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Isolation of Insect Moulting Substances from *Osmunda japonica* and *Osmunda asiatica*

During our screening tests on vegetable materials by means of bioassay, it has been noticed that the crude extracts of ferns especially show insect-moulting hormone activity in high frequency. Therefore, we have investigated the constituents of varieties of ferns whose extracts exhibit the biological activity, and isolated a number of active steroids.¹⁾ We have further observed that the methanol extracts of *Osmunda japonica* THUNBERG and *O. asiatica* OHWI²⁾ (Osmundaceae) grown in Japan are positive in the *Sarcophaga* assay. The polar fraction of each extract was submitted to column chromatography resulted in the isolation of the following substances: ponasterone A, mp 266—268°, ecdysone, mp 241.5—242°, and ecdysterone, mp 239—240°, from *O. japonica*, and ponasterone A, mp 260—261°, ecdysone, mp 243—244°, and ecdysterone, mp 242—243°, from *O. asiatica*.

It is of interest to note that the known plant sources of ecdysone, the first insect-moulting hormone, are all ferns, *Pteridium aquilinum* KUHN,³⁾ *Polypodium vulgare* LINNÉ,⁴⁾ and *Lemma-phyllum microphyllum* PRESL.^{1a)}

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