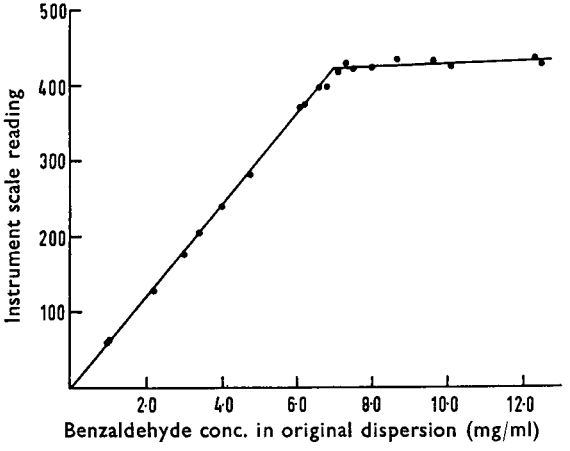

FIG. 1. Variation in refractive index, in terms of instrument scale reading, of aqueous solutions containing increasing concentrations of benzaldehyde at 25°.

such as filtration, ignition or dilution which may introduce errors and is capable of rigid temperature control, an obvious necessity in solubility determinations. As such it appears to be an ideal method for measuring the solubility of benzaldehyde in water and is also applicable to many other materials.

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Some newer anti-inflammatory agents

SIR,—Lightbody & Reid (1960) demonstrated the hypoglycaemic effect of *o*-cresotinic acid. The hypoglycaemic effects of some newer salicylic acid congeners were reported by Luthera & Tayal (1962). Since salicylates possess potent anti-inflammatory activity, the anti-inflammatory effects of these newer salicylic acid congeners, 2,4-diacetoxybenzoic acid, *m*-cresotinic acid and 5-ethyl-2-hydroxybenzoic acid, on formaldehyde-induced arthritis (Brownlee, 1950) was compared with that of hydrocortisone.

Albino rats weighing between 100–110 g were divided into five groups of six animals each. The anteroposterior diameters of the ankle joints were measured daily for 10 consecutive days and 0·1 ml of 2% formaldehyde solution (v/v) was injected in each foot subcutaneously under the plantar aponeurosis on first and third days. One group of animals served as control. Other groups were treated with daily intraperitoneal injections of 2,4-diacetoxybenzoic acid, *m*-cresotinic acid, 5-ethyl-2-hydroxybenzoic acid (2·0 mg/100 g body weight) and hydrocortisone (0·5 mg/100 g body weight) respectively. The results are shown in Table 1.

TABLE 1. EFFECT OF HYDROCORTISONE AND SALICYLIC ACID CONGENERS ON FORMALDEHYDE-INDUCED ARTHRITIS IN RATS

	Dose mg/100 g i.p.	Initial diameter mm	Average ten day diameter mm	% anti-inflammatory effect	P
Control	—	6·1 ± 0·07	7·53 ± 0·04	—	—
Hydrocortisone	0·5	6·04 ± 0·09	7·1 ± 0·09	30·7	<0·001
2,4-Diacetoxybenzoic acid	2·0	6·1 ± 0·05	7·08 ± 0·08	31·5	<0·001
m-Cresotinic acid	2·0	6·15 ± 0·06	7·22 ± 0·09	21·7	0·02–0·01
5-Ethyl-2-hydroxybenzoic acid	2·0	5·92 ± 0·06	7·11 ± 0·08	29·3	<0·001

The drugs showed potent anti-inflammatory activity similar to that of hydrocortisone. Quantitatively, *m*-cresotinic acid was found to be a less potent anti-inflammatory agent (21·7%) than 2,4-diacetoxybenzoic acid (31·5%) and 5-ethyl-2-hydroxybenzoic acid (29·3%).

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Anti-erythemic effectiveness of some metabolic inhibitors in guinea-pigs

SIR,—Among the methods applied to the measurement of the anti-inflammatory activity of nonsteroid compounds is the inhibition of ultra-violet light-induced erythema in guinea-pigs. The advantages of the method are its sensitivity and specificity and the close relation between clinical and anti-erythemic doses. Having subjected more than a hundred compounds to careful analysis, Winder (1958) concluded that only the well known antiphlogistics used clinically have a significant anti-erythemic effect.

The existence of a correlation of the antiphlogistic and metabolism-inhibiting (uncoupling) effect of nonsteroid agents is becoming an accepted hypothesis (Whitehouse, 1963). Thus, to clarify the role of the major energy producing processes—glycolysis and oxidation—in the development of ultra-violet-induced erythema we examined the influence of some enzyme inhibitors, of known biological mechanisms of action, in guinea-pigs. The effect of these compounds has not been investigated in this way before.

Our method was identical with that of Winder (1958). The depilated skin of the guinea-pig's back was irradiated with a 1000 W mercury lamp. Heat rays were filtered by cold water in a quartz tube. Each spot was irradiated for 80 sec. The spots were scored by marks 0, 0·5 and 1, the maximum score for the total of the three spots irradiated being 3 per animal. If the effect scored was below or equal to 1·5 in an animal, this was considered as an inhibition.

Table 1 shows that the substances when administered in non-toxic doses, intensely inhibited the appearance of erythema. 2-Deoxyglucose inhibits