

needles (5 g.), m. p. 177° (Found: C, 82.8; H, 4.8%); its picrate formed from toluene orange-yellow prisms, decomp. above 210°.

N-*o*-Fluorophenyl- β -naphthylamine.—*o*-Fluoroaniline (10 g.), β -naphthol (10 g.), and iodine (0.2 g.) were refluxed for 8 hours, and worked up in the usual way; the secondary amine obtained (15 g.; b. p. 251—253°/16 mm.) crystallised from methanol as colourless needles, m. p. 82° (Found: C, 81.1; H, 5.2%).

9-Fluoro-5-methyl-3:4-benzacridine.—This fluoro-compound formed from ethanol fine yellowish needles, m. p. 170—171° (Found: C, 82.7; H, 4.8%); its picrate crystallised from benzene as deep yellow prisms, decomp. above 200°.

4-Fluoro-3-methylacetophenone.—A solution of *o*-fluorotoluene (30 g.) and acetyl chloride (22 g.) in dry carbon disulphide (150 c.c.) was treated with powdered aluminium chloride (46 g.), and the mixture obtained kept at room temperature for 24 hours and then refluxed for 2 hours. After the usual treatment, the ketone was obtained as a colourless liquid, b. p. 214—215° (32 g.; 78%) (Found: C, 71.0; H, 5.9. C_9H_9OF requires C, 71.1; H, 5.9%); the semicarbazone crystallised from ethanol as leaflets, m. p. 221° (Found: N, 19.8. $C_{10}H_{12}ON_3F$ requires N, 20.1%), and the oxime from ethanol as needles, m. p. 79° (Found: C, 64.4; H, 6.1. $C_9H_{10}ONF$ requires C, 64.7; H, 6.0%).

4-Fluoro-3-methylbenzoic Acid.—4-Fluoro-3-methylacetophenone (10 g.) was oxidised with ice-cold aqueous sodium hypobromite [made from bromine (22 c.c.) and sodium hydroxide (42 g.)]; the resultant acid crystallised from benzene as colourless leaflets, m. p. 168—169° (Found: C, 62.2; H, 4.8. $C_8H_7O_2F$ requires C, 62.3; H, 4.5%); 4-fluoro-3-methylbenzoyl chloride (2.8 g.), prepared from the acid (4 g.) and thionyl chloride (3.5 g.), was a colourless liquid, b. p. 110—115°/20 mm. (Found: C, 55.2; H, 3.4. C_8H_7OCIF requires C, 55.5; H, 3.5%).

4-Fluoro-3-methylaniline.—A cooled solution of 4-fluoro-3-methylacetophenone oxime (2 g.) in anhydrous ether was treated with finely powdered phosphorus pentachloride (2.1 g.) with shaking; after 5 minutes, the mixture was poured on ice, the ethereal layer collected, washed with aqueous sodium carbonate, dried (Na_2SO_4), and freed from solvent, and the solid residue recrystallised from ether-light petroleum; 4-fluoro-3-methylacetamide (1.8 g.) formed colourless leaflets, m. p. 74° (Found: C, 64.6; H, 6.1. $C_9H_{10}ONF$ requires C, 64.7; H, 6.0%). 4-Fluoro-3-methylaniline hydrochloride was prepared by heating this amide for 2 hours with hydrochloric acid; the solid hydrochloride obtained gave on basification 4-fluoro-3-methylaniline, crystallising from light petroleum as prisms, m. p. 35° (Found: C, 67.0; H, 6.3. C_7H_8NF requires C, 67.2; H, 6.4%); it was best characterised by its condensation product with 2:3-dichloro-1:4-naphthaquinone: 2-chloro-3-(4-fluoro-3-methylanilino)-1:4-naphthaquinone crystallised from ethanol as red leaflets, m. p. 216° (Found: C, 64.5; H, 3.8. $C_{17}H_{11}O_2NClF$ requires C, 64.7; H, 3.5%).

N-(4-Fluoro-3-methylphenyl)- β -naphthylamine.—The amine crystallised from methanol as colourless leaflets (90% yield), m. p. 83° (Found: N, 5.5. $C_{17}H_{14}NF$ requires N, 5.6%).

7-Fluoro-5:8-dimethyl-3:4-benzacridine.—This benzacridine formed from ethanol pale yellow needles, m. p. 175°, b. p. 290—292°/18 mm. (Found: C, 82.6; H, 5.0. $C_{19}H_{14}NF$ requires C, 82.9; H, 5.1%); its picrate crystallised from xylene as deep yellow needles, m. p. 250° (decomp. above 210°) (Found: N, 11.3. $C_{25}H_{17}N_4O_7F$ requires N, 11.6%).