

CORRECTION OF THE SOURCE OF "AFFININ"
(N-ISOBUTYL-2,6,8-DECATRIENOAMIDE)

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The isolation of an insecticidal amide from the roots of a Mexican plant submitted to the Bureau of Entomology and Plant Quarantine in 1943 and 1944 as *Erigeron affinis* DC. (common name "peritre del pais" or "chilcuan") and its identification as N-isobutyl-2,6,8-decatrienoamide have been reported in two previous papers (1, 2). The name "affinin" was proposed for this amide after

TABLE I
COMPARISON OF PHYSICAL CONSTANTS AND TOXICITY TO HOUSE FLIES OF "AFFININ" AND
DISTILLATE FROM *Heliopsis longipes*

| SUBSTANCE | B.P. (0.3 mm.) | n _D ²⁰ | TOXICITY TO HOUSE FLIES | | |
|---|-------------------|------------------------------|-------------------------|-------------------------|-----------------------|
| | | | Concn. of plant | Knockdown in 10 min. | Mortality in 1 day |
| | | | Mg./ml. | Percent | Percent |
| | °C | | | | |
| "Affinin" | 160-162 | 1.5128 | 122.8 | 100 | 39 |
| Pyrethrins standard (1 mg./ml.) | | | | 100 | 40* |
| Distillate from <i>H. longipes</i> roots | 160-162 | 1.5125 | 122.8 | 100 | 21 |
| Pyrethrins standard (2 mg./ml.) | | | | 100 | 13* |

* Different broods of flies.

several unsuccessful attempts were made to obtain an authentic botanical specimen for positive identification.

In 1946 Elbert L. Little, Jr., of the Foreign Economic Administration, called attention (unpublished report) to the confusion in the botanical classification of Mexican "peritre del pais" ("native pyrethrum") and pointed out that the plant was actually *Heliopsis longipes* (A. Gray) Blake (family *Compositae*), common name "chilcuague" or "chilcuan."

Recently authentic *Heliopsis longipes* roots, obtained from Mexico through the Office of Defense Supplies, Reconstruction Finance Corporation, were extracted with petroleum ether, and the extract was worked up by the nitromethane and charcoal procedure previously used to obtain "affinin" (1). Upon distillation of the nitromethane-soluble product, 0.56% (dry-root basis) of a pale-yellow oil was obtained, which crystallized in the cold. It was shown to be N-isobutyl-2,6,8-decatrienoamide by comparison of the physical constants and toxicity to house flies with these properties of "affinin" (Table I).¹ Further proof of its identity

¹ The tests against house flies were made by W. A. Gersdorff of this Bureau.

was obtained by hydrogenation of the oil, and by the isolation of isobutylamine and capric acid from the reaction mixture resulting from the hydrolysis of the hydrogenated oil.

It is proposed that the use of the name "affinin" for N-isobutyl-2,6,8-decatrienoamide obtained from this plant be discontinued.

SUMMARY

It has been shown that the botanical source of the insecticidal amide N-isobutyl-2,6,8-decatrienoamide is *Heliopsis longipes* (A. Gray) Blake instead of *Erigeron affinis* DC.

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REFERENCES

- (1) ACREE, JACOBSON, AND HALLER, *J. Org. Chem.*, **10**, 236 (1945).
- (2) ACREE, JACOBSON, AND HALLER, *J. Org. Chem.*, **10**, 449 (1945).