

TESTICULE ET SPERMATOGENÈSE

EFFECTS OF FSH, LH AND PROLACTIN ON THE TESTIS AND ACCESSORY ORGANS OF OESTROGEN-TREATED RATS. — P. C. SIVELLE, D. LACY, A. S. McNEILLY. *London (G. B.)*.

Following the administration of ethinyl oestradiol (100 µg/100 g b wt/day/42 days) the ratio of step 7 spermatids to pachytene spermatocytes fell to 1 p. 100 of the control value; the weights of the testes and seminal vesicles fell to 16 p. 100 and 6 p. 100 respectively. Serum levels of FSH were significantly reduced but not those of LH or prolactin. When FSH was injected for 14 days the step 7/pachytene ratio was increased to 40 p. 100. There was no effect on the accessory sex organs. Injections of LH or prolactin produced no change.

THE EFFECT OF LOCAL IRRADIATION OF THE TESTES ON PLASMA HORMONE LEVELS AND TESTICULAR HISTOLOGY IN MALE RATS. — C. R. N. HOPKINSON, C. HIRSCHHAUSER, B. GAUSS, W. HILSCHER. *Düsseldorf (R. F. A.)*.

Adult male rats were subjected to 200 R or 300 R local irradiation of the testes. At intervals thereafter, plasma LH, FSH, testosterone and oestradiol 17β levels were measured by radio-immunoassay and the testes examined histologically. Plasma LH and FSH levels increased significantly after irradiation. Simultaneously, testosterone levels decreased significantly indicating an inability of the irradiated Leydig cells to respond to the increased gonadotrophin levels. Plasma oestradiol levels did not change significantly. Changes in plasma hormone levels will be correlated with histological changes in the testes.

PHOTOPERIODIC CONTROL OF REPRODUCTION IN THE RAM: TIME-LAGS FROM STIMULUS TO RESPONSE. — G. A. LINCOLN. *Edinburgh (Scotland)*.

Soay rams were exposed to alternating periods of 3 months 'long' days (16L/8D) and 3 months 'short' days (8L/16D) to stimulate annual photoperiods. Frequent measurements of plasma LH and testosterone, testis size, skin colour and behaviour — the latter recorded by a mechanical device — were made to monitor reproductive function. Abrupt transfer to 'short' days stimulated a hierarchy of responses with LH values rising first (day 1) followed by increases in testicular size and steroid output (day 10) and finally changes behaviour (day 50). Full development took at least 10 weeks. Short term secretory patterns of LH were also investigated.

THE EFFECT OF PINEALECTOMY AND SUPERIOR CERVICAL GANGLIO-NECTOMY ON THE TESTIS OF THE VOLE, *MICROTUS AGRISTIS*. — H. M. CHARLTON, C. A. GROCOCK, A. OSTBERG. *Oxford (G. B.)*.

Previous experiments have shown that when male voles are kept in short photoperiod conditions (6 hours light per day), testis growth is inhibited in juveniles or undergoes regression in adults. In this communication the effects on the testis of removing the pineal body or the superior cervical ganglia will be discussed. After removal of either of these organs, testis size

and function is maintained in adult voles and stimulated in juveniles when these animals are kept in short photoperiods. Testis structure and levels of gonadotrophins will be compared in control and experiments groups.

INFLUENCE OF TESTICULAR CAPSULE CONTRACTIONS ON THE PERFUSED TESTICULAR ARTERY. — G. A. LANGFORD, G. M. H. WAITES, V. ARCHER. *Reading (G. B.) and Ottawa (Canada).*

The isolated perfused testicular artery which lies within the testicular capsule has recently been shown to be insensitive to catecholamines. This is in contrast to the testicular capsule which can be stimulated to contract by α -adrenergic agents or relaxed by β -adrenergic agents. The present study describes perfusion of the testicular artery in the isolated whole rabbit testis during drug-induced testicular capsule contractions. Results obtained suggest that changes in perfusion pressure caused by capsule contractions may be important in testicular physiology.

TESTICULAR BLOOD SUPPLY IN THE SHEEP. — M. COUROT, M. JOFFRE. *Nouzilly et C. E. B. A. S.-C. N. R. S. (France).*

The testicular capillary blood flow was measured by the ^{133}Xe clearance technique in *Ile-de-France* lambs and rams in spring and autumn. Anesthetized animals were maintained in the supine position, ^{133}Xe being injected intratesticularly through the scrotal skin.

In the adult the blood-flow (ml/mm/100 g) depended upon the season : 8.3 ± 1.0 vs 12.7 ± 0.7 in May and October ($P < 0.01$). In the impuberal lamb (50 days old) regardless of the period of the year, the blood flow was the same as in the adult in the breeding season (11.4 ± 1.2 vs 12.7 ± 0.7). In prepubertal lambs (120 days of age) the rapid increase in testicular weight was not correlated with an increase in the blood flow (9.4 ± 0.7).

SPERMATOGÉNÈSE ET SPERMATOZOÏDES

PROTÉINES BASIQUES NUCLÉAIRES DES SPERMATIDES DE BÉLIER.
— M. LOIR, M. HUBERT, M. LANNEAU. *I. N. R. A., Nouzilly (France).*

Les protéines basiques nucléaires ont été extraites de 4 populations de spermatides obtenues par sédimentation à 1 g. Les extraits ont été analysés par électrophorèse sur gels de polyacrylamide. Seules les histones somatiques sont présentes dans les noyaux des spermatides rondes. Lorsque les noyaux changent de forme et que leur volume diminue, elles sont déplacées de la chromatine. Elles sont remplacées par une protéine très basique, unique dans les spermatozoïdes, acido-solubles au début de sa synthèse et acido-insoluble ensuite (dans les noyaux DNase résistants) à moins d'être traitée par le 2-mercaptoéthanol. Cette protéine riche en cystéine et dont la masse moléculaire est de 6-7 000 correspond à la protéine spécifique des spermatozoïdes déjà étudiée par COELINGH. Au moins 15 protéines basiques généralement plus rapides que F_2a_1 sont présentes dans les noyaux impliqués dans le processus de remplacement des histones. Elles ne résultent pas de la protéolyse *in vitro* des histones somatiques. Elles ne sont pas des oligomères de la protéine spécifique des spermatozoïdes. Deux d'entre elles contiennent de la cystéine.