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NEOLIGNANS FROM *ANIBA CITRIFOLIA**

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Abstract—The trunk wood of *Aniba citrifolia* contains hydrobenzofuranoid and bicyclo[3.2.1]octanoid neolignans.

The vouchers of the specimens used in our previous phytochemical work on the genus *Aniba* were re-examined in the light of Kubitzki's recent revision [2] and the analysed species reclassified accordingly whenever possible and necessary [3]. An important result of this re-evaluation of all previous plant identifications was the recognition of coherent chemical, morphological, anatomical and geographical trends [3–5] within the genus. Kubitzki [2] distinguishes two groups of genera, the *affinis* group (15 spp.) and the *guianensis* group (26 spp.). All of the analysed species of the former contain neolignans (*A. affinis*, *A. burchellii*, *A. lancifolia*, *A. terminalis*, *A. williamsii*). Most of the analysed species of the *guianensis* group contain pyrones (*A. kappleri*, *A. santalodora*, *A. panurensis*, *A. parviflora*, *A. cylindriflora*, *A. permollis*, *A. heringerii*, *A. firmula*), pyrones and flavonoids (*A. rosaeodora* and *A. duckei*, the latter now merged under the former binomial [2], *A. coto* and *A. pseudo-coto*, the validity of the latter binomial now being questioned [2]) or flavonoids (*A. riparia*) [6]. Only two exceptions have been reported so far. *A. megaphylla* and *A. ferrea*, although assigned to the *guianensis* group, contain neolignans. The fact that these are biosynthetically highly modified in comparison with the simple neolignans of the *affinis* group may be of significance.

The present work concerns *A. citrifolia* (Nees) Mez from the coastal dunes of Ataléia, Municipality of Salinópolis, Pará State. Wood was collected from a small tree identified by Professor K. Kubitzki, Hamburg University (voucher Kubitzki 79-257, RB, HBG). As expected, since the species belongs to the *affinis* group, it contains the simple neolignans *rel*-(2*S*,3*S*,5*R*)-5-allyl-5-methoxy-2-(3,4,5-trimethoxyphenyl)-3-methyl-2,3,5,6-tetrahydro-6-oxobenzofuran (**1**) and *rel*-(1*S*,5*S*,6*R*,7*R*,8*S*)-1-allyl-8-hydroxy-3,5-dimethoxy-6-(3-methoxy-4,5-methylenedioxyphenyl)-7-methyl-4-oxo-bicyclo[3.2.1]oct-2-ene (**2a**). Both compounds had already been obtained previously, **1** from an *Aniba* species (voucher INPA Herbarium 42237) [7] now classified as *A. williamsii* [3], *Nectandra miranda* [8] and another *Nectandra* species [9]; and **2a** from *Aniba ferrea* [10] and as the *O*-methyl derivative of **8b** from '*A. simulans*' (voucher INPA Herbarium 46800) [11] now classified as *A. williamsii* [3].

*Part LXXIV in the series "The Chemistry of Brazilian Lauraceae." For Part LXXIII see ref. [1].

EXPERIMENTAL

Isolation of constituents. Dried, powdered trunk wood of *A. citrifolia* (2 kg) was percolated with $CHCl_3$. The extract (7 g) was chromatographed on silica gel (250 g). $CHCl_3$ containing gradually increasing proportions of MeOH eluted, in order, fatty material (2.9 g), sitosterol (1 g), **1** (106 mg after TLC purification), a mixture of **1** with other neolignans (0.3 g) and **2a** (120 mg after TLC purification). **1** and **2a** were identified by direct comparison with authentic samples.

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REFERENCES

1. Rodrigues, M. M. de M., Fernandes, J. B., Braz F°, R., Yoshida, M. and Gottlieb, O. R. (1984) *Phytochemistry* **23**, 667.
2. Kubitzki, K. (1982) *Flora Neotropica*, Monograph No. 31, p. 1. The New York Botanical Garden, New York.
3. Gottlieb, O. R. and Kubitzki, K. (1981) *Biochem. Syst. Ecol.* **9**, 5.
4. Gottlieb, O. R. and Kubitzki, K. (1981) *Plant Syst. Evol.* **137**, 281.
5. Gottlieb, O. R. (1982) *Micromolecular Evolution, Systematics and Ecology*, p. 135. Springer, Heidelberg.
6. Cavalcante, S. de H., Rocha, A. I. da, Yoshida, M. and Gottlieb, O. R. (1982) *Acta Amazonica* (*Manaus*) **12**, 377.
7. Aiba, C. J., Fernandes, J. B., Gottlieb, O. R. and Maia, J. G. S. (1975) *Phytochemistry* **14**, 1597.
8. Aiba, C. J., Gottlieb, O. R., Pagliosa, F. M., Yoshida, M. and Magalhães, M. T. (1977) *Phytochemistry* **16**, 745.
9. Braz F°, R., Figliuolo, R. and Gottlieb, O. R. (1980) *Phytochemistry* **19**, 659.
10. Andrade, C. H. S., Braz F°, R. and Gottlieb, O. R. (1980) *Phytochemistry* **19**, 1191.
11. Alvarenga, M. A. de, Castro C., O., Giesbrecht, A. M. and Gottlieb, O. R. (1977) *Phytochemistry* **16**, 1801.