differs from its nearest relative, *Nycticebus*, and also from *Tarsius*, both of which breed continuously, and agrees with *Lemur* in having a well-demarcated bi-annual breeding season[3]. It would also appear that the gestation period is somewhere in the neighbourhood of six months—a very long period for so small an animal. This time, however, is supported by the evidence of a very long lactation period as already reported by me[4].

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Chemistry of Œstrogenetic Substances

As reported previously, unsaturated fat-aromatic α-ketonic acids injected into spayed mice give rise to the appearance of cornified cells in the vaginal smears[1]. Contrary to these results, J. W. Cook and E. C. Dodds failed to see an œstrogenetic effect with benzal-pyruvic acid and fural-pyruvic acid on spayed rats[2].

The total doses required for spayed mice are 24 mgm. dry sodium salts given in three doses at intervals of 24 hours. Cook and Dodds, working on rats, used doses of 100 mgm. (Calculated according to Parkes and Dodds[3], 240 mgm. would be the corresponding doses to produce œstrus in rats.) Their doses, therefore, were insufficient. Furthermore, they space the single injections of these substances in such a way that even a total amount, otherwise active, would be inactive under these conditions. "The importance of spacing the injections at the correct intervals cannot be over-emphasised." (Cook, Dodds *et al.*)[4]

The œstrogenetic effect of benzal-pyruvic acid and fural-pyruvic acid on spayed mice has been observed independently elsewhere. The statement that the œstrogenetic activity of unsaturated fat-aromatic α-ketonic acids is of the order of 1-keto-1.2.3.4.-tetrahydrophenanthrene is correct. It is known that figures of the same order are not necessarily identical figures.

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Carotid Gland of the South African Bullfrog

THE physiological and histological studies of Heymans[1], de Castro[2], Koch[3] and others have clearly shown the great importance of the sinus caroticus in the control of circulation and respiration in mammals. The carotid nerve, which arborises in the adventitia of the sinus, is innervated by the internal pressure of the blood, and the heart-rate and respiration are reflexively affected.

Except perhaps for its absence in a few species, for example, *Ichthyophis*, the carotid gland is very characteristic of amphibians. It is also present in *Breviceps*, which never takes to water. It may therefore be profitable to study it in the light of the works on the carotid sinus in mammals.

The carotid gland of a full-grown *Pyxicephalus adspersus* is approximately 2·5 mm. in length and 1·5 mm. in breadth. Its size allows of macroscopic dissection, while on the other hand it is small enough to be fixed entire for histological dissection and staining. A series of longitudinal sections supplemented by a series of transverse sections show the following: Soon after its entrance into the swelling, the common carotid artery is seen to communicate by means of several openings with two fairly large vessels, which join and leave as the external carotid artery. The openings may also be seen in a longitudinal macroscopic dissection of the 'gland'. Somewhat deeper in the swelling, the lumen of the common carotid expands, but eventually breaks up into a network of arterioles. These again unite to form a flattened lumen, which, however, becomes more arterial and leaves as the internal carotid artery.

Several interesting points may be noted. Melanophores occur abundantly in the network, while groups of cells are distributed in it which are very reminiscent of nerve cell bodies. Silver staining will be resorted to in order to detect nerve fibres if present. Histologically the carotid gland is a very much elaborated artery. Compared with that of the sinus caroticus in mammals, its media is very thick and traversed by many elastic fibres. The carotid gland will therefore not allow of passive dilation to the extent that the sinus caroticus does. Constriction of the carotid glands in the etherised frog registered no notable change in the frequency of the heart-beat.

Suggestions as to the probable function of the carotid glands in the frog are reserved at this stage of the study.

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Forces of Attraction of Homologous Loci and Chromosome Conjugation

A SERIES of genetic and cytological data show that chromosome conjugation at meiosis is caused by the attraction of homologous parts.

A study of chromosome behaviour in heterozygous inversions has disclosed with special clearness the action of these forces. We have obtained a stock of *Drosophila melanogaster* possessing attached *X*-chromosomes, one of which had an inversion involving almost the whole chromosome. If the forces of attraction of homologous loci are sufficiently great to overcome conjugational difficulties, which are connected with heterozygous inversions, chromosome conjugation ought to take place as in Fig. 1 (left hand). In this case ring chromosomes would form as a result of a single crossing-over in an inverted region. On the left end of the *X*-chromosome, these ring chromosomes would have a small deficiency and on the right one a duplication. The stock with