large numbers in this medium if present in the feces. Transfers are made by removing a small portion of the sediment and transferring it to an uninoculated tube which should have been kept in the incubator at 37° C. Transfers are most successful if made every twenty-four or forty-eight hours, but successful transfers have been secured from an eight-day old culture, and motile amoebae have been found in cultures as old as eleven days. Transfers in this medium have been carried on in this laboratory for over two months and apparently may be continued indefinitely.

The excellent growth and reproduction of *Endamoeba histolytica* in this medium composed entirely of Locke's solution, slightly modified, and human, horse or rabbit inactivated blood serum, demonstrates that media containing a solid substratum containing egg albumen or blood is not essential for the cultivation of this species and that neither egg albumin nor blood is necessary as a part of the food supply of this amoeba, as stated by Kofoid and Wagener.[2] A more detailed description of our experience in the cultivation of *Endamoeba histolytica* in this medium, together with some account of the morphology and biology of the organism as observed under cultivation, will be published in the September number of the *American Journal of Tropical Medicine.*

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A RAPID METHOD FOR PREPARING THIN SECTIONS OF UNDECALCIFIED BONE

THE usual method of grinding slabs of bone between hones in order to prepare sections thin enough for microscopic examination is very laborious and requires more time than many workers are willing to devote to it. Equally satisfactory sections can be prepared with a great deal less labor and in a much shorter time by using files. It is possible to saw off and grind a radial slab 5 cm long or half of a transverse slab of ox femur within an hour.

Thin slabs of bone should be secured by sawing. Clamp a suitable piece of bone in a vice so that it projects 2 mm or 2.5 mm beyond the jaws. Avoid gripping it too tightly lest excessive strain cause microscopic cracks which will result in the section breaking up as it is ground thin. The jaws of the vice should be protected by straight-edged strips of metal to prevent damage by the saw. Saw off the slab with a hack saw, using the parallel edges of the metal guards as guides in order to secure a slab with parallel surfaces. With reasonable care a smooth slab about a millimeter in thickness should result. Rub one surface of the slab on a twelve or fourteen inch flat mill file to remove any roughness due to the sawing. Attach the partially smoothed surface to the metal face of an old half-tone plate of suitable dimensions. This can be done by heating the plate in a flame and rubbing a piece of hard paraffin over it, then pressing the slab of bone into the molten paraffin. It is best to press it in by holding some object with a flat surface against it in order to insure uniform pressure over the entire area. Chill the paraffin while the slab is still under pressure by dashing cold water over it. Trim away any excess of wax and rub the slab on the file, using the half-tone plate as a holder. When a perfectly plane surface has been produced, polish it by rubbing for a few minutes on a flat hone. A hone that has been rendered concave by sharpening microtome knives is useless until it has been resurfaced. Very critical workers may wish to impart an additional polish by rubbing on a glass plate with optician's polishing powder. Reverse the slab on the plate and rub the other surface on the file until it is thin enough over its entire area to permit of seeing the etching on the plate beneath it. Polish the second surface in the same manner as the first. Loosen the section with xylol and transfer to a dish of xylol to remove the wax. If dust adheres, transfer successively to alcohol and water and wash carefully with soap. If it be desired to entrap air in the spaces between the bone cells, allow the section to dry and mount directly in melted balsam. If fully cleared sections be desired, dehydrate, clear and mount in the usual manner. If several mounts are to be made from one section, fine scissors should be used.

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SPECIAL ARTICLES

NOTE ON ARTERIOSCLEROSIS IN RABBITS CAUSED BY SOME SAMPLES OF URANIUM NITRATE[1]

IN the course of some experiments that were being made to find whether or not the renal atrophy produced by uranium nitrate was accompanied by elevation of the blood pressure, there was found at autopsy in three rabbits which died in succession a severe arteriosclerosis of the aorta and of the peripheral vessels. In one animal the aorta appeared from the outside not unlike the trachea, this ring-like appearance extending into the carotids, subclavians, renals and iliacs, and even into the thyroid and para-

[2] Kofoid, C. A., and Wagener (1925), Univ. Cal. Pub. Zool., XXVIII, 136.

