Studies Related to Naturally Occurring Acetylene Compounds

XXVIII. A Note on the Occurrence of Pontica Epoxide in the Genus Achillea L.

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In a recent paper Bohllmann, Arndt and Boronowski have described the isolation of the polyacetylenic epoxide $C_2H_3O$ (I) from four different Artemisia species. After the first isolation from A. pontica L. the substance has been named "pontica epoxide". Some 100 members of the trubus Anthemideae of the Compositae are stated to have been investigated. Outside the genus Artemisia pontica epoxide was isolated only from three members of the genus Chrysanthenum (viz. serotinum L., boreale L. and vulgare Bernh.) and Gladanthus arabicus Cars.

A substance with the same properties as I had been isolated in our laboratory some years ago, from some members of the genus Achillea, also a member of the trubus Anthemideae. The m.p. and U.V. maxima are given below together with those of pontica epoxide.

Pontica epoxide

m.p. 66°

Achillea ptarmica

60—63°

A. atrata * clusiana

62—62.5°

U.V.-maxima

3 335 3 115 2 920 2 755 2 505 (2 435)

3 335 3 112 2 928 2 756 2 510 (2 415)

3 345 3 130 2 930 2 765 2 500 2 400

The U.V. absorption curves are conform in height of all the 6 maxima and the 5 minima.

Bohllmann et al. have reported the infrared spectrum of pontica epoxide in carbon tetrachloride solution. Our measurements on the compound from the above mentioned Achillea species are in chloroform and in carbon disulfide. The small differences between the three spectra may be due to the effect of the solvents.

In five other Achillea species no I could be demonstrated. Besides some unknown polyacetylenes some members of this genus contained cis- and trans-dehydratricarayer.

Details of our investigations will be presented in another contribution to this journal.

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