

and that is the reason why it takes place immediately. The inhibition of the MO fraction does not alter the diffusion phenomenon.

The intimate mechanism of action of merthiolate is now being investigated and also the action of other hyaluronidase inhibitors (heparin and sodium salicylate) on the various enzyme fractions. The results of such experiments will be reported *in extenso* in a further paper.

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Zusammenfassung

Merthiolat zeigt eine hemmende Wirkung auf die Hyaluronidase des Hodens. Dennoch ist es mittels verschiedener Konzentrationen jenes Stoffes möglich, eine selektive Hemmung der Mukooligosaccharase-Fraktion (MO) bei fast vollständiger Schonung der depolymerisierenden Fraktion (MP) zu erzielen.

Noradrenaline and Adrenaline in the Suprarenals of the Guinea-Pig

HOLTZ and SCHÜMANN¹ have given evidence to show that extracts of suprarenals of cattle in addition to adrenaline probably contain noradrenaline. This finding has been confirmed by EULER and HAMBERG² and by GOLDENBERG *et al.*³. L-noradrenaline has subsequently been isolated in pure form from suprarenals of cattle (BERGSTRÖM, EULER, and HAMBERG⁴ and from standard samples of epinephrine (TULLAR⁵).

The present experiments have shown that guinea-pigs suprarenals also contain noradrenaline as estimated with the colorimetric method of EULER and HAMBERG⁶ which permits quantitative estimation of both noradrenaline and adrenaline in a mixture.

The animals were killed by a blow on the neck and the suprarenals immediately prepared and extracted with 10 p.c. trichloroacetic acid which was removed from the filtrate with ether. The following figures were obtained:—

No.	l-Adrenaline µg per g	l-noradrenaline µg per g	per cent l-noradrenaline
(1) single pair	276	52	15.9 %
(2) single pair	272	122	31.0 %
(3) 5 pairs	223	70.5	24.0 %

The relative amount of noradrenaline compares well with the figures obtained by EULER and HAMBERG on 7 extracts of fresh suprarenals from cattle, 18.0–27.4 p.c., with an average of 23.6 p.c.

¹ P. HOLTZ and H. J. SCHÜMANN, *Naturwiss.* 35, 159 (1948).

² U. S. v. EULER and U. HAMBERG, *Nature* 163, 642 (1949).

³ M. GOLDENBERG, M. FABER, E. J. ALSTON, and E. C. CHARGAFF, *Science* 109, 534 (1934).

⁴ S. BERGSTRÖM, U. S. v. EULER, and U. HAMBERG, *Acta chem. Scand.*, 3, 305 (1949).

⁵ B. F. TULLAR, *Science* 109, 536 (1949).

⁶ U. S. v. EULER and U. HAMBERG, *Acta physiol. Scand.*, in the Press (1949).

L-Noradrenaline, which has previously been recognized as a neuroergone in adrenergic nerves¹ thus also occupies the position as a true hormone.

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Zusammenfassung

In Nebennierenextrakten von Meerschweinchen wurde folgendes gefunden: sie enthalten l-Noradrenalin, das 15,9–31% der gesamten Katecholverbindungen ausmacht.

¹ U. S. v. EULER, *Acta physiol. Scand.* 16, 63 (1948).

Measurement of the Pressure in Schlemm's Canal and in the Anterior Chamber of the Human Eye

It has been discussed if the pressure in Schlemm's canal is higher or lower than the intraocular pressure¹. The mechanism of the outflow depends on that question, but it has never before been possible to measure this pressure.

The discovery of the aqueous veins by ASCHER² and independently by GOLDMANN³ has opened the possibility of bloodless measurement of the pressure in Schlemm's canal. If an aqueous vein is blocked by compression so near to the limbus corneæ, that it has not yet joined any veins, the pressure above the block will be the same as in Schlemm's canal. Since there are some twenty connections between the canal and the episcleral veins this compression of a single one will not significantly increase the physiological pressure in Schlemm's canal. Determinations according to this principle have been made by means of a small pressure chamber connected to a manometer⁴ and fitted with a transparent rubber membrane and built-in lighting. The aqueous vein was blocked by a small pelotte, the pressure chamber applied above the block and the pressure adjusted until the collapse of the blocked vessel. The whole measurement was made under a magnification of 30.

By compression of the jugular veins by means of a pneumatic cuff the pressure in the episcleral veins can be raised. When it is high enough the flow of aqueous humour first stops and then turns in retrograde direction. This can best be seen where an ordinary vein empties into the aqueous vein. Just at the moment of balance when the flow has stopped the boundary pulsates. At this moment the pressure is the same in the aqueous and episcleral veins, in Schlemm's canal and in the anterior chamber of the eye and can be measured with the pressure chamber.

Thus, this is a new bloodless method of measuring the intraocular pressure (I.O.P.). However, the stasis does not leave the I.O.P. unaffected and the method does not directly yield values of the physiological I.O.P. In order to obtain such values the following procedure was adopted. First of all a tonometry was performed with a Sklar-Schiötz tonometer yielding a value of P_1 mm Hg. Then the cuff is inflated and the venous pressure at which aqueous flow ceases is determined (P_2). Immediately after this and without change in the degree of stasis a new tonometry is performed (P_3). The physio-

¹ S. DUKE-ELDER, *Brit. J. Ophthal.* 25, 287 (1926).

² K. W. ASCHER, *Amer. J. Ophthal.* 25, 31, 1174, 1301 (1942).

³ H. GOLDMANN, *Ophthalmologica* 111, 146 (1946); 112, 344 (1946).

⁴ E. SEIDEL, *GRAEFVE'S Arch.* 112, 252 (1923).