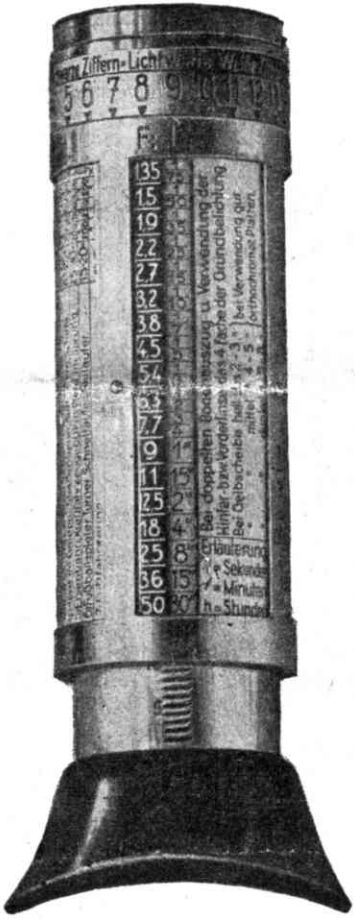
BEWI

Precision Exposure Meter

(Registered Design)

Reliable

Strong

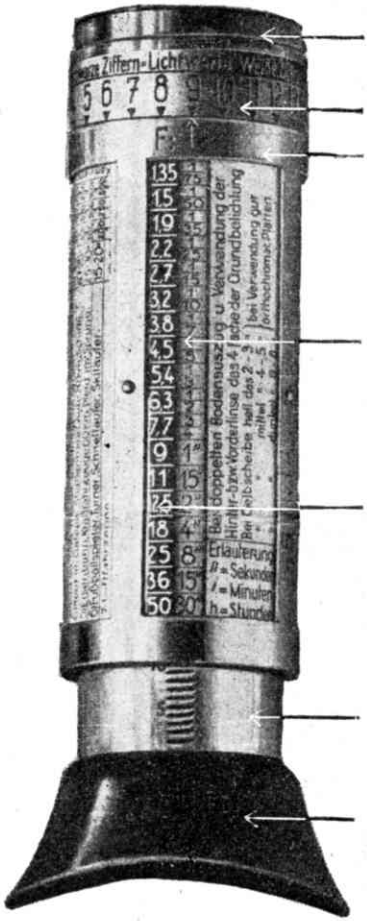


For the Tropics

Light

Rapid Adjustment. — Extremely Simple Manipulation.

Printed in Germany



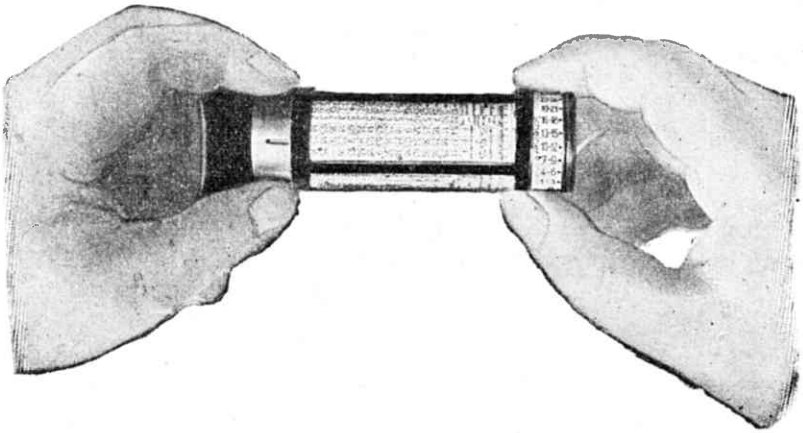
The most important factors for the production of good photos are: correct exposure and the right stop.

The „Bewi" Exposure Meter

measures the necessary exposure and gives you the correct stop under all conditions of light and with absolute reliability; it is entirely independent of altitude, geographic position, climate or season, daylight or artificial light. At the same time the manipulation of this meter is simplicity itself and will be readily understood even by the novice. This little instrument will soon become an indispensable auxiliary in all your photographic work.

