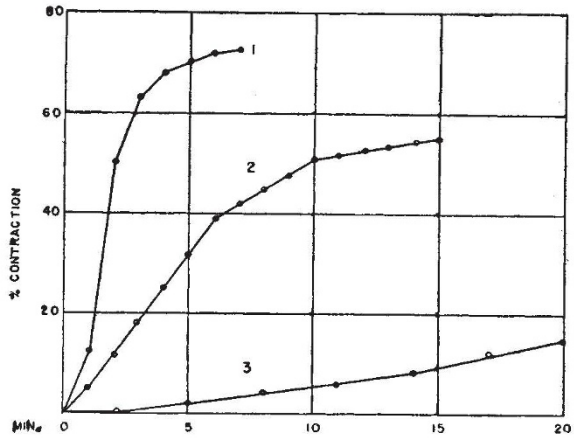
Material	Amounts of actomyosin and myosin in the solution extracted from 1 gm. material		
	Mixture	Myosin	Actomyosin
Non-pregnant human uterus	16	11	5
Human uterus during labour (Cæsarean sect.)	22	9	13
Human cross-striated muscle	44	18	26

The absolute and relative actomyosin content of the non-pregnant uterus extracts is much lower than that of cross-striated muscle, and increases with advancing pregnancy, rapidly reaching its maximum immediately before parturition.

The contraction of a thread of actomyosin, followed in time, clearly demonstrates the differences between the pregnant and the non-pregnant uterus (see graph).



Contraction of actomyosin threads prepared from human uteri: (1) during labour; (2) from non-pregnant uteri; (3) from uteri after X-ray castration

These observations seem to explain many problems in the physiology and even pathology of gravidity and parturition (abortion at too high, and very weak labour at too low, concentrations of actomyosin ?).

More work is planned along this line, and a detailed report will appear elsewhere.

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Production of Riboflavin and Allied Substances during the Growth of *C. diphtheriæ*

While studying, by paper partition chromatography[1], the utilization of amino-acids during the growth of the Park Williams No. 8 strain of *C. diphtheriæ*, we noted a strong yellow fluorescence with ultra-violet light of culture filtrates of the organism grown on a casein hydrolysate medium prepared essentially according to the method of Mueller and Miller[2]. When such culture filtrates were run on chromatograms using *n*-butanol-acetic acid as the solvent[3], two strongly fluorescent yellow spots were observed when the dried paper was placed under an ultra-violet lamp. Neither of these spots gave any colour when the paper was sprayed with 0·1 per cent (w./v.) ninhydrin in chloroform. One of them was in a position approximating to that occupied by proline and the other to that occupied by the basic amino-acids.

It was suggested to us by Dr. W. A. Rawlinson that these fluorescing spots might be due to flavins, and we have since learned that Wadsworth and Crowe[4] have shown that a special strain of *C. diphtheriæ*, grown on a synthetic medium, elaborated an unidentified flavin. We found that the faster moving spot had the same R_f value as riboflavin when run with either *n*-butanol-acetic acid or collidine as solvent. Moreover, when these spots were eluted from the chromatogram, both showed riboflavin activity, as did the original culture filtrate, when examined by the usual microbiological technique using *Lactobacillus casei* E. as the test organism. The crude culture filtrate had an activity equivalent to 25 μgm. of riboflavin per ml.

We found, also, that the fluorescent material behaved chemically like riboflavin. It was resistant to the action of potassium permanganate and hydrogen peroxide, would pass through a 'Cellophane' bag, and could be adsorbed on Fuller's earth and 'Super-filtrol', from which it could be eluted with small volumes of 20 per cent (v./v.) pyridine in 2 per cent (v./v.) acetic acid solution. Such an eluate when chromatographed gave two fluorescent spots, in the same position but much more intense than those on the chromatogram of the original culture filtrate. The eluate, when evaporated to dryness and taken up in water, once again showed riboflavin activity when tested by microbiological assay methods.

Therefore there is strong presumptive evidence that the faster moving of the two fluorescent spots obtained on chromatograms of culture filtrates of the Park Williams No. 8 strain of the diphtheria bacillus is riboflavin itself, while the other may possibly be either riboflavin phosphate or flavine adenine dinucleotide, both of which have been reported by Crammer[5] as having R_f values approximating to that obtained by us for this slower moving spot.

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Sex and Organ Specificity in the Response of β-Glucuronidase to Extrinsic Agents

It was considered that the correlation shown to exist between the β-glucuronidase activity of a tissue and the amount of cell proliferation in progress[1] could explain the rise in uterine glucuronidase found by Fishman and Fishman[2] to follow œstrogen administration to ovariectomized mice. In a preliminary kinetic study of the enzyme in mouse uterus, the *p*H-activity curve for the hydrolysis of phenol β-*d*-glucuronide was found to be almost symmetrical about *p*H 4·5. This is in contrast to the curves