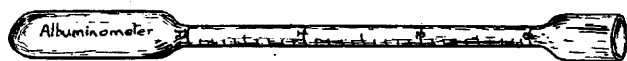


A NEW INSTRUMENT FOR THE RAPID AND  
ACCURATE ESTIMATION OF ALBUMIN  
IN THE URINE.HENRY R. HARROWER, M.D.  
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The albuminometer consists of a clear glass tube similar in shape to the accompanying illustration and so arranged that the bulb at the lower end contains slightly less than 5 c.c. The 5 c.c. mark R is accurately made on the narrow portion of the tube, which from this point is graduated in tenths of a c.c. for 3 c.c. The end is made large to permit of easy filling.

The tube is filled to the mark R with 5 c.c. with Goodman's reagent.<sup>1</sup> Having previously diluted the speci-



New albuminometer for use with Goodman's reagent. About one-third actual size.

men (one in ten is, perhaps, best), the dilution is added drop by drop, shaking between each addition, until a faint white cloud appears. The reaction is now complete and the amount of diluted urine added is read off on the scale. This corresponds to the amount of diluted urine that contains one-tenth of a milligramme of albumin. The amount in 100 c.c. or in a 24-hour specimen may then be easily ascertained. The accompanying table will save some calculation.

SHOWING AMOUNT OF ALBUMIN IN URINES OF DIFFERENT DILUTIONS.

C.C. of Urine Producing Reaction	Grams of Albumin per 100 cc. Urine				
	Dil. 1 in 10	1 in 5	1 in 3	1 in 2	Undil.
2.0	.05	.100	.166	.25	.5
1.9	.052	.105	.175	.263	.52
1.8	.055	.110	.183	.275	.55
1.7	.0586	.117	.196	.294	.58
1.6	.0625	.125	.208	.312	.62
1.5	.066	.132	.22	.33	.66
1.4	.0714	.142	.238	.357	.71
1.3	.0769	.153	.256	.384	.76
1.2	.083	.166	.276	.415	.83
1.1	.09	.18	.3	.45	.9
1.0	.10	.20	.33	.50	1.0
.9	.11	.22	.367	.55	1.1
.8	.125	.25	.416	.62	1.25
.7	.14	.28	.473	.71	1.42
.6	.166	.33	.55	.83	1.66
.5	.2	.4	.66	1.00	2.00
.4	.25	.50	.83	1.25	2.5
.3	.33	.66	1.1	1.66	3.33
.2	.5	1.00	1.61	2.5	5.00
.1	1.00	2.00	1.33	5.00	10.00

The method has the following advantages:

1. The time required to perform the test is reduced to a minimum—a few minutes at the most.
2. Greater accuracy than with any other quantitative method.
3. Very small amounts of urine are necessary for the test, facilitating the estimation of albumin in experimental physiology, etc.
4. Simplicity—no centrifuge or other apparatus required.

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1. Described by Dr. E. H. Goodman and Suzanne Stern in THE JOURNAL A. M. A., July 4, 1908, xxxviii. The reagent consists of the following:

Phosphotungstic acid ..... 1.5 gm.  
Hydrochloric acid (conc.) ..... 5 c.c.  
Alcohol 95 per cent., q. s. ad. .... 100 c.c.

## Therapeutics

## SCOPOLAMIN.

Scopolamin (hyoscin) is an alkaloid occurring in hyoscyamus together with hyoscyamin and hyoscyapirin, but in its manufacture is mostly obtained from other sources. It is closely allied to atropin, both in its chemical constituency and in its physiologic action.

The official preparation is *Scopolaminæ hydrobromidum*, which occurs as transparent, colorless, crystals of a bitter, disagreeable taste, soluble in alcohol, and very soluble in water. The beginning hypodermatic dose is .0003 gram (1/200 grain).

The official *Hyoscine hydrobromidum* is identical chemically and physiologically with the scopolamin hydrobromid.

Scopolamin (hyoscin) acts locally similarly to atropin, viz., it dulls and numbs the peripheral terminations of nerves, whether in the eroded skin or in mucous membranes, causes dryness of the throat, benumbing of the tongue, and a diminished secretion of saliva. It dilates the pupil more quickly than atropin, but the dilation does not last so long.

After absorption its action ordinarily is quite different from that of atropin both on the nervous system and on the circulatory system. Although there may be a slight period of cerebral excitement, the effect is generally hypnotic. This is especially marked when it is administered hypodermatically, a dose of 1/100 of a grain usually putting a patient to sleep in a few minutes. Occasionally scopolamin causes cerebral excitation similar to that caused by atropin, and perhaps even more active. Such patients show an idiosyncrasy against this drug, and as it is not of infrequent occurrence, should always be suspected until the patient's behavior under the drug has become known. A dose of 1/100 of a grain may cause wild excitement and delirium which may last for some time unless inhibited by a hypodermatic injection of morphin, or the administration of bromids or chloral. During such excitation the pupils are dilated, the throat dry, the face flushed, and the heart rapid.

Unlike atropin, which is a stimulant to the heart and a contractor of the blood vessels, scopolamin generally has but little such effect, and even an ordinary hypodermatic dose, 1/200 or 1/100 of a grain, may cause some cardiac and circulatory depression. In fact, when there is cardiac weakness scopolamin should not be administered. This unpleasant debilitating action on the heart is sometimes noticed when this drug is administered in delirium tremens; consequently, it should not be administered to any patient unless the circulation is at least fairly good and the patient can be at rest in bed. In other words, it is inadvisable to administer scopolamin to a delirious patient, when that patient must subsequently be moved to a hospital or to his home.

On account of the occasional undesirable stimulation of the brain by scopolamin and the frequent profound depression of the circulation that it can cause, the beginning dose to any patient whose tolerance is not known should be 1/200 of a grain hypodermatically. To repeat, it should be thoroughly understood that the action on the circulation clinically is never that of atropin. In other words, atropin may be administered in shock; scopolamin may cause shock.

The sleep from this drug lasts six or seven hours, and may be intensified or prolonged by the coincident administration of morphin. A combined injection of 1/200 of