would return to their normal levels in a similar manner. The transient increase in the noradrenaline content, above the normal value, indicates that the rate of methylation of noradrenaline to adrenaline is slower than the rate of formation of noradrenaline. It is of interest that Butterworth and Mann[4] have obtained a similar depletion and replacement of catechol amines in cat adrenal glands, depleted with acetylcholine. Work is now in progress to determine whether this action of reserpine is central or peripheral.

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B. A. Callingham
Monica Mann

Department of Pharmacology,
School of Pharmacy,
17 Bloomsbury Square,
London, W.C.1.
Nov. 13.

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Nuclear Transplantation in *Xenopus laevis*

Briggs and King[1] have devised a technique with which they were able to transplant nuclei from cells of early embryos into unfertilized eggs of *Rana pipiens* from which the female pronucleus had been removed. In this way they could test the extent to which a nucleus from embryos up to neurula stages could produce normal development when transplanted into an enucleated egg[2].

We have modified this technique to start similar experiments on *Xenopus laevis*. We have not so far removed the female pronucleus because it does not usually participate in development. This useful fact was discovered through the use of a nuclear marker, visible in interphase nuclei (Fischberg, M., Smith, S., and Elsdale, T., unpublished).

A survey of the number of chromosome sets present in 70 normal and abnormal tadpoles gave the results shown in Table 1. The tetraploid embryos are usually due to the doubling of the diploid chromosome number of the injected nucleus, and not to the participation in development of the female pronucleus[1].

Table 1

	No.	Per cent
Diploids	55	79
Tetraploids	12	17
Mosaics, etc.	3	4
Total analysed	70	100

Table 2 consists of the combined results from six of our more successful experiments, and shows the number of embryos that appear normal at various stages of development up to the feeding tadpole. The donor nuclei came from embryos between late blastula and late gastrula stages, and between these limits the proportions of normal host embryos and the types of host abnormalities at different stages are similar; these appear not to be dependent upon the developmental stage of the donor nucleus and the germ layer from which it derives. Table 2 is

Table 2

	No.	Per cent
Total transfers	905	100
Uncleaved	387	43
Cleaved normal and abnormal	518	57
Normal gastrulæ	193	21
Normal at hatching	89	10
Normal feeding tadpoles	61	7

heterogeneous, because it consists of the results from twelve different categories of donor nuclei (four temporal stages and three germ layers); we find that the numbers in the individual categories are too small to relate the abnormalities of transplanted embryos to the origin of the donor nucleus.

We have obtained normal tadpoles from eggs injected with ectoderm and endoderm nuclei from late gastrulæ. King and Briggs[2] obtained 10–12 mm. tadpoles from nuclei of ectoderm, chorda-mesoderm, and endoderm from late gastrulæ of *Rana pipiens*; but the majority of transplants from chorda-mesoderm and endoderm gave embryos developing syndromes of abnormalities specific for the origin of the donor nucleus.

We are continuing the work along two main lines: (*a*) to find the latest stages that provide donor nuclei which give normal development when transplanted into unfertilized eggs; (*b*) to see if embryos develop syndromes of abnormalities specific for the origin of the donor nucleus.

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M. Fischberg
J. B. Gurdon
T. R. Elsdale

Department of Zoology and
Comparative Anatomy,
University Museum, Oxford.

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Effects of Heat and Loss of Moisture on the Dormancy of Barley

In a paper on the effects of desiccation on delayed germination in barley it is suggested that ripening and germination are directly related to the moisture-content of the grain[1]. The observation is made that complete germination occurred when the moisture content naturally fell to 12·7 per cent or when artificial drying was used.

'Desiccation' was the word employed to describe drying at 40° C. It is the purpose of the present communication to direct attention to the fact that temperature can have an effect independent of the loss of moisture of harvested samples showing dormancy under seed testing conditions[2].

In an attempt to speed germination, treatments were given which included heat-sealing in polythene bags, some of which contained self-indicating silica gel, and oven-drying at 39° C. Room temperature, in late summer, varied between 16–24° C. Moisture-content was determined with a Marconi 933*A* meter, and checks made with a Carter/Simon oven. From each treatment 300 seeds were placed on damp sand.

Samples of Pioneer barley *A*27 (moisture content 16·3 per cent and germination 95 per cent), known to be dormant were sealed in polythene with silica