(Yokota, Reeves and MacLean, *Science*, **157**, 1072; 1967). The hippocampal cortex with a much simpler and more ordered structure than the rest of the cerebral cortex is suitable for investigating single unit activity, particularly the relation of unit firing to specific inputs producing known patterns of synaptic activation. The authors investigated the effects of two inputs, one from electrical stimulation of the olfactory bulbs and the other from the septum. The septal pathway produced EPSPs which could lead to spike initiation, whereas olfactory bulb stimulation never leads to spike generation.

Marg and Adams (*Electroenceph. Clin. Neurophysiol.*, **23**, 277; 1967) also describe techniques for electrode implantation but in human subjects. They have obtained recordings from units (producing spikes of low amplitude and long time-course) in the striate cortex, and say that these show some of the properties found by Hubel and Wiesel for the primary visual cortex of the cat; furthermore, this activity was inhibited when the subject closed his eyes. This is an interesting observation, as reduction of the intensity of light reaching the retina usually leads to increased activity in the optic nerve, presumably because lateral inhibition in the retina decreases, making the retina more sensitive but reducing visual acuity (Arduini, *Progr. Brain Res.*, **1**, 184; 1963).

Immunology of Reproduction

from a Correspondent

An International Symposium on the Immunology of Spermatozoa and Fertilization was held in Varna, Bulgaria, from September 27–29, 1967. Organized by Academician K. Bratnov and his colleagues, it attracted more than 340 delegates from 20 countries, most of them from the Soviet Union and eastern Europe. Western scientists there took this excellent opportunity to meet people and evaluate data previously unknown. All the proceedings, entertainment and accommodation were provided in the International House of Scientists, which gave excellent opportunities for informal discussion.

Progress on various topics was reported, although major questions inevitably remained unanswered. Several important antigens extracted from tissues or secretions of the male tract have been characterized. Some of them in seminal plasma adhere so tightly to spermatozoa that they influence the antigenic properties of these cells. Immune aspermatogenesis received much attention, ranging from the identification of some of the antigens responsible to the physiological consequences of natural or experimental interference with normal processes. But the mechanism by which the antibodies interfere with spermatogenesis is still not fully understood. Removal of the site of sperm resorption in men with blocked vas deferens leads to a reduction in their serum titre of spermagglutinins. But it is still not clear why some men transmit these antibodies to their seminal plasma whereas others do not.

The effect of immunization with spermatozoa on fertility in females was dealt with by eastern and western workers. In several species including man there is now evidence of impairment of fertility in females due partly to the presence of antibodies in the reproductive tract. Again, however, questions remain: why are only some of the females infertile, and why are stages after fertilization affected in some species? Immunological aspects of embryonic development, for example, cross-fertilization, maternal–foetal interactions, and the appearance of stage-specific antigens during embryogenesis, were described in several lectures, although insufficiently. The wide variety of immunological techniques now available, and their value for various kinds of investigation, were debated in an impromptu round-table session.

Although the programme was very full, perhaps too full, with some contributions of little relevance to the main theme, the symposium has generated enthusiasm for frequent collaboration and critical discussion among workers in this field. Much credit for this must go to the Bulgarian organizers of the symposium.

Function of Histones

from a Correspondent

The relation of histones to the regulation of gene action is one of the most challenging and controversial topics in developmental biology. Originally the Stedmans proposed that specific histones characterize specific cell types, but analyses of histones from different tissues do not support this idea. Genetic regulation must be at a more subtle level of histone chemistry. Allfrey and Mirsky and their colleagues have claimed that acetylation and phosphorylation of histones is a prerequisite for RNA synthesis at histone-repressed gene loci. Experiments by Gutierrez Hnilica (*Science*, **157**, 1324; 1967) tend to support this idea. They have found that the differentiated cells of rat liver and spleen incorporate phosphate-32 into their lysine-rich and arginine-rich histones at a very much faster rate than the dividing cells of regenerating liver and transplanted Novikoff hepatoma, although the latter cells synthesize more histone than the differentiated cells. Furthermore, the degree of phosphorylation decreases with increasing rate of cell division. Thus it seems, on the basis of the degree of phosphorylation, that differentiated cells are more genetically active than the dividing cells.

It should be possible to detect changes in histone biochemistry at genetically active sites, like the "puffs" of Dipteran polytene chromosomes. This led Ellgard (*Science*, **157**, 1070; 1967) to induce puffs on the polytene chromosomes of *Drosophila* larvae and to look for evidence of acetylation at the puffs. By autoradiography he found that the newly induced puffs were genetically active and they incorporated 3H-uridine into RNA, but he was unable to find any evidence of acetylation at these sites. So controversy remains.

Some pattern does seem to be emerging in the relation of histone type with division and differentiation. Holoubek and Hnilica (*J. Nat. Cancer Inst.*, **39**, 187; 1967) report that a histone very rich in lysine (F1) extracted from nuclei of the Walker carcinosarcoma of mouse, and normal thymus and liver cells, when injected into mice increases the rate of DNA synthesis in the nuclei of their liver and spleen. Other histones, including the arginine-rich fractions (F2*a* and F3), inhibit synthesis. It is interesting that the F1 fractions from thymus and liver nuclei have to be separated from some unspecified protein before being able to stimulate