ably a suitable antibiotic given, but also the defence of the patient should be stimulated by diethylstilbœstrol. They also indicate that, in cases in which the cortisone cannot be withdrawn, diethylstilbœstrol can be given at the same time to increase the general defence against infection. At least clinical trials seem to be indicated along these lines.

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Some Indole Constituents of Cabbage

3-Indolylacetic acid has long been recognized as a naturally occurring plant auxin, but the problems of its origin, mode of action and metabolism are not yet fully elucidated. In particular, several pathways for the *in vitro* degradation of 3-indolylacetic acid by oxidase systems have been postulated, but no unequivocal evidence for the chemical nature of the products from such reactions has yet been presented.

With the isolation of 3-indolylacetonitrile from cabbage and the realization of its growth-promoting properties[1], it has been of interest to examine the metabolism of this compound in the cabbage plant. Failing attempts to demonstrate an indolylacetonitrile–oxidase activity in purified cell-free extracts of cabbage material, it has been possible to obtain some insight into the problem by investigating the occurrence of other indole derivatives in the plant. We wish to report the isolation from cell-free *aqueous* extracts of cabbage, by ether extraction and the use of adsorption and partition chromatographic techniques, of indole-3-aldehyde and indole-3-carboxylic acid. The compounds were identified by melting point and mixed melting point, analysis, ultraviolet and infra-red spectra, by the preparation of derivatives, and by chromatographic comparison with authentic specimens of the two substances. Indole-3-aldehyde was isolated initially from maturing plants (var. January King), the yield being 6·5 mgm. from 1·9 kgm. of plant material; the presence of indole-3-carboxylic acid was suggested by paper chromatography—a spot with R_F 0·44 (*iso*propanol/0·15 *N* ammonia) giving an orange colour with ferric chloride spray reagent. Following this work, fully grown plants (var. Early Offenham, 9·1 kgm.) yielded the aldehyde (67 mgm.) and the acid (3·5 mgm.). 3-Indolylacetonitrile was present in trace amounts in both cases, but no indication of the presence of 3-indolylacetic acid was obtained.

Indole-3-aldehyde has previously been claimed, on the evidence of paper chromatography, to be present in cabbage and other crucifers[2] and it has been suggested as a product of the enzymatic oxidation of 3-indolylacetic acid[3]. Indole-3-carboxylic acid has been shown to arise when 3-indolylacetonitrile is applied to plant tissue, the reaction being considered an example of the general process of α-oxidation of nitriles, and in addition the compound has been detected in peas[4]. The present work confirms these reports of the occurrence of the compounds, and suggests that side-chain degradation, as distinct from ring fission, is one form of auxin inactivation operating within the cell.

Small amounts of a third 3-substituted indole were also isolated in both cases, and the chemistry of this new compound is being further investigated.

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Effect of Low Temperature on the Breeding of Marine Animals

The work of Appellöf[1], Runnström[2] and Orton[3] directed attention to the importance of sea temperature in determining the geographical limits within which a marine animal could breed. It is now well known that the breeding season may vary over the different parts of the range, according to the annual variation in temperature at different latitudes. This effect is particularly evident in species which are adapted to warmer seas; their breeding season in more temperate waters is increasingly restricted to the warmest months. Recently, Loosanoff and Davis[4] have demonstrated experimentally that certain of these organisms, notably *Venus mercenaria*, can be brought into the breeding condition in winter by gradually raising the temperature of the water in which they are kept and providing them with suitable food.

Arctic forms living in temperate latitudes generally produce fertilized eggs in winter or in early spring, which suggests an inability to breed at higher temperatures. However, there is little evidence that in arctic waters they spawn over a more extended period, or that the season of egg production is displaced into the summer months. On the contrary, those groups with predominantly planktotrophic larvæ, such as fish and cirripedes, which breed in winter or spring in temperate latitudes breed also during the same period in the arctic[5–7]. This may have an advantage in giving the larvæ an early start in a short growing season[6].

So far, I do not think that the direct effect of low temperature in promoting the breeding of cold-water forms has been explored by experiments analogous to those of Loosanoff. The results of work recently carried out in this laboratory may therefore be of general interest as well as of practical value.

Two species of arctic barnacles, *Balanus balanoides* L. and *Balanus balanus* (L) (= *B. porcatus* Da Costa), which normally become fertilized once a year in November and February respectively[6], have been kept in the laboratory at different temperatures for long periods. Those maintained at temperatures