average sensitivity. Our results, together with those of Merigan and Quercioli, suggest therefore that subjects infected with mumps, measles, chicken-pox and 17*D* yellow fever viruses do not excrete interferon in their urine in amounts which are readily detectable by present methods. In contrast, Soloviev[11] reported that interferon was present in urine from patients who were infected with influenza *A*2 virus in concentrations higher than those in the serum.

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CYTOLOGY

New Simple Method of Micrurgy on Living Cells

A simple method has been developed whereby micrurgy on living cells such as nuclear transplantation and cytoplasmic injection in amoebae can be performed with greater ease and rapidity. The present method differs from those used currently[1–4] in that the need for a micro-hook to hold cells and the use of mineral oil (liquid paraffin) to prevent the evaporation of culture medium are eliminated. This is done by placing the cells on an agar surface. When the excess medium surrounding the cells is withdrawn, they remain firmly attached during operations. The agar gel apparently replaces the medium that evaporates, and there is no damage to the cells during the period required for micrurgy. Thus, for example, nuclei are transplanted between amoebae in open drops with a micro-probe alone.

This principle can be applied to both the original hanging drop method[1–3] and the modified slide method[4]. For preparation, 0·6 per cent agar in the cell culture medium is boiled, filtered and poured while hot onto clean glass slides or coverslips (agar with different purities and at different concentrations was tried, but ordinary bacteriological, non-nutrient agar obtained from Fisher Scientific Co. was found to be most suitable). As soon as the agar cools and gelates, cells can be placed on it and are ready for operations.

No hooks are used, and so it is necessary to place cells in desired positions beforehand. For example, the donor and recipient cells for nuclear transplantation are placed side by side before withdrawing the excess medium. After this, the cells cannot move and different ones can be easily distinguished by their relative positions during and after operations.

With a good objective that has a relatively long working distance, of which there are several makes available, the slide method is preferred to the coverslip method. In the slide method, no inversion of the operation stage is necessary and there is more freedom of movement both with the micro-tool and the slide. For example, using a circular rotating microscope stage, the direction of the arrangement of cells being operated can be easily changed up to 180 degrees. With the slide method, the micro-probe is bent downwards and applied to the cells from above[4].

The advantages of this new method are obvious and manifold: first, there is no hook to make and use, thus eliminating the most troublesome portion of the micrurgical work. As a result, operations can be performed with much greater ease and rapidity than with other methods. For example, as many as 200 amoebae can be easily enucleated in an hour and thirty nuclear transplantations can be carried out during the same period in optimal conditions (compare ref. 3).

While the agar-coated slides were designed primarily for micrurgy on amoebae, they were also found useful in immobilizing other motile cells such as *Tetrahymena* and *Paramecium* for microscopic examination and manipulation of these cells.

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PATHOLOGY

Sebaceous Gland Activity in Breast Cancer

A number of observations suggest that human breast cancer develops under hormonal influence. Several such observations include: (*a*) breast cancer is predominantly a disease of women; (*b*) the administration of oestrogenic materials produces breast tumours in experimental animals[1]; (*c*) the course of breast cancer is influenced by ablative endocrine procedures or by the administration of exogenous hormones in both humans and experimental animals[2–4]; and (*d*) the length of the menstruating years and the number of pregnancies affect the frequency of the disease in any given population[5,6].

The physiological role of oestrogens in breast cancer has not been clearly elucidated, although this has been examined in some detail. Measurements of the urinary excretion of oestrogen metabolites in women with breast cancer as compared with age-matched control populations of healthy and ill females have revealed no uniformly significant differences[7,8].

Studies of total urinary 17-ketosteroids, as well as androsterone and aetiocholanolone, have not demonstrated any significant abnormal pattern in women with breast cancer[9–11]. Bulbrook *et al.* have demonstrated that the clinical response to ablative surgery was predictable from the concentrations of urinary aetiocholanolone and 17-