

with the scales detached from wing were provided. From these observations, it was suggested that the scale played some important role in evoking the copulation attempt. When using the paper models stuck the fore wings from which almost all scales were removed, the percentage of copulation attempts was fallen significantly ($P < 0.05$).

Then, what kind of stimulus of scales induce copulation attempt? For the purpose of finding it, several kinds of models were prepared. Those include the paper models covered with scales of *P. operculella* which were homogenized with distilled water in a glass homogenizer (powdered scales) and those coated with colorless adhesive which contained scales (scales kneaded with adhesive). The scales of *P. operculella* washed by acetone and chloroform and those of other species (*Cadra cautella* and *Chilo suppressalis*) were also used as covering of paper models. Powdered scales or the scales kneaded with adhesive had no effect as a releaser for copulation attempt, while the scales washed by acetone and chloroform or those of two other species showed similar effect as untreated scales of *P. operculella*. Therefore, the induction of copulation attempt seemed to owe to a physical structure of scales rather than their chemical nature.

Concluding Remarks

Some workers have reported that scales played important roles in mating behavior of lepidopterous insects by means of light reflection⁴⁾, or by release of some chemicals⁵⁾. Also, Hidaka (1972)⁶⁾, working with mating behavior of *Hyphantria cunea*, suggested the importance of contact-chemical inspection with antennae as the final step of species recognition. Result obtained from this experiment strongly suggest that the contact with scales is one of the releasers for the evocation of copulation attempt at least in male *P. operculella*.

Acknowledgement: The author thanks Drs. T. Saito and S. Iwao, Laboratory of Applied Entomology and Nematology, Nagoya University, for their helpful advices and criticisms.

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抄 録

ワタアカミムシの性誘引物質

The Pink Bollworm Sex Attractant: B.A. Bierl, M. Beroza, R. T. Staten, P. E. Sonnet, V. E. Adler, *J. Econ. Entomol.*, 67 (2) 211 (1974).

ワタアカミムシの性フェロモンをEAG法を指標として検討し、Hummelらの結果を再確認した。すなわち雌抽出物をケン化、アセチル化後クロマトグラフ法で精製し、性フェロモン75 μ gを得た。水素化分解、

オゾン分解および質量分析の結果から、7,11-hexadecadien-1-olと決定した。合成4幾何異性体と天然化合物のガスクロマトグラフ法分析の結果、フェロモンはZ, E-およびZ, Z-異性体の等量混合物と判明した。4幾何異性体を単独および種々の組合わせについて野外試験した結果、Z, E-とZ, Z-異性体の等量混合物が最も強い誘引性を示した。

(桑原保正)