

CLIMBING WITH A CAMERA.

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IN recent years developments in all branches of photography have come at an amazing pace, and apparatus, sensitive materials and technique which were up to date ten years ago to-day give results much inferior to the best obtainable. It seems opportune at this time, when there is some indication of a lull in these improvements, to summarize the chief points connected with the use of a camera in the hills. The main object of any climber is the exploration of the hills themselves; photography must always be but a means of producing some record of his excursions. Any photographic equipment should be easily portable and light, so that it does not hinder or even become a danger in serious climbing; it should be quickly operated, to avoid delaying the party unduly, and it should be possible to carry out most of the necessary operations with gloves on. At the same time, photographs should not be mere records but should attempt to recreate the atmosphere of the scene. For such a purpose apparatus of reasonably good quality is necessary; consistent results are unobtainable with cheap equipment and films.

The photographer who is in the hills merely to take pictures and who sees in them only one more subject, unfortunately less accessible than most, is no concern of this article. He, with his generally bulky and unwieldy equipment, must be left behind with the suspicion that his results will be no better than those obtainable with apparatus much better adapted for use when climbing. Most important is the camera itself. This should be small, versatile, and should wear easily. Modern films all enlarge well, so the negative size is of little moment once it is realized that it is not feasible to carry a camera capable of producing contact prints of adequate size. The true miniature (such as the Contax,

the Leica, or the Retina) or the semi-miniature, taking 12 or 16 pictures on standard $3\frac{1}{4} \times 2\frac{1}{4}$ inches spools (of which the Ensign Selfix 220 or the Ikonta are examples) are the most suitable types. A good anastigmatic lens giving crisp definition is essential, while an aperture of not less than $f/4.5$ is advisable— $f/3.5$ is better. A lens by a reputable maker is always to be preferred to a faster lens of cheaper make. Many miniature cameras give the advantage of interchangeable lenses, and a telephoto lens of double the normal focal length is a useful addition to the kit, although it will generally be found that changing lenses in the hills is decidedly inconvenient. The shutter, also, must be of good quality; one in which the faster speeds of $1/100$ and $1/250$ sec. are available is essential. With exposures of longer than $1/100$ sec., camera shake is almost certain to occur and to become apparent in enlargements. A tripod for longer exposures to avoid shake is out of the question; its use entails a considerable delay; it is inconvenient to operate except in favourable weather conditions and a suitable, stable site is seldom to be found at the best viewpoint.

An eye-level view-finder, especially in the Albada form, has great advantages over the small reflex finders previously fitted to most cameras. Composition is easier in an image which is not reversed, and the extra 2 feet of height are often invaluable. The popular twin-lens reflex cameras are not too well adapted for use in the hills; they are somewhat bulky and awkward to wear, whilst the viewpoint is rather low. A coupled range-finder, however useful it may be for other purposes, is an unnecessary luxury as far as mountain photography is concerned, since most of the exposures are made with the focal setting at infinity. Much more important is some knowledge of the depth of focus provided at various lens apertures and focal distances. In this respect it should be noted that the foreground of a picture must never be out of focus; the background may be if emphasis is to be concentrated on a nearby subject.

All the cameras mentioned are roll-film models. Plate or film pack models are much less convenient to operate, whilst in a well-designed, modern camera no fault can be

found with the maintenance of roll-film in the focal plane. This is a common source of trouble in older cameras. Reasonable precautions are, of course, necessary; it is better to assist the opening of self-erecting models in order to minimize suction and to wind the film, not after making an exposure but just previous to the next, after opening the camera, at the same time as the shutter is charged. This soon becomes a habit and the danger of double exposure is negligible even if no prevention device be fitted. The camera is best carried in an ever-ready case slung around the neck and worn on the chest under a zip-fastened, wind-proof jacket. It is then immediately ready for use and yet never in the way. It is protected from the weather and kept at a reasonable temperature—an important factor, as a cold lens is very easily fogged by the breath when setting the controls.

Although a good camera is the first essential in any photographic equipment, it alone cannot produce the best picture obtainable; various accessories must be used if the best possible results are to be got. A lens hood designed for a lens of the focal length employed is perhaps the most important of these. It should be used for every exposure made when the sun is shining, although its advantage is greatest in "against the light" pictures. In the hills lighting effects are of especial interest, and the most effective shots are generally made with the sun in front of the camera. Such pictures can only be attempted if a hood be fitted over the lens to cut out stray reflections from the lens mount and glare from snow surfaces. In the taking of snowscapes the position of the sun is of special importance; only if the sun be in front of the camera can the structure of the snow be recorded and all the delicate gradation of a good snow-picture obtained. A picture showing snow as a pure white sheet is quite unacceptable. Even for general work, however, the photographer is well advised to fit a lens hood and to forget the oft-repeated advice to beginners to keep the sun directly behind the camera. It is to be understood that this refers only to monochrome work, as present-day colour films appear to need direct lighting, since their latitude is not sufficient to take care of both the shaded and sunlit portions

of a scene. Very accurate exposure is then the secret of success.

