TABLE II

5-SUBSTITUTED 5-(2-NAPHTHYL)HYDANTOINS

R	Mp, °C[a]	Yield, %	Calcd, % C	Calcd, % H	Calcd, % N	Found, %[b] C	Found, %[b] H	Found, %[b] N
CH_3	247–248	83	69.99	5.04	11.66	70.31	4.97	11.53
n-C_3H_7	239–240	78	71.62	6.01	10.44	71.84	6.09	10.30
i-C_3H_7	261–263	72	...	...	10.44	...	...	10.29
n-C_4H_9	201–202	76	72.32	6.43	9.92	72.21	6.49	9.85
i-C_4H_9	217–218	69	...	...	9.92	...	...	10.04
sec-C_4H_9	256–257	57	...	...	9.92	...	...	10.01
t-C_4H_9	292–293 dec	43	72.32	6.43	9.92	71.99	6.42	10.09
n-C_5H_{11}	188–189	72	72.95	6.80	9.45	72.96	6.66	9.39
i-C_5H_{11}	244–245	87	...	...	9.45	...	...	9.32
n-C_6H_{13}	177–178	85	...	...	9.03	...	...	9.01
n-C_7H_{15}	167–168	95	...	...	8.63	...	...	8.74
n-C_8H_{17}	169–170	64	...	...	8.27	...	...	8.24
n-$C_{10}H_{21}$	167–168	73	...	...	7.65	...	...	7.62
n-$C_{12}H_{25}$	169–170	70	...	...	7.10	...	...	7.09
C_6H_5	281–282	63	...	...	9.27	...	...	9.32
1-$C_{10}H_7$	323–324	68	78.39	4.58	7.95	77.82	4.29	8.33
2-$C_{10}H_7$	313–314	64	78.39	4.58	7.95	78.39	4.51	7.92

[a] All melting points were determined by the capillary method and are corrected. [b] Carbon, hydrogen, and nitrogen microanalyses were performed by the Huffman Laboratories, Inc., Wheatridge, Colo.

Heterocycles. II.[1] Synthesis of 3-Carbomethoxy-3-methyl-7,8-benzothiochromanone

TOSIO MORIWAKE

Department of Industrial Chemistry, School of Engineering, Okayama University, Okayama, Japan

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During an attempted syntheses of 11-thia steroid homologs, the title compound was synthesized as an intermediate. The method of synthesis is analogous to the route used by Bachmann, *et al.*,[2] for the preparation of equilenin.

Experimental Section

Methyl 7,8-Benzothiochromanone-3-glyoxalate.—To a suspension of 3.2 g of sodium methoxide in 40 ml of benzene was added 7.1 g of dimethyl oxalate, and the mixture was refluxed for 10 min. To the ice-cooled solution was added a solution of 6.4 g of 7,8-benzothiochromanone[3] in 70 ml of benzene over a 10-min period, and the mixture was stirred at room temperature for 4 hr. Within a few minutes a light red solution resulted, which soon deposited a light yellow precipitate. The mixture was hydrolyzed with 100 ml of water. The benzene solution which separated was extracted twice with 60 ml of 2% NaOH solution and the combined aqueous solution was acidified with dilute HCl. The light yellow crystals were filtered off and dried. Recrystallization from ethanol gave 7.3 g (81%) of glyoxalate as pale yellow clusters which melted at 107–109°. Further recrystallizations from alcohol gave a pure sample of mp 108.5–109.5°.

Anal. Calcd for $C_{16}H_{12}O_4S$: C, 64.00; H, 4.03. Found: C, 64.08; H, 4.10.

3-Carbomethoxy-7,8-benzothiochromanone.—A mixture of 7.0 g of the above-mentioned glyoxalate and 3.5 g of powdered soft glass was heated at 180–200° for 1 hr with occasional stirring. After cooling, the dark brown product was dissolved in a mixture of benzene and acetone (1:1), and the solution was decanted from the glass. The solution was evaporated, and the residue was digested with methanol, whereupon crystallization took place. Recrystallization from ethyl acetate gave 5.1 g of product, mp 114–116°, as yellow needles.

Anal. Calcd for $C_{15}H_{12}O_3S$: C, 66.17; H, 4.44. Found: C, 66.21; H, 4.52.

3-Carbomethoxy-3-methyl-7,8-benzothiochromanone.—A warm solution of 3.6 g of 3-carbomethoxy-7,8-benzothiochromanone in 30 ml of benzene was added to a solution of sodium methoxide prepared from 1.6 g of sodium and 30 ml of methanol. The mixture was refluxed for 2 hr, cooled, and treated with 4 ml of methyl iodide. After 1 hr at room temperature, an additional 4 ml of methyl iodide was added. The resulting mixture was stirred at room temperature for 30 min, then refluxed for 2 hr, cooled, neutralized with acetic acid, and evaporated nearly to dryness. The residue was treated with benzene and water, and the organic solution after separating was washed with 5% NaOH solution with water, dried, and evaporated. Recrystallization of the residue from ethanol gave 3.5 g (92%) of the product, mp 112–113°, as tan needles.

Anal. Calcd for $C_{16}H_{14}O_3S$: C, 67.12; H, 4.93. Found: C, 67.30; H, 5.14.

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Synthesis of Some 3-Arylacetyl- and 1,3-Di(arylacetyl)indoles[1]

THOMAS E. YOUNG AND MICHAEL F. MIZIANTY[2]

William H. Chandler Chemistry Laboratory, Lehigh University, Bethlehem, Pennsylvania

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The recent demonstration of anticonvulsant activity[3] of certain 3-acylindoles has prompted us to report eighteen new 3-arylacetylindoles, of which compounds Ia–n (Table I) were all prepared by acylation of the corresponding indolylmagnesium bromides with the appropriate arylacetyl chloride, a method first described by Oddo[4] and briefly elaborated by others.[5] The 1,3-diacyl derivatives (II) were also produced as coproducts, and could be obtained pure in several cases (Table II). The 3-arylacetyl-2-methylindoles (Io–r, Table I) were prepared by reac-

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