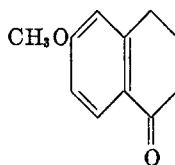


III



IV

The often described routine carbazole synthesis (9), applied to the latter ketone and the appropriate arylhydrazines, gave 3'-methoxy-1,2-benzocarbazole, 3'-methoxy-6-methyl-1,2-benzocarbazole, 3'-methoxy-1,2,5,6-dibenzocarbazole, and 3'-methoxy-1,2,7,8-dibenzocarbazole.

All of the hydroxy compounds prepared are colorless alkali-soluble substances, now under biological investigation by Professor A. Lacassagne; in view of the high bactericidal activity of 3,4,5,6-dibenzocarbazole against staphylococci (10), they are also being tested for potential antibiotic properties.

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EXPERIMENTAL²

6-Methoxy-1-tetralone. This ketone was synthesized from tetralin according to the literature (11). It melted at 79°, and its *semicarbazone* formed (from ethanol) silky lustrous needles, m.p. 244°. Papa (12) gave m.p. 75–77° for the ketone, and m.p. 235.5–236.5° for the semicarbazone.

3'-Methoxy-3,4-dihydro-1,2-benzocarbazole. Prepared in the usual way by indolization of the phenylhydrazone of ketone IV; crystallized from benzene in colorless needles, m.p. 169°; light yellow coloration with sulfuric acid, and violet *picrate*.

Anal. Calc'd for C₁₇H₁₅NO: N, 5.6. Found: N, 5.5.

3'-Methoxy-1,2-benzocarbazole. Formed from benzene in colorless needles m.p. 245°; deep yellow coloration with sulfuric acid.

Anal. Calc'd for C₁₇H₁₃NO: N, 5.6. Found: N, 5.4.

3'-Hydroxy-1,2-benzocarbazole. A solution of 0.5 g. of the foregoing compound in 3 g. of redistilled pyridine hydrochloride was gently boiled for five minutes; water was added after cooling, and the precipitate thus obtained filtered off and recrystallized from xylene. Yield, 0.35 g. of colorless prisms m.p. 265°, slightly soluble in water; deep yellow coloration with sulfuric acid.

Anal. Calc'd for C₁₆H₁₁NO: N, 6.0. Found: N, 5.9.

3'-Methoxy-6-methyl-3,4-dihydro-1,2-benzocarbazole. From the *p*-tolylhydrazone of ketone IV; formed from benzene colorless needles, m.p. 191°; yellow coloration with sulfuric acid.

Anal. Calc'd for C₁₈H₁₇NO: N, 5.3. Found: N, 5.2.

3'-Methoxy-6-methyl-1,2-benzocarbazole. Crystallized from xylene in shiny colorless prisms, m.p. 285°; orange-yellow coloration with sulfuric acid.

Anal. Calc'd for C₁₈H₁₅NO: N, 5.3. Found: N, 5.2.

3'-Hydroxy-6-methyl-1,2-benzocarbazole. Shiny colorless leaflets, m.p. 295°; this compound and the eight following ones gave an orange-yellow coloration with sulfuric acid.

² All melting points are uncorrected and were taken with a Maquenne block.

Anal. Calc'd for $C_{17}H_{13}NO$: N, 5.6. Found: N, 5.3.

2'-Hydroxy-6-methyl-1,2-benzocarbazole. Gray-tinged shiny leaflets (from xylene), m.p. 275°.

Anal. Calc'd for $C_{17}H_{13}NO$: N, 5.6. Found: N, 5.4.

2'-Hydroxy-3'-methyl-1,2-benzocarbazole. Shiny colorless leaflets (from xylene), m.p. 297°.

Anal. Calc'd for $C_{17}H_{13}NO$: N, 5.6. Found: N, 5.6.

1'-Methyl-4'-hydroxy-1,2-benzocarbazole. Slightly yellowish needles (from toluene), m.p. 224–225°.

Anal. Calc'd for $C_{17}H_{13}NO$: N, 5.6. Found: N, 5.3.

2'-Hydroxy-5,8-dimethyl-1,2-benzocarbazole. Slightly gray-tinged needles (from water), m.p. 227–228°.

