summer. The Irish specimens were obtained from a sheltered bay at Falcarragh, Co. Donegal, about six miles east of Bloody Foreland. The salinity of the water here is affected, particularly at low water, by a stream of freshwater. At one station 1,100 specimens per square metre were counted. At both places the sand was of fine grade with a small quantity of silt.

I am obliged to Dr. A. C. Stephen for confirming my identification, and for the information that the Welsh animals are quite typical, but that the Irish specimens show a certain amount of variation. In both cases the animals are small, the largest being only 8 mm. in length, so that these variations are probably due to immaturity.

The addition of these two records lends support to Dr. Stephen's opinion that *O. cluthensis* is considerably more common than the previous records suggest. It seems certain that this species has been frequently overlooked or dismissed as a juvenile form.

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Connexions of the Pterygoquadrate in the Tadpole of *Philautus variabilis* (Anura)

WHILE examining the chondrocranium of Ranid and Rhacorphorid (Polypedatid) genera of frogs, the connexions of the pterygoquadrate with the cranium were found to vary considerably. It is well known since the time of Parker[1] and Gaupp[2] that in the anuran larvæ, the pterygoquadrate gains attachment with the cranium normally in three regions, namely, an anterior ligamentary or, in the majority of cases, a cartilaginous quadrato-ethmoidal connexion; the second connexion is in the posterior orbitotemporal region, called the processus ascendens, which bears definite relationship with the three branches of the Vth. cranial nerve. When the tadpole undergoes metamorphosis, this larval connexion is lost (say in the case of *R. fusca* larva (*S. temporaria*) 29 mm., de Beer[3]) and the adult is without one. There is no anuran larval form described where, in the larval stages prior to metamorphosis, the absence of a processus ascendens is described. The last connexion is the oticus one; the posterior portion of the pterygoquadrate unites with the dorsal wall of the otic capsule over the cranioquadrate passage. This connexion, however, may be absent from some tadpoles.

Now, with regard to the genera which I have examined, *Philautus variabilis* Günth. (tadpoles kindly identified by Prof. C. R. Narayan Rao) needs special mention. I have examined the sectional views of at least two tadpoles of each of the stages measuring 22 mm. and 24 mm. (head and trunk 10 mm.) and 31 mm. (head and trunk 11 mm.) in all of which the posterior limbs have not appeared. All these tadpoles belong to premetamorphic stages. While the anterior connexions of the pterygoquadrate with the cranium are normal, the sections of the posterior orbitotemporal region do not show the presence of the connexion of a processus ascendens palatoquadrati with the pila antotica or an oticus connexion with the otic capsule, there being a little connective tissue between the posterior portion of the pterygoquadrate and the cranium, and so far as is known to me the absence of both these connexions in the larval anura is not recorded. This is a remarkable feature in *P. variabilis*, and if the processus ascendens connexion has broken down as early as the stage studied, then it is an excellent example of developmental acceleration or heterochrony. If, on the other hand, the connexion is not established at all, which I think is more probable, then *P. variabilis* is the first anuran larval form where both the processus ascendens and oticus connexions are wanting.

Further study of the development of the cranium in this and allied forms is engaging my attention, and the result will be published elsewhere.

My thanks are due to Prof. A. Subba Rau for helpful criticisms.

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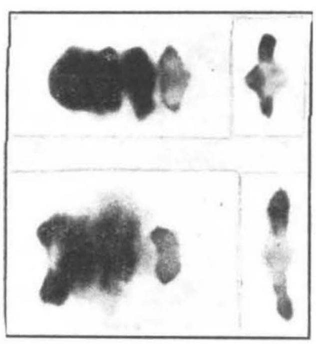
Differentiation of Heterochromatic Regions during Meiosis

HETEROCHROMATIC regions have been revealed in the somatic cells of a large number of plants and in certain animals during the metaphase by many investigators. They are usually situated around the centromeres and at the distal ends. One of the characteristic properties of the heterochromatic regions is the intensive absorption of hæmatoxylin and other stains. Genetically, they are poor in genes in *Drosophila* and are usually called 'inert regions'.



The chromosomes have usually a spiral structure during the meiotic metaphase. This is characteristic for both heterochromatic and euchromatic regions. Differentiation of heterochromatic and euchromatic regions in pure species during the meiotic metaphase is technically more difficult than in some species