the unfortunate victim is pinned on its side and in less than ten seconds emasculation is effected.

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FOREIGN JOURNALS IN THE USSR

IN the article on "The Fifteenth International Congress of Physiology: The Congress and Russian Physiology," printed in the issue of SCIENCE for September 13, I stated that our Russian colleagues in physiology are being, to some degree, intellectually starved, owing to their inability to buy foreign journals; and I appealed to their Government to help them by providing the "exchange" necessary to buy more. Here are some facts concerning the total number of copies of three British journals sent to the USSR and, for comparison, to the U. S. A.:

	USSR	U. S. A.
Journal of Physiology	27	241
Journal of Experimental Biology	7	130
Biochemical Journal	47	374

That the "exchange" is available is shown by the fact that the Government of the Soviet Union is spending a large sum of money in buying Professor Kapitza's apparatus from Cambridge University: a sum large enough to pay for 100 subscriptions to each of these journals for 15 years.

These figures show the situation rather clearly. In the USSR, it is frequently and loudly announced that the Government is far more concerned in helping science than is that of any other country; the net result, however, is that in the United States government and private effort together buy nine times as many English journals in physiology and its two allied sciences as does the Government of the USSR. If this fact can be brought to the attention of the authorities in the Soviet Union it may stimulate them to do better, and so considerable advantage may result to our colleagues there.

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MISTAKEN IDENTITY?

MY attention was recently called to a brief, center-page article in *Liberty* for November 16, 1935, on "Not one in a thousand knows, sometimes air is heavier than water," by E. G. Conklin. There is a cartoon of a mythical professor at a laboratory table, and I am wondering if the announced author of the article is also mythical. As I have never written or spoken a word on the subject discussed, I am taking this means of disclaiming any responsibility for the article. I do not know of, nor can I find in any of the biographical dictionaries any other E. G. Conklin than myself, and I have asked the editors of *Liberty* to inform me who the reputed author of this article is, but the editorial secretary writes in reply: "I am sorry that I can not give you the address of our Mr. E. G. Conklin, who is the author of 'Not One in a Thousand Knows.' But if you wish to send a letter to him in our care, I'll be glad to see that it is forwarded to him promptly. Strange enough, the author of this feature is also connected with one of our large universities."

E. G. CONKLIN

PRINCETON, N. J.

SPECIAL ARTICLES

A HIGHLY ACTIVE PRESSOR SUBSTANCE FROM CEREBRAL VENTRICULAR FLUID OF HUMAN BEINGS

PAGE[1] has reported that human blood, cerebrospinal and ascitic fluid yield extracts with alcohol which are vasopressor. They differed from other extracts by the fact that activity is dependent on the functional intactness of the central nervous system. Destruction of the central nervous system below the mid-brain abolishes their effectiveness in elevating arterial pressure in anesthetized cats.

Clinical observation of patients suffering from essential and malignant hypertension suggests that in some of them signs and symptoms occur simulating those following irritation of centers in the diencephalon. This "diencephalic syndrome" has been recently described by Page.[2] Search was therefore made to ascertain whether the fluid which bathed this portion of the brain contained substances which might stimulate it.

Ventricular fluid was secured at autopsy and alcoholic extracts prepared. After removal of the alcohol and precipitate they were injected intravenously into cats anesthetized with ethyl urethane.

Arterial pressure fell slightly and rose sharply to a high peak. Similar extracts prepared from plasma cause arterial pressure to rise more slowly, but the elevated pressure is maintained for much longer periods (10 to 30 minutes) (Fig. 1). Destruction of the central nervous system abolishes completely this action, in this manner resembling extracts of plasma. Removal of the adrenal glands one-half hour before injection does not abolish the extract's action, hence

[1] I. H. Page, *Jour. Exp. Med.*, 61: 67, 1935.

[2] I. H. Page, *Am. Jour. Med. Sci.*, 190: 9, 1935.

it appears unlikely that its effect on blood pressure is mediated by adrenalin.