Anal. Calc'd for $C_{19}H_{15}NO$: N, 5.3. Found: N, 5.2.

2'-Hydroxy-3,6-dimethyl-1,2-benzocarbazole. Shiny colorless leaflets (from xylene), m.p. 330°.

Anal. Calc'd for $C_{18}H_{14}NO$: N, 5.3. Found: N, 5.0.

2'-Methoxy-3,4-dihydro-1,2-benzocarbazole. Obtained from the phenylhydrazone of 7-methoxy-1-tetralone; formed (from benzene) in colorless needles, m.p. 131°.

Anal. Calc'd for $C_{17}H_{13}NO$: N, 5.6. Found: N, 5.4.

2'-Methoxy-1,2-benzocarbazole. Crystallized from benzene in colorless microscopic needles, m.p. 190°.

Anal. Calc'd for $C_{17}H_{13}NO$: N, 5.6. Found: N, 5.5.

2'-Hydroxy-1,2-benzocarbazole. Formed (from water) colorless leaflets, m.p. 246°; this compound and the two preceding ones gave a yellow coloration with sulfuric acid.

Anal. Calc'd for $C_{16}H_{11}NO$: N, 6.0. Found: N, 5.8.

3'-Methoxy-3,4-dihydro-1,2,5,6-dibenzocarbazole. From the β -naphthylhydrazone of ketone IV; colorless needles from benzene, m.p. 190–191°, giving with sulfuric acid an orange coloration.

Anal. Calc'd for $C_{21}H_{17}NO$: N, 4.7. Found: N, 4.5.

3'-Methoxy-1,2,5,6-dibenzocarbazole. Formed from xylene graytinged microcrystals, m.p. 293°; orange-red coloration with sulfuric acid.

Anal. Calc'd for $C_{21}H_{15}NO$: N, 4.7. Found: N, 4.6.

3'-Hydroxy-1,2,5,6-dibenzocarbazole. Microscopic colorless needles from xylene, m.p. 303°; same coloration with sulfuric acid as the above.

Anal. Calc'd for $C_{20}H_{13}NO$: N, 4.9. Found: N, 4.6.

2'-Hydroxy-3'-methyl-1,2,5,6-dibenzocarbazole. Shiny colorless leaflets from xylene, m.p. 309–310°; brownish-red coloration with sulfuric acid.

Anal. Calc'd for $C_{21}H_{15}NO$: N, 4.7. Found: N, 4.5.

1'-Methyl-4'-hydroxy-1,2,5,6-dibenzocarbazole. Colorless microscopic needles from xylene, m.p. 265°; violet-red coloration with sulfuric acid.

Anal. Calc'd for $C_{21}H_{15}NO$: N, 4.7. Found: N, 4.4.

3'-Methoxy-3,4-dihydro-1,2,7,8-dibenzocarbazole. From the α -naphthylhydrazone of ketone IV; colorless needles from benzene, m.p. 169°, giving an orange coloration with sulfuric acid.

Anal. Calc'd for $C_{21}H_{17}NO$: N, 4.7. Found: N, 4.6.

3'-Methoxy-1,2,7,8-dibenzocarbazole. Formed from benzene colorless microscopic needles, m.p. 235°; red coloration with sulfuric acid.

Anal. Calc'd for $C_{21}H_{15}NO$: N, 4.7. Found: N, 4.5.

3'-Hydroxy-1,2,7,8-dibenzocarbazole. Colorless needles from xylene, m.p. 255°; deep red coloration with sulfuric acid.

Anal. Calc'd for $C_{20}H_{13}NO$: N, 4.9. Found: N, 4.8.

1'-Methyl-4'-hydroxy-1,2,7,8-dibenzocarbazole. Colorless needles from xylene, m.p. 311°; brown coloration with sulfuric acid.

Anal. Calc'd for $C_{21}H_{15}NO$: N, 4.7. Found: N, 4.8.

SUMMARY

1. Several carbazole syntheses from 6-methoxy-1-tetralone have been performed.
2. A series of polycyclic carbazoles bearing phenolic groups has been prepared by demethylation of the corresponding methoxy compounds with pyridine hydrochloride.

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