

ageing begins. This is the point at which the feedback system probably operates.

Wound healing in the skin results in increased compensatory mitosis around the damaged area. To explain this, a "wound hormone" has been postulated but never isolated. Another explanation is that cell damage results in the loss of an inhibitory substance from the cells. In this connexion, Professor Bullough has shown that *in vivo* injection of an extract of skin homogenate—chalone—depresses mitosis in mouse skin. *In vitro*, mitosis is depressed for about five hours. If adrenalin is then added, there is a second fall in the rate of mitosis, indicating that chalone works with adrenalin as a factor. This is borne out by the fact that, whereas normal skin divides most rapidly during sleep, when the level of blood adrenalin is low, wounded tissue from which the chalone is absent continues to divide rapidly during the day, when the level of adrenalin is high.

Professor Bullough said that each tissue has its own specific chalone, which in the case of pig skin is a glycoprotein of molecular weight about 25,000. Surprisingly, chalones are not species specific, for an extract of codfish skin is effective in animals as phylogenetically distant as mammals. When tissues attain a certain size the concentration of chalone is sufficient to prevent further growth; if damage or cell death occurs so that the concentration of chalone is reduced, the tissue grows until it reaches the *status quo*. One good example of the adaptive significance of the process is during times of stress, for example, food shortage; because there is a high concentration of adrenalin, cell division is depressed and considerable metabolic energy is saved.

Interest in chalones has been stimulated by interest in cancer. Some cancer cells appear to have a fault in membrane permeability, resulting in loss of chalone and a predisposition towards high mitotic activity. This effect can usually be blanketed by the normal high chalone concentration of the surrounding cells. Low local concentrations of chalones, resulting, for example, from injury, may allow such "precancerous cells" to develop into a tumour. Professor Bullough said that treatment of skin melanomas with tissue extracts in a limited number of small animals has been encouraging; complete recovery has been achieved provided that treatment induces all the cancer cells to pass from the mitotic cycle onto the ageing pathway.

UNIVERSITIES

Studied Moderation at Bristol

THE University of Bristol seems to have demonstrated an effective way of dealing with the modern student disciplinary problem—the student revolt *en masse*. The Committee on Student Discipline at Bristol has found 26 students guilty of involvement in planning or implementing the sit-in at Senate House in December. The demonstration was in support of a claim that the university's student centre should be open to all other colleges in Bristol. The students have been required to sign statements accepting the consequences of their participation in any further disruption of the university's activities. Failure to sign will result in one year's suspension or, in the case of two students, expulsion. Some of the 26 have already signed and the indications are that the rest will follow suit.

Writs were issued by the university against some of

the participants some days after the sit-in began, but were later dropped. It is thus of interest that the report of the university Senate affirms that the legitimate expression of deeply felt convictions, "by all members of the university, is a right that Senate will defend with all its strength".

Given the seriousness with which university administrators regard the possibility of disruption of university life by student militancy, and perhaps more important the publicity attendant on ineptitude—LSE and Birmingham are glaring examples—it remains to be seen whether the iron fist in kid glove policy demonstrated at Bristol will prove effective in moderating future student unrest.

Whether or not the Bristol Students Union Building should be open to members of other colleges in the town is still under negotiation.

CHURCHILL COLLEGE

Another Barrier Down

A MEN'S college at Cambridge University has at last taken the plunge and decided to admit women—only a few, but women none the less. In the autumn of either 1972 or 1973, Churchill College will enrol up to forty women. The move will, no doubt, precipitate similar action in several other men's colleges at Cambridge and Oxford. On the news of Churchill's decision, the Provost of King's College, for example, issued a statement saying his college was actively considering admission of women and would make a decision after collaboration with other colleges on admissions procedures. At Oxford, New College, which last year publicized the fact that it was discussing the idea but has since said little, could well be the first to break with tradition. Now that women can be members of men's colleges as well as members, and even presidents, of the Union Societies, almost all aspects of Oxbridge life have reached the twentieth century.

It is fitting that Churchill should give the lead. For one thing the college must by statute have at least 70 per cent of its members in science and technology. The Master of Churchill College, Professor W. R. Hawthorne, hopes that the admission of women to Churchill will stimulate increased enrolment in such faculties as engineering, where at present there are only five women students. When the college was founded nine years ago, many critics argued that it should have been a women's college or at least half and half. There was and still is a much greater need for more new places for women than for men, and the ratio is at present eight men for every woman undergraduate. Plainly the change will be popular for all kinds of reasons.

If anything, academic standards should benefit and social life should improve. Moreover, because of the imbalance between the sexes, women have been turned down at Oxbridge while many academically inferior men have found places. Churchill seems to have anticipated the complaint that it is now proposing to do too much for women by planning a simultaneous increase of up to eighty in the total number of undergraduates.

But will the women's colleges at Oxbridge be the first to feel the draught? On the face of things, they