Working Instructions: *)

The scale ring must first be adjusted to the »Scheiner« degree of sensitiveness of the plate or film you are using. To do this, hold the instrument as shown below:



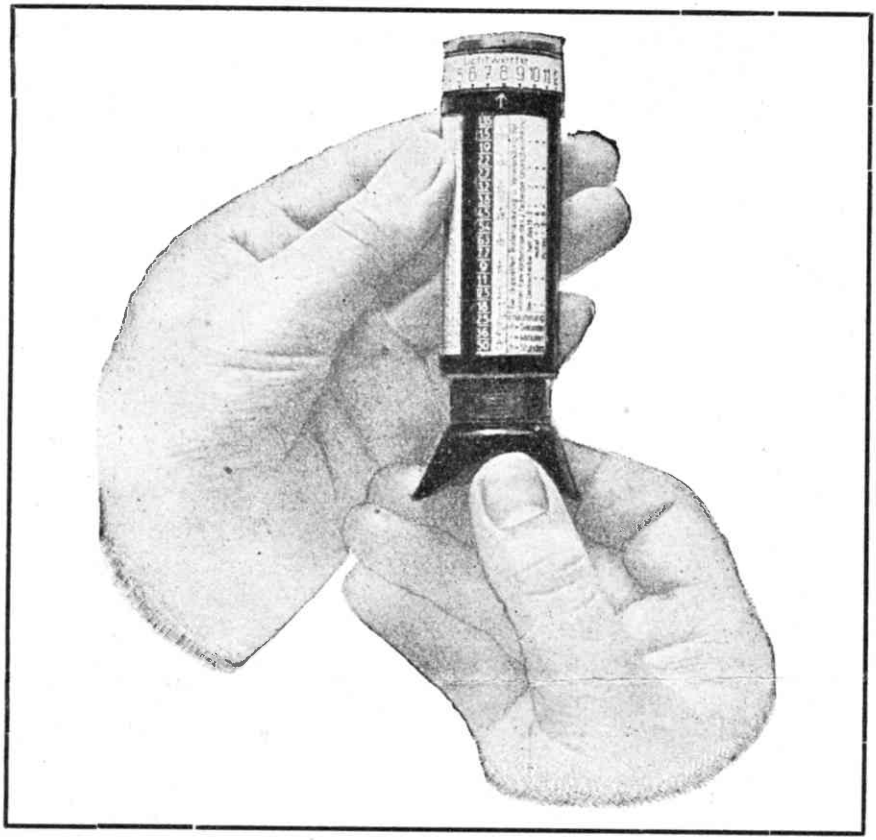
See that the spring snaps into the notch.

*) *Read this carefully; it is important.*

Now pull the lens tube out as far as it will go, remove your spectacles or eye glasses, apply the eye-piece firmly to your eye, point the meter towards a piece of sky and push the lens tube slowy in again until the numbers visible in the instrument are defined as sharply as possible. **This is the permanent focus or adjustment for individual eyesight and must be carried out with care.** When making this adjustment hold the instrument as follows:

Be careful not to expose your eyes to a strong glare just before using the meter. Now point the meter at the object you wish to photograph so that it appears on the blue screen. (The eye-piece must be held firmly against the eye; if you look into the instrument with your right eye, the left hand is held so as to cover or shade the left eye, and vice versa). After looking through the instrument for a certain length of time (the "reading time")*, note the highest number you can easily read without straining your eye. After this, remove the meter from your eye and turn the rib tube with the arrow mark to the light value on the scale ring corresponding to the number found by the reading as explained above; you can then read off the correct exposure with the stop corresponding to this exposure in the long aperture, as shown in the accompanying illustration.

*) *The reading times appertaining to different objects are given on the meter meter itself and also on page 7 under the heading „Final Remarks".*



Before pushing the lens tube in again, note at which point of the scale on the lens tube the outer rim of the rib tube is situated; this is the correct focus for your eyes and in future measurements you need only adjust to this point of the scale and then apply the meter to your eye for measuring the exposure.

If the light is very glaring (midday sun, snow-fields, expanse of water and the like), use your free hand, as shown in in the accompanying illustration, to shade your eye and thus prevent any ingress of false light at the side of the eye-piece.

