the ground gall with

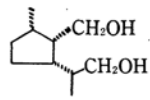
1) T. Sakan, A. Fujino, F. Murai, Y. Butsugan and A. Suzui, This Bulletin, **32**, 315, 1155 (1959).

2) Private communications from Dr. E. Kezuka of Tōyō University, Dr. S. Ishii of Kyoto University, and Dr. H. Furukawa of Tokyo Gakugei University; G. Takagi, *Nōgyō* (*J. Agr. Soc. Japan*), **No. 802**, 33 (1950). Dr. S. Ishii, presented at The Annual Meeting of The Society of The Japanese Applied Entomology and Zoology, Tokyo, April, 1964.

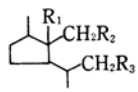
3) We have observed that *Chrysopa japana* Okamoto also is attracted by *Actinidai Polygama*.


I


II


III

α: R_1=Me, R_2=H β: R_1=H, R_2=Me
δ: R_1=H, R_2=Me γ: R_1=Me, R_2=H



IV: R_1=R_2=H, R_3=OH
V: R_1=R_3=H, R_2=OH
VI: R_1=R_3=OH, R_2=H

methanol yielded an oil which had a potent activity. Although the vapor phase chromatography of this oil revealed three close peaks and the thin layer chromatography of this oil gave two spots, the mass spectrum and the infrared spectrum of this oil were in close agreement with those of α-iridodiol (I),[4] m. p. 80°C, derived from isoiridomyrmecin by lithium aluminum hydride reduction. Therefore, this seemed to be a mixture of α-iridodiol and its stereoisomers. In fact, the α-iridodiol derived from isoiridomyrmecin showed activity of almost the same order for *Chrysopa* as for the oil obtained above.

Fortunately we could assign all peaks in the vapor-phase chromatography of the oil as α or δ-iridodiol (I),[4] β or γ-iridodiol (II)[5] and all *cis*-iridodiol (III)[6] by a comparison of the retention times. The isolation of each effective component is in progress. In addition to iridodiols, the synthetic alcohols IV, V, and VI[6] also showed activity of a much lower order.

Faculty of Science
Osaka City University
Sumiyoshi-ku, Osaka

4) Greek prefixes in the designation of skytanthine series were used for the nomenclature of iridodiols. E. J. Eisenbraun, T. George, B. Riniker and C. Djerassi, *J. Am. Chem. Soc.*, **82**, 3648 (1960); E. J. Eisenbraun, A. Bright and H. H. Appel, *Chem. & Ind.*, **1962**, 1242.

5) Prepared by the lithium aluminum hydride reduction of the corresponding nepetalinic acids kindly supplied by Dr. E. J. Eisenbraun of Oklahoma State University.

6) Unpublished work.

7) Unpublished work.