broadening effect is observed, the line width being 0.9 gauss (Fig. 1b). The bonding of the cation to the polyelectrolyte anion can thus be directly studied.

Detailed studies of different humic acids, more or less fractionated by common methods, have been initiated and the results will be reported later.

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Note on the Optical Resolution of α-(3-Nitrophenoxy)-propionic Acid

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The resolution of the three α-nitrophenoxy-propionic acids has been described by Fourneau and Sandulesco,[1] but they found no method for isolating the (+)-form of the 3-nitrophenoxy acid. In connection with work on steric effects in synthetic growth regulators,[2] we needed both forms of the acid: various substituted phenoxy-propionic acids can be obtained from the nitro derivatives *via* reduction and diazonium reactions.

Preliminary experiments with conventional bases gave negative results, but the acid could be resolved with optically active β-phenyl-isopropylamine (benzedrine). The first crystallisation of the salt from dilute ethanol gives an acid containing about 45 % of active form with the same direction of rotation as the amine used. Maximum activity is easily obtained by recrystallisation of the salt. For practical purposes it may, however, be most convenient to isolate the (−)-form *via* the strychnine salt as described by Fourneau and Sandulesco.[1]

Experimental. Laevorotatory acid was prepared *via* the strychnine salt.[1] From the mother liquors after this salt, an acid having $[\alpha]_D^{25}$ about +20° was isolated. This acid (24.7 g, 0.117 mole) was dissolved with 15.8 g (0.117 mole) (+)-β-phenyl-isopropylamine in 45 ml ethanol + 100 ml water. The salt was recrystallised to constant activity of the acid (measured in absolute ethanol on samples isolated from the successive salt fractions; see Table 1).

The acid was isolated in the conventional way and recrystallised three times from carbon tetrachloride (once with charcoal). It formed pale yellow needles with m.p. 100–101°. 0.2210 g in 10.00 ml abs. ethanol: $\alpha_D^{25} = +2.283°$ (2 dm). $[\alpha]_D^{25} = +51.65°$. The rotation was practically unchanged when the same solution was investigated at 20°C.

The (−)-form isolated according to Ref. 1 was quite similar to the (+)-form. M.p. 100–101°. 0.2202 g in 10.00 ml abs. ethanol: $\alpha_D^{25} = -2.276°$ (2 dm). $[\alpha]_D^{25} = -51.68°$.

Table 1.

Crystallisation	1	2	3	4	5
ml ethanol	45	25	25	20	15
ml water	100	60	50	50	40
g salt obtained	26.5	24.5	22.5	20.7	19.7
$[\alpha]_D^{25}$ of the acid	+45.5°	+48.5°	+50°	+50°	+50°

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