It is quite likely, of course, that treatments with these chemicals stimulate the production of gentiobiose.

Details of these experiments will be published elsewhere.

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CHEMICAL EXAMINATION OF THE LIPID FRACTION OF ROYAL JELLY

HEYL[1] has reported that dilute NaOH extracts or aqueous pyridine extracts of royal jelly, when injected subcutaneously for five days into 21-day-old female rats, caused an increase in follicular activity of the ovaries. Melampy and Stanley[2] have recently failed to confirm this finding. However, it is important to note that the latter workers used *acetone-dried* royal jelly. The use of such a solvent to remove water completely would also remove sterols, phenols, acids, esters, glycerides, etc., some of which are the very types of compounds most likely to possess gonadotropic activity.

For nearly two years the chemical fractionation of royal jelly has been progressing in this laboratory and biological testing of the fractions has been commenced. In a paper at present in press, the authors describe the preliminary results of the chemical examination. Royal jelly contains an ether-soluble fraction of some complexity from which the authors have been able to isolate six substances, and there are indications of several others. Royal jelly, dried to constant weight over P_2O_5 and then powdered, when exhaustively extracted with ether in a Soxhlet apparatus, yields 10 to 15 per cent. of its weight as a cream-colored, semi-crystalline material of waxy consistency. This fraction has a characteristic flowery to spicy odor. The ether-soluble material contains about 0.1 per cent. phosphorus and 0.3 per cent. nitrogen. About 85 per cent. of this fraction can be extracted from ethereal solution by dilute sodium hydroxide. The separation of phenols and acids from this alkali-soluble material, and of wax, phospholipid, sterols and glycerides from the alkali-insoluble portion, has been accomplished. The difficulty of obtaining sufficient quantities of these individual substances delayed commencement of the biological experiments.

However, some feeding experiments performed over a year and a half ago, using the fruit fly, *Drosophila melanogaster,* revealed that the ether-soluble fraction possessed a remarkable influence on the number of eggs laid and the rate of reaching sexual maturity. These results have not been reported because we had hoped to be able to identify the compound responsible for this effect before publishing. The failure of Melampy and Stanley, using acetone-dried royal jelly, to confirm Heyl's results, appears to support our finding that the active material influencing the reproductive system is in the ether-soluble fraction. The detailed results of the Drosophila experiments will be published shortly. Our chemical and biological studies are being continued.

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SCIENTIFIC APPARATUS AND LABORATORY METHODS

ACCURACY IN ANATOMICAL DRAWING

To encourage greater accuracy in anatomy students' drawings, this year one class was provided with 8×10 inch sheets of cellulose acetate (du Pont Plastacele, 1/50 inch thick) ruled in centimeter squares with black auto lacquer. The students themselves prepared 8×10 inch heavy bristol board sheets with India ink rulings in centimeter squares (one side), in $1\frac{1}{2}$ cm squares (opposite side), in $\frac{1}{2}$ cm squares (another sheet, one side), and in 2 cm squares (opposite side). Both cellulose acetate and bristol board sheets were numbered vertically and horizontally so that the coordinates of points could be read off with ease.

For drawing, the clear cellulose acetate sheet is laid over the specimen and the appropriate surface of the proper bristol board inserted under the drawing paper. To draw natural size, the surface of the bristol board ruled in centimeter squares goes under the drawing sheet, its rulings clearly showing through the page. To enlarge to $1.5 \times$ the $1\frac{1}{2}$ cm ruling is used, for $2 \times$ the 2 cm ruling, for reductions to $0.5 \times$ the $\frac{1}{2}$ cm ruling. By quickly plotting the chief features of the structures to be drawn on their appropriate coordinates on the drawing paper, the outlines are easily obtained.

