germinated earlier and in greater numbers the following spring[5].

Bruce G. Cumming

Botany and Plant Pathology Laboratory,
Science Service,
Ottawa.

James R. Hay

Field Husbandry Division,
Experimental Farms Service,
Ottawa.
June 24.

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Effect of Gibberellic Acid on Corolla Size

In a previous communication[1] I reported that emasculation of *Glechoma hederacea* flower buds resulted in a reduction in corolla size similar to that found in naturally occurring female flowers, and I suggested that the anthers produced a hormone causing enlargement of the corolla. An attempt to replace this by the application of β-indolylacetic acid to emasculated buds was ineffective—low concentrations having no effect and high concentrations (500 and 1,000 p.p.m.) causing inhibition of corolla growth.

This year I have tested α-naphthaleneacetic acid, 2 : 3 : 5-tri-iodobenzoic acid and L-proline (cf. ref. 2), and found that they did not affect corolla size except at high concentrations, when they were inhibitory.

Dr. S. Housley suggested the use of gibberellic acid and this proved effective. When applied in aqueous solution to emasculated buds it restored the size of the corolla to that of intact flowers (the results of one experiment are given in Table 1). A small increase also resulted from treatment of intact hermaphrodite buds with gibberellic acid.

Table 1. Effect of Gibberellic Acid (10 p.p.m.) on Emasculated and Intact Hermaphrodite Flower Buds of *Glechoma hederacea*

Treatment	No. of flowers measured	Mean length of mature corollas (mm.)
Emasculated. Gibberellic acid inserted	8	19·6
Emasculated. Distilled water inserted	12	15·9
Intact. Gibberellic acid inserted	14	21·3
Intact. Distilled water inserted	14	19·4

Treatment of natural female flowers caused a striking enlargement of the corolla, producing flowers of about the same length as intact hermaphrodites (Table 2).

Table 2. Effect of Gibberellic Acid (10 p.p.m.) on Natural Female Flower Buds of *Glechoma hederacea*

Treatment	No. of flowers measured	Mean length of mature corollas (mm.)
Gibberellic acid inserted	12	19·1
Distilled water inserted	12	13·4

The situation appears to be comparable with that in dwarf peas, which are converted into tall peas by gibberellic acid but are unaffected by auxin alone[3].

The effect of emasculation and its reversal by gibberellic acid may be general phenomena. I have obtained results from *Geranium anemonifolium* similar to those from *Glechoma*.

Full details of the work will be published elsewhere.

Audrey Plack

Department of Biology,
University College of North Staffordshire,
Keele, Staffs.
June 26.

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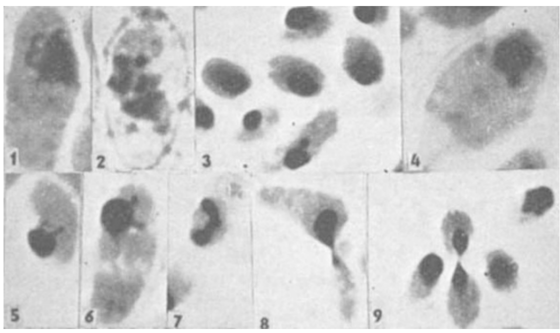
Kinetics of Mitosis in Yeasts

While differences of opinion still exist among yeast cytologists concerning the real significance of the vacuole and the chromosome number of different yeast species, it is clear from the work of De Lamater[1], Lietz[2], Winge and Roberts[3], Lindegren *et al.*[4] and McClary *et al.*[5] that (*a*) during division the yeast nucleus resolves into chromosomes which can be identified by suitable techniques; (*b*) the nuclear membrane persists throughout the division cycle, whereas in higher organisms the membrane disappears in the prophase and reforms in telophase; and (*c*) intra-nuclear mitosis is followed by a process of nuclear separation and movement into the daughter cell which simulates amitosis. Doubt whether nuclear division is amitotic[6,7] could thus arise when no distinction is made between the nuclear division proper and the transport of the daughter nucleus into the bud. We have studied the nuclear cytology of the vegetative diplophase of *Saccharomyces cerevisiae*, *Zygosaccharomyces priorianus* and *Schizosaccharomyces pombe*, using a new technique[8], and the course of mitosis and the mode of separation of daughter nuclei observed by us are described here.

Division phase. At the onset of mitosis the nucleus is resolved into chromosomes, and configurations resembling the prophase and metaphase chromosomes of other organisms could be seen in squash preparations (Figs. 1 and 2). The exact chromosome number



Figs. 1–9. Giemsa preparations of mitotic stages in *S. cerevisiae*. (1) Prophase. (2) Metaphase. (3) End of intranuclear mitosis. A double structure in some nuclei and single and divided centrosomes are seen. One cell with the smaller nucleus has apparently not yet entered mitosis. (4) A nucleus with a single centrosome. (5) and (6) Beginning of the separation of the divided halves of the nucleus. Two centrosomes are seen. (7) A near dumbbell configuration. (8) One nucleus passing into the bud. The centrosome is seen entering the bud first. (9) Final stage in the separation of nuclei

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