from one day to 229 days after injection. Animals were killed at intervals, and their thyroids examined histologically.

Those animals given the two lower doses showed no histological evidence of thyroiditis up to 28 days after injection. Animals given 2 mc. per kgm. showed no abnormality of the thyroid when examined from 1 to 5 days after injection, but thyroiditis was present from 7 days onwards. With a dosage of 8 mc. per kgm., there was mild thyroiditis when the animals were first examined at 4 days, progressing to extensive necrosis at 7 days. At this stage, the histological picture in those areas which were not necrotic was that of disruption of the follicles, with intermingling of epithelial cells, inflammatory cells and fibroblasts. With such disorganization of the gland there could be little doubt that colloid had been liberated from the follicles. In the later stages the inflammatory reaction subsided and there was considerable regeneration of thyroid epithelium. The high dose of iodine-131 required to produce thyroiditis is due to the low iodine uptake on diet *S.G.*1 (Oxoid).

In none of the 138 sera examined was there detectable autoantibody. Thus, in spite of the presumed escape of thyroglobulin from the follicles at an early stage in the experiment, the development and regression of thyroiditis occurred without production of autoantibody.

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BIOLOGY

Molecular Biology or Ultrastructural Biology?

It is generally recognized that in the past decade or so we have seen great advances, which are of inestimable value for our understanding of fundamental biology, in the field which is concerned with proteins, nucleic acids, genes, viruses, antibodies, enzymes, etc. It is gratifying to note that several important bodies which are in a position to influence public policy in scientific matters have singled out this field as one requiring increased support.

It is unfortunate, however, that it seems to be becoming usual to refer to this connected series of topics by the name 'molecular biology'. This phrase is only marginally appropriate to any aspect of this area of biology, and is highly inappropriate to the greater part of it. Its most natural application would be to the biology of molecules of the conventional chemical kind, such as those involved in intermediate metabolism, and these are precisely not the types of entity with which the field under discussion deals. The smallest particles with which the new advances have to do may, indeed, be regarded as falling near the upper limit of size of the molecular, and, as for some proteins for example, are open to investigation by, more or less, conventional 'molecular' or chemical techniques. The greater part of the recent advances, however, have dealt with entities which are not defined in chemical terms; for example, genes, cistrons, mutational sites, ribosomes, antibodies, endoplasmic reticulum, and so on; and they have been studied predominantly by such non-chemical methods as those involved in viral and bacterial genetics, induced enzyme synthesis, complementation studies, immunology, ultra-centrifugation, electron microscopy, X-ray spectroscopy, and the like. An attempt to squeeze the whole of this wide front of advance under a title such as 'molecular biology', which places the emphasis on physical and chemical methods of investigation, brings with it the danger that the equally essential biological methods—which are in some respects even more penetrating than our existing chemical methods—will be unduly neglected.

The general characteristic of the field under discussion is, surely, that it is concerned with the analysis of entities, such as genes and ribosomes, which fall in the scale of magnitude lying between those visible with the light microscope and those accessible to conventional biochemical methods. A suitable name for it would be 'ultrastructural biology', which does not carry any particular implication as to the methods of investigation which should be employed. It is urged that this name should be used when the whole of this area of research is being referred to; the phrase 'molecular biology' could be retained, if desired, for that aspect of ultrastructural biology which deals with the chemical and physical study of the configuration of biologically important macromolecules.

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Influence of Uterine Position on the Response of the Mouse Embryo to the Teratogenic Effects of Hypervitaminosis-A

When a teratogenic agent is administered to a number of pregnant mammals of a single species under identical conditions of timing and dosage, its effect on the development of the young is by no means uniform. In any individual litter, all, none or a proportion only of the young may be deformed. Even when a highly inbred strain is used, variations in the response to the teratogenic agent may be attributable to differences in the maternal genotype. Such differences cannot, however, be held responsible for the situation in which individual members of a litter develop normally while others are deformed. The differences in response of litter mates must derive either from individual variations in genetic make-up or from environmental factors as yet unanalysed. The present investigation was carried out in order to determine the influence of a single environmental factor, namely, the site of implantation, on the susceptibility of the mouse embryo to the teratogenic effects of hypervitaminosis-A.

Forty female mice of the Strong *A* line were used in these experiments. Brother–sister matings only were used and the onset of pregnancy was determined by the presence of a vaginal plug, the day on which