Increased facility for making accurate drawings is especially apparent in dissection of nervous or circulatory systems, where simultaneous vision of all related parts is impossible without extensive excision of other organ systems. If the tip of the snout, the sternum or other landmark be fixed upon for repeated reference, the details visible at any one time may be plotted in on the coordinates, then intervening structures moved aside, and the deeper ones exposed. Replacing the cellulose acetate sheet with reference to the chosen point allows the drawing of deeper structures to continue with no distortion. This has proven especially valuable where superficial structures are exposed days before deeper ones. The drawing begun with reference to well-chosen points can be continued after deeper portions are exposed even though the superficial struc-

[1] H. H. Heyl, SCIENCE, 89: 540, 1939.
[2] R. M. Melampy and A. J. Stanley, SCIENCE, 91: 457, 1940.

tures have been destroyed or thoroughly distorted in the interim.

Constant reference of structures in three dimensions to the strictly two-dimensional cellulose acetate sheet makes it much easier to represent these structures than would be believed possible. The drawings show great improvement.

By this method much laboratory time is saved which has hitherto been spent with ruler, measuring these same features of the animal, and in calculating magnifications before drawing the first rough outline. It reduces erasure to a minimum since the squares which show through the drawing paper can be lifted out when not in use. The ruled cellulose acetate sheet in being constantly over the specimen as it is drawn, encourages interest in the accuracy which is so essential in a science laboratory.

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A SIMPLE ARTERY CLIP

WHILE many manufactured artery clips or serrefines are entirely satisfactory, there are none on the market which are inexpensive. This factor becomes important especially in class use or in operations where a great number are needed. An easily made clip was therefore designed which costs only a fraction of a cent.

A glance at the accompanying diagrams will show

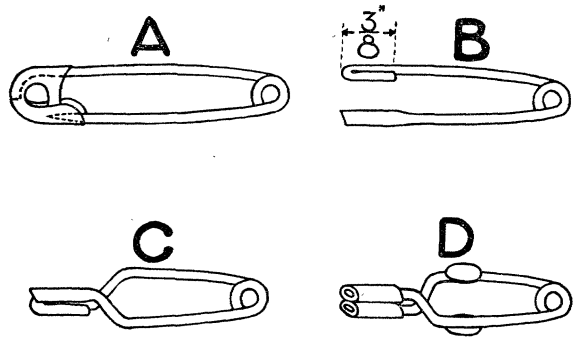

FIG. 1.

the ease with which the clip is made. Sturdy No. 3 safety pins are procured. First, the head is pried off and the head arm is straightened, then bent over (B). The sharp end of the other arm is clipped off and flattened. Next a double bend is put in each arm as shown in (C). The arms may be sprung apart to give the jaws the desired closing power. It is also advisable to bend the head arm counter-clockwise and the sharp arm clockwise to prevent over-riding of the jaws. A quarter-inch copper washer is soldered on each arm and rubber spaghetti tubing is slipped over the jaws completing the clip.

In this laboratory comparison of these clips with ready-made types has not only proved them to be as efficient, but also to be in many cases less damaging to the arterial wall.

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ISOBUTYL METHACRYLATE AS A MOUNTING MEDIUM FOR HISTOLOGICAL PREPARATIONS

RECENTLY O'Brien and Hance[1] advocated isobutyl methacrylate as a substitute for Canada balsam in mounting histological preparations. Since these authors have stressed several advantages of this new plastic over balsam it seems advisable to point out that this substitute has proved unsatisfactory with certain histological techniques used in this laboratory.

Celloidin sections, measuring about 30×50 mm and 25 micra thick, through the entire hemisphere of a macaque's brain were stained with thionine for nerve cells (Nissl) or according to the Weil method for myelinated nerve fibers. Such sections mounted without a cover glass (as were the preparations of O'Brien and Hance) in xylene solutions of various concentrations of isobutyl methacrylate polymer (du Pont), warped on hardening and the surface of the medium roughened. Mounting such sections in this medium under a cover glass caused cracks and fissures in the preparations. Moreover, it was found that whereas the stain in the Nissl preparations was unaffected, the bright blue of the myelin sheaths in the Weil preparations turned to a dull gray in this medium and some of the finer detail was lost.

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[1] Harold C. O'Brien and Robert T. Hance, SCIENCE, 91: 412, 1940.

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