[1] From the H. K. Cushing Laboratory of Experimental Medicine, Western Reserve University, Cleveland, Ohio.

thyroid arteries. The condition ended rather sharply at the brachials and femorals. In the pulmonary artery there were two small aneurisms (1 mm diam.) and several small calcified plaques. In another animal the lesions were less severe and less extensive; the aorta was thickened and dilated, but the intima was smooth throughout the arch and the thoracic portion. In the abdominal portion and below, however, there were present many delicate rings of calcification, embracing the whole circumference of the vessel and extending down into the iliacs. The carotids and subclavians were the arteries most affected, all four showing this annular calcification throughout the entire length of the vessels. The pulmonary artery was thickened and on its anterior wall there was a saccular aneurism (ca. 7 mm in diameter). The condition in the third animal was intermediate to the other two. In this rabbit the calcification appeared not in rings but as conglomerate calcified plaques, large and more abundant at the root of the aorta and diminishing in number and size toward the periphery. The carotid, subclavian, mesenteric and iliac arteries were also affected.

Along with this medial calcification of aorta and large vessels there was found in the first and third animals described a nephritis of varying degree, but the novel feature of this nephritis was the presence of calcification in the interlobular arteries and in the afferent vessels to the glomeruli, particularly in the kidneys of the first animal. In this rabbit the destruction of the cortex was well advanced, especially in its outer third, where many glomeruli were shrunken and their tufts were obliterated by an abundant deposit of calcium salts. The tufts were intact in the third animal, but in both cases there was a striking deposit of calcium in the Bowman's capsules, which, in v. Kossa's preparations, look like an etching of these structures.

In the kidneys of the second animal there was neither calcification of the vessels nor calcification of Bowman's capsules. There was a moderate, subacute nephritis, mainly tubular, with occasional thickening of glomerular capsules, as has been described in experimental uranium poisoning.

A perusal of the work of Dickson[2] shows that the aorta was examined in practically all his animals (guinea pigs, rabbits and dogs), and lesions looked for, with negative findings. It was suggested in explanation of my results that some impurity might exist in the uranium nitrate used, which, either independently of, or in association with uranium, was responsible for this unexpected finding. Accordingly, three other samples of uranium nitrate were obtained from different sources and the experiments repeated. A complete report will be published at the end of the experiment, together with the blood pressure tracings. To date, six animals (including the three of this note) which have died as a result of the intoxication with two of the samples have shown a severe arteriosclerosis. Of these, only two have shown calcification of the arterioles and Bowman's capsules in the kidney. Of the animals intoxicated by the other two samples, the six that have died had normal aortas.

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[2] Dickson, E. C., "A Further Report on the Production of Experimental Chronic Nephritis in Animals by the Administration of Uranium Nitrate," *Arch. of Int. Medicine*, 9, 557 (1912).

THE RELATION OF THE MALE TO THE HATCHABILITY OF HENS' EGGS

PHYSICAL characters of eggs appear to be of much less importance in relation to the hatchability of fertile hens' eggs than either the genetic makeup of the hen laying the egg or of her male mate fertilizing the eggs. No significant correlation has so far been discovered at the Massachusetts Agricultural Experiment Station between any measurable physical character of eggs and the percentage of such fertile eggs hatching into normal chicks.

Below are presented the pullet-year fertility and hatching records of seven Rhode Island Reds, together with their yearling fertility and hatching record. All birds were mated to the same Rhode Island Red cockerel the pullet year and to a second cockerel when yearlings.

Females	Cockerel No. C8081		Cockerel No. E280	
	Per cent. of eggs fertile	Per cent. of fert. eggs hatched	Per cent. of eggs fertile	Per cent. of fert. eggs hatched
C7129	67	0	97	53
C7132	100	0	98	55
C7297	92	0	94	73
C7310	100	0	89	53
C7482	88	0	50	0
C7716	48	10	0	....
C7738	100	0	100	82

The ability of the two males to fertilize the eggs does not differ significantly. Cockerel C8081 was almost unable to sire any chicks, while cockerel E280 sired chicks from five of the six hens laying fertile eggs. The above data are in agreement with extensive data available at this station indicating that the male is an important factor in hatchability and also that hatching power is inherited in Mendelian fashion.

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