In cold weather it may happen that the lens becomes dimmed through the warmth from your eye; if this happens, lift the eye-piece away from the eye for a moment, keeping the object on the screen in view the while; the lens will then immediately become clear again. Now hold the eye-piece again to the eye and after two or three seconds take the reading.

In order to extend the sphere of usefulness of this meter, a Depth of Focus Table has been provided on the outer tube for the usual focal lengths used by amateurs, further a Table for the longest permissible exposure of moving objects, and also a summary of the working instructions; finally the exposures for double extension of the bellows and for different colour filters have been added.

Special Remarks.

1.) On snow fields with their dazzling light and also on wide expanses of water exposed to the sun the human eye after a time tires and temporarily diminishes in power. In such cases it is necessary to extend the „reading time" to one or one and a half minutes, so that the eye has time to recover from the glare. After long and tiring tours on strongly illuminated snow-fields or glaciers, it is recommended to adjust the instrument one light value higher than was found by the actual reading.

2.) When photographing by artifical light (to which must also be reckoned moonlight) see to it that the source of light is not in front of the instrument during mea-

surement (in which case the light itself would be measured) but rather at the side of or behind you; of course you must not stand so that your body casts a shadow on the object to be photographed. The reading should be taking after 10 seconds reading time. For exposures of this kind use only ortochromatic plates or films.

Final Remarks and Points to Remember.

1) *Adjust to plate sensitiveness (Scheiner, Hurter & Driffield degrees, General Rating).*

2) *Focus lens accurately on numbers in instrument.*

3) *Never take the reading when the eyes are dazzled.*

4) *Hold the eye-piece firmly to the eye, so that no false light can enter.*

5) *Indoors, in the twilight, when the sky is clouded or when photographing by artificial light, take the reading after 10 seconds „reading time" and in the case of artificial light adjust the instrument one light value lower than that found by the reading.*

6) *In sunshine and in all cases of strongly illuminated objects, take the reading after 20 seconds of „reading time".*

7) *On dazzling snow-fields or strongly illuminated expanses of water, wait one minute before taking the reading.*

8) *After long and tiring tours on strongly illuminated snow or ice fields, wait 1 1/2 minutes before taking the reading and adjust instrument one light value higher than the actual reading.*

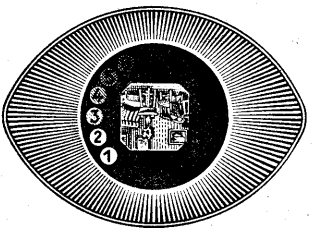
If you follow the above instructions, and provided that the instantaneous shutter* and the diaphragm of the camera function correctly in accordance with the data given on the camera, then faulty exposures will be practically impossible.

The data in the diaphragm (stop) column of the „BEWI" Meter are given according tho the F System (focal length divided by diameter of aperture), which is now almost universally used.

On the meter the sensitiveness of the negative material is expressed in "Scheiner" degrees; on nearly all plate and film wrappers the sensitiveness will be found indicated either in Scheiner degress or according to some other system (see below; if no sensitiveness is given on the packet, then ask your photo dealer.

In order to be able to use this meter in combination with cameras in which the stops are designated according to some other system, or with plates or films the sensitiviness of which is designated otherwise than in Scheiner degrees, two tables have been provided at the end of this booklet giving the comparative values of all systems of stops and also of the various sensitometer degrees or scales.

A Few Examples.



1) It is intended to photograph an interior Sensitiveness of the plate or films 17 degrees Scheiner: we therefore adjust the scale ring to 16–18°. After focussing the lens to suit your individual eyesight, as explained above, and after waiting 10 seconds „reading time", the number 5 is noted as easily decipherable. Accordingly, adjust arrow mark to 5 on the scale ring. Then read off: exposure for stop 4.5 — 3 seconds; for stop 6.3 = 6 seconds, and so on

*) *It is recommended to have the speed of the shutter checked from time to time by an expert.*

2.) In the case of an exposure to be made by artificial light (sensitive ness of plate 20° Scheiner), after 10 seconds of reading time only the number 1 is decipherable; since with artificial light we must adjust one light value lower than the number read, we here adjust the arrow to 0 on the scale ring. Then read off: exposure for stop 4 5 = 12 minutes; for stop 6.3 = 25 minutes and so forth.

Reading the Exposure for Cinema Work.

In the case of cinema work the shutter speed of your apparatus (appertaining to the number of exposures per second) must first of all be determined You then measure the exposure exactly as in the case of ordinary photographic work and then you need only adjust the stop of your camera in accordance with the value found on the meter opposite to the exposure (shutter speed) to which the camera has been adjusted. If this exposure is not contained under the light value in question, then the illumination of the object is not strong enough for exposures to be made.

Examples.

With a sector aperture of	*and a number of exposures of*	*the shutter speed is*	*The necessary stop is found on the meter opposite to*
160—180°	16 per sec.	1/32 to 1/36 sec.	bei 1/32 sec.
„ „	20 „ „	1/40 to 1/45 sec.	between 1/32 and 1/50 sec.

Get a Leather Case from your dealer for your Exposure Meter. The meter can then be carried on the belt and the instrument is protected against shocks and weather influences.

Comparison of Diaphragm Systems.

I. *Aperture Ratio (F|...)*	II. *English*	III. *French, Old System*	IV. *French, New System*	V. Dallmeyer Stolze	VI. Zeiss, *Old System*	VII. Zeiss, *New System*
1·8	.	1/32	.	.	.	
2·0	1/4	1/24	4	.	.	
2·7	.	.	.	.	.	
3·2	.	.	.	1	256	
3·5	.	1/8	.	.	.	
4·0	1	1/6	16	.	.	
4·5	.	1/5	.	2	128	
4·8	.	.	.	2·3	.	
5·0	.	1/4	.	2·5	.	
5·5	2	1/3	32	3	.	
6·3	.	.	.	4	64	
6·8	.	.	.	4·6	.	
7·0	.	1/2	.	.	.	
7·2	.	.	.	5	.	
7·7 (8)	4	2/3	64	6	.	
9·0	.	.	.	8	32	
9·5	.	.	.	9	.	
10	.	1	.	.	.	
11·3 (11)	8	.	128	12	.	
12·5	.	.	.	16	16	
14	.	2	.	.	.	
15·5 (16)	16	.	256	24	.	
18	.	.	.	32	8	
20	.	4	.	.	.	
22·5 (22)	32	.	512	48	.	
25	.	.	.	64	4	
28	.	8	.	.	.	
31 (32)	64	.	1024	96	.	
36	.	.	.	128	2	
40	.	16	.	.	.	
45 (44)	128	.	2048	192	.	
50	.	.	.	256	1	
57	.	32	.	.	.	
62 (64)	256	.	4096	384	.	
71	.	.	.	512	1/2	
80	.	64	.	.	.	
88	512	.	8192	768	.	

The **aperture** *is given in millimetres. The* **ratio** *of aperture is found by dividing the focal length of the lens by the aperture and placing the number thus found in the denominator of the fraction F|... If, for instance, the focal length of the lens is 150 mm and the aperture in question 5 mm, then 150 : 5 = 30; the ratio of aperture is therefore in this case F/30.*

Degrees of Sensitivenees according to.

Scheiner	Warnerke	Hurter & Drif-field	Watkins	General Rating	Grapho-skop Langer (2 N K)	Eder-Hecht
1	11	6	13		28	42
2	12	8	18		30	45
3	13	10	22		32	48
4	14	13	28		33	50
5	15	17	35		35	53
6	16	22	45		37	56
7	17	27	51		39	58
8	18	35	74		41	61
9	19	45	94		43	64
10	20	56	120		44	66
11	21	70	153	Slow	45	68
12	22	91	195		47	71
13	23	117	250		49	74
14	24	150	318	Rapid	51	77
15	25	190	406		53	80
16	26	240	516		55	82
17	27	310	659	**PAR**	56	84
18	28	390	838		57	86
19	29	500	1070		59	88
20	30	640	1370	Super	60	90
23	—	1300	—	Extra	—	—