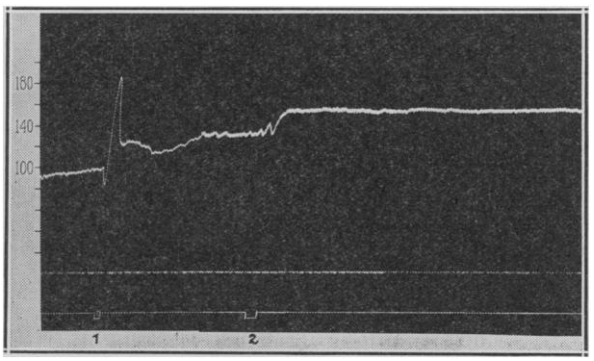

FIG. 1. Effect on cats' blood pressure of injection of extract of cerebral ventricular fluid from a patient suffering from malignant hypertension. No. 1. Extract equivalent to 4 cc of ventricular fluid. No. 2. Extract equivalent to 10 cc of blood plasma of same patient. Time marker = 10 seconds.

Pressor substance from ventricular fluid resembles that from plasma in many respects, but its concentration or potency is far greater. Quantitative aspects of it in relation to hypertension will soon be reported.

Ventricular fluids from five cases of malignant hypertension, one case of hypertension associated with adrenal carcinoma and three cases of nephritis with hypertension have been examined. All were found to contain pressor substance. Fluid obtained at operation from the lateral ventricles of a patient suffering from epilepsy with hydrocephalus, and one with a cerebral tumor, yielded extracts which were inactive. Ventricular fluid from a patient with normal blood pressure who died as the result of a gun-shot wound contained but moderate amounts. Spinal fluid but rarely contains it in high concentration.

Assay of the potency of extracts is difficult on account of dependence on the functional intactness of the central nervous system for the response. Sufficient numbers of ventricular fluids from patients suffering from different diseases have not as yet been examined to furnish grounds for claim that this pressor substance is always associated with hypertension.

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EFFECTS OF ETHYLENE ON PLANT GROWTH HORMONE

HETEROAUXIN, or plant growth hormone (β-indolylacetic acid) is known to have several effects on plants, including promotion of stem elongation, inhibition of bud growth, stimulation of root formation, production of stem swellings and stimulation of epinastic movements of the leaves. With the exception of the first two, ethylene gas also has these effects.

According to A. E. Hitchcock, ethylene, heteroauxin and other substances all act in essentially the same way.[1] This conclusion is based, apparently, on the similarity of the effects of ethylene to those of heteroauxin. There are many cases, however, where these two substances do not have the same effect.

For instance, heteroauxin increases the growth rate of *Avena coleoptiles,* and the amount of increase is dependent on the amount of heteroauxin supplied.[2] If ethylene has the same effect, it should increase the growth rate, and the degree of increase should depend on the concentration of the ethylene. However, four groups of Avena seedlings were placed for twenty-four hours in, respectively, air, 0.001 per cent. ethylene, 0.2 per cent. ethylene and 2 per cent. ethylene. The rate of growth in all three of the groups treated with ethylene was approximately the same, and was about 30 per cent. less than the rate of growth of the controls. It thus appears that, in this case, ethylene could not have acted in the same manner as a growth hormone.

It is well known also that heteroauxin increases the number of roots formed by pea cuttings.[3] These cuttings can take up enough hormone to give maximum root formation when placed inversely in a solution of hormone for twelve hours. However, when they were placed for twenty-four hours in an atmosphere containing ethylene (whether treated with hormone or not), root formation was not affected.

Cuttings of *Salix* were also used for tests on the effect of ethylene. The experiments described here were performed in May. The cuttings were of second-year wood and about eighteen centimeters long. Four groups of cuttings were treated in different ways, as follows: (1) controls, (2) 0.1 per cent. ethylene for two weeks, (3) heteroauxin applied to the top of the cutting in the form of lanoline paste,[4] (4) treated both with heteroauxin and 0.1 per cent. ethylene. The roots were counted two weeks after the experiment was

Method of treatment	Average number of roots per cutting	Increase over controls caused by treatment
Controls	11.9 ± 0.6	
Ethylene	16.2 ± 1.2	4.3
Heteroauxin	23.1 ± 1.5	11.2
Ethylene and heteroauxin	40.5 ± 2.3	28.6

[1] Contributions from Boyce Thompson Institute, 7: 1, 87, 1935.

[2] F. W. Went, *Botanical Review,* I: 162, May, 1935.

[3] Proceedings, Koninklijke Akademie van Wetenschappen te Amsterdam, XXXVII: 7, 445, 1934.

[4] The lanoline paste contained one part of heteroauxin to two thousand of lanoline.