Careful exposure is needed also with black and white film, especially panchromatic, if the best results are to be obtained and a reasonably employed exposure meter is very useful. The photo-electric type is best but does not necessarily give the exact exposure. It shows a mean value for the proportion of high-light and shadow to which it is directed; modification in the value obtained must be made, depending on the type of negative desired. In general, it is best to give adequate exposure for the shadows and to curtail development somewhat to avoid blocking the high-lights. The combination of meter reading and experience cannot fail to give correctly exposed negatives. Unless the negatives are developed personally, or by a firm which specializes in the work, they will generally be found to be badly over-developed.

As far as the operation of the camera is concerned, the author's practice is to keep the shutter set at a speed of 1/100 sec. and to adjust the stop to that indicated by the meter, unless differential focussing or great depth of focus is needed, when the stop must be chosen and the necessary exposure given. The speed of the film and the factor for any filter are, of course, allowed for at this stage. The definition of a good lens, as distinct from depth of focus, is not improved by stopping down to very small apertures, and a sharper picture will often result from an exposure of 1/500 sec. at f/8 than from 1/100 sec. at f/16.

After experiments with most makes and types of film available, the author has reached the conclusion that the most suitable type has a fast panchromatic emulsion, and he now employs Selo Hypersensitive Panchromatic or H.P.2 film exclusively. This film is really fast (31° Sch.) and suitable for poor lighting conditions; its tone gradation is better than that of the slower fine grain panchromatic films, which, especially in some makes, tend to be too contrasty, yet its grain is fine enough to allow of enlargements of 10-15 diameters to be made if a fine-grain developer be used. Ordinary orthochromatic film is much inferior to

panchromatic film for general work, especially if true tonal values or cloud effects are desired. With strong filters to produce really dramatic effects, a red-sensitive panchromatic film is preferable to the newer orthopanchromatic type.

Even with a panchromatic film, true colour rendering is possible only with a filter, and for this purpose a green filter needing three to four times the exposure with the Selo H.P. film is best. The main use for a filter in mountain photography is, however, to introduce tone into the blue of the sky; a picture in which the blankness of the sky rivals that of a snowfield lighted from behind the camera is the best possible example of what not to produce. Sufficient tone can be introduced into the sky to give a printable image by almost any filter; the above-mentioned green screen serves excellently with panchromatic film, but much the same effect can be got with a yellow filter with less increase in exposure. This is valuable with small aperture lenses. Where an $f/6.3$ or $f/8$ lens only is available, a pale yellow filter, such as the Zeiss G1 with a fast panchromatic film, should give reasonably exposed negatives in moderate light at $1/100$ sec. The so-called sky filters, gradated from yellow to colourless, are not to be recommended. As usually fitted, directly in front of the lens, they cannot perform their purpose efficiently and a pale yellow filter is easier to use. Polarizing filters such as the Zeiss Bernotar can be used to give practically any desired sky correction. At the same time this filter needs a smaller factor to give a well-exposed foreground and often yields a better balanced negative. Considerable experience of the filter is necessary, however, before the best results are obtainable. The panorama of the north-east corrie of Lochnagar was taken with this filter, and its ability to give detail in deep shadow, as well as sky correction, proved very useful for such a picture. The actual exposure details for this and other pictures will be found at the foot of the page facing the picture.

For strong, overcorrected skies, a red or orange filter is employed. Caution must be exercised, however, as such effects can be overdone. Used in moderation, for really startling skies, it is very effective. A further use of the red

filter is to cut haze, and it can often produce results when the subject is only dimly visible and would be lost without a filter. A loss in atmosphere is generally noticeable in such pictures, and it may be better to use a weaker filter and retain some of the distance haze. Even longer-distance pictures can be got by using Infra-red film with the necessary Infra-red filter, but these generally necessitate a stand to prevent camera shake during the lengthy exposure. The Lancet Edge picture in the previous *Journal* shows the use of the red filter (Zeiss R10) for sky effects, and that showing the Ben Lawers group over 20 miles from Ben Alder the use of the same filter for distance. While a filter is needed to separate clouds and sky effectively, tone in the clouds themselves can be produced by correct exposure; with overcast skies no filter may be necessary. When climbing at high altitudes a U.V. or pale yellow filter should be included to cut out the excess ultra-violet light present. Any filter would serve, but correction at such altitudes is greater than that produced nearer sea-level, and black skies would result with darker screens.

The effect produced by any filter varies considerably with the conditions prevailing. Thus a green filter may give dark skies if employed on a day when the atmosphere is free from moisture and the picture taken with the sun. Against the sun, on the other hand, the sky is generally much lighter. The shots of the Barns of Beinn Mheadhoin illustrate very severe correction using a red filter with the sun and slight correction with a green filter against the sun. The value of the latter form of lighting for rendering snow structure is also apparent. The author normally carries Zeiss G1 (pale yellow), GR50 (green), and R10 (red) filters, together with a polarizing filter, a lens hood, a Sixtus photoelectric exposure meter, and a notebook to record exposure data. All can be carried, together with two spare spools, in the outside pocket of a climbing jacket. The camera with which the accompanying pictures were taken was a Super Ikonta 531, with an $f/3.5$ Tessar lens of 7 cm. focal length and a Compur-rapid shutter, giving 16 negatives $2\frac{1}{4} \times 1\frac{3}{4}$ inches on standard No. 20 film.

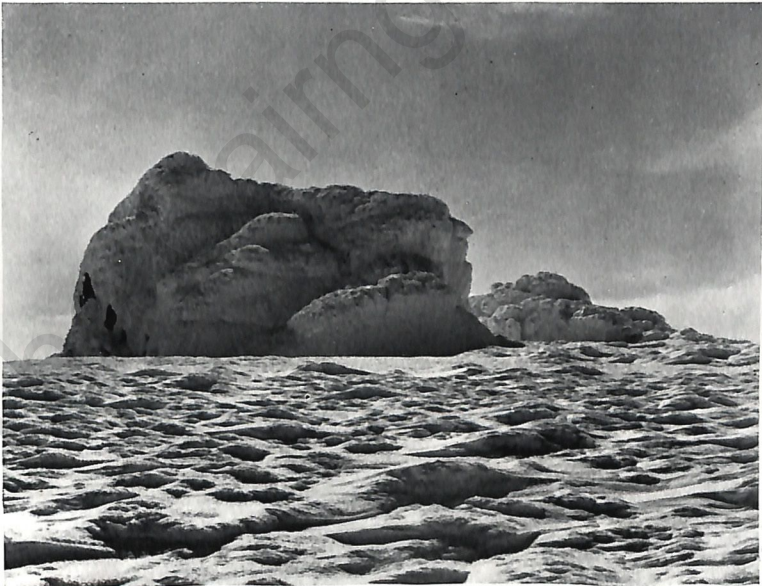
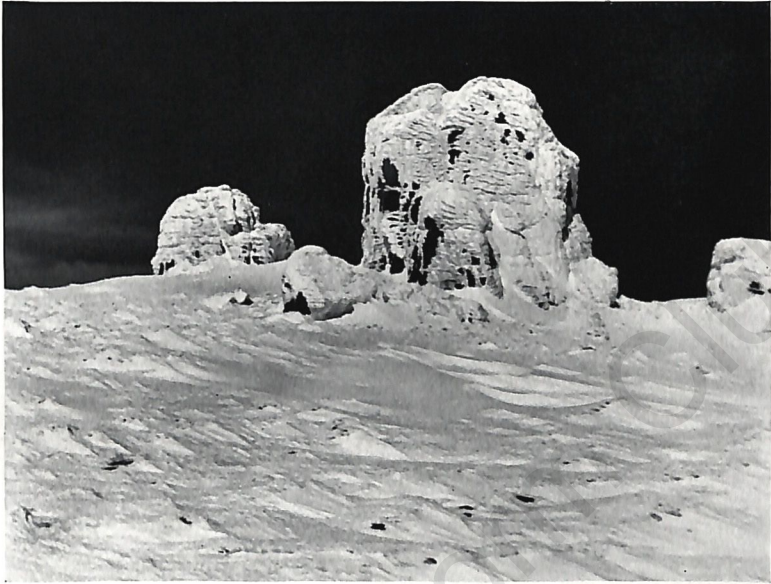
One point of importance must be noted. A photo-electric exposure meter incorporates a small permanent magnet which interferes seriously with any compass in its vicinity. Hence, compass readings should be taken at least 3 feet away from the meter, and in misty conditions it is best to ensure that these instruments