

to become doctors. Moreover the organization of the curriculum, although far from complete, is unlikely to encourage any such trend. Unlike Nottingham, which will take several years to reach full capacity, the Southampton medical school plans to enrol its full complement of 130 students by its second year of operation, 1972. This is possible because clinical teaching will be at two existing hospitals, the Southampton General and the Royal South Hampshire Hospitals, on which the UGC and the Department of Health and Social Security are spending £16 million. The use of existing hospitals means faster growth for Southampton but it has led to the difficulty of finding hospital space for the academic staff. It is no secret that the planners are having to move cautiously in their attempts to infiltrate the two hospitals, dominated by National Health Service consultants and medical staff, with academic doctors.

TEXTILE FIBRES

Courtaulds Booms Away

THE Courtaulds Group continues to provide most of the excitement in the British synthetic fibres industry. After what seems to have been another year of remarkable growth, with sales increasing from £394 million to £576 million, and with profits increased from £36 million to £51 million, the company seems bent on pushing ahead with several schemes for further development. Earlier this week, the details became known of the plan which the company has been talking of for several months to build an acrylic fibre plant in the

United States; the new plant will cost £15 million and will be built near Columbia in South Carolina. Courtaulds already operates a plant at Mobile, Alabama, where it manufactures nylon and viscose rayon. In the past few years, Courtaulds has emerged as the largest British manufacturer of acrylic fibres, and Sir Frank Kearton, the chairman, was saying two weeks ago that it might have been even larger in 1968 if ICI, the British supplier of the raw material acrylonitrile, had not been afflicted by manufacturing problems. The company's current product of acrylic fibres, running at just under 200 million pounds a year from the two plants at Grimsby and Calais, is expected to increase by forty per cent in the next two years. The new plant in the United States will add a comparatively modest 50 million pounds a year, but this should be enough to decide whether Courtaulds can sell the product successfully in competition with Du Pont and Monsanto on their home ground.

Among British industrial groupings, Courtaulds stands out for the way in which it has been able to sustain a high level of capital expenditure in the past few years. The £56.4 million spent on new plant in the financial year just ended is expected to be matched by more than £70 million in the year ahead. Apart from its new venture in the United States, the company is also planning to embark on polyester production at a new plant in Northern Ireland. Sensible though this may be in its own right, it is clear that Courtaulds also regards this venture as a further proof of its independence from ICI—the two companies have regarded each other with the detachment of divorcees ever since ICI, previously a partner in nylon produc-

REPRODUCTION

How IUDs Work

from a Correspondent

INTRA-UTERINE devices, although not as popular or effective as the pill, do possess certain advantages over oral contraceptives which are especially important in programmes to curb the birth rates in developing countries. These advantages are principally cheapness of manufacture and the fact that, once an IUD is inserted, no further expense or attention is required—at least, in theory. In practice, however, about 30–40 per cent of women fitted either expel the device spontaneously or have it removed within the first year because of side effects. Current modifications of IUDs have been entirely empirical and attempts to improve them rationally have been hindered by ignorance of their exact mode of action.

Until recently, experimental evidence suggested that the IUD accelerated the movement of ova through the Fallopian tube so that the chances of fertilization and implantation were reduced. But doubt has already been cast on this theory by further experimental work (Mastroianni *et al.*, *Amer. J. Obstet. Gynec.*, **99**, 649; 1967). The most recent study by P. Eckstein, J. H. Marston and W. A. Kelly, reported in a series of five papers (*J. Reprod. Fert.*, **19**, 133, 143, 149, 321 and 331; 1969), points to the uterus as the site of action of IUDs. Some fifty rhesus monkeys were used; about half were fitted with polythene spiral IUDs, the remainder served as controls. None of the females

with IUDs became pregnant after three compatible matings, whereas half of the control group conceived after the same number of matings, thus demonstrating the anti-fertility effect of the device.

Laparotomies, autopsies and irrigations of the oviducts and uterus carried out during the mating period revealed no significant difference between the animals with IUDs and the controls in the occurrence and timing of ovulation and fertilization, nor in the rates of development and transport of ova down the tubes. Clearly the ovaries and Fallopian tubes were not influenced by the IUDs.

The crucial question now is: at what stage does the IUD cause the death of the early embryos which arrive in the uterus? If death occurs even shortly after implantation, the more pedantic commentators will claim that IUDs are abortifacient rather than truly contraceptive. The evidence on this point is not completely conclusive. It seems that the embryos were not expelled from the uteri that contained IUDs and it is inferred that the occurrence of implantation was unlikely because most animals fitted with IUDs experienced apparently typical menstrual bleeding at the expected time. Eckstein *et al.* deduce that mortality occurs before implantation. But early abortion or resorption of embryos was not completely ruled out in this study. They have demonstrated that the IUD does not inhibit the decidual reaction of the monkey, in contrast to findings in other species. This implies that the uterus remains receptive to implantation, but it is not known whether the embryos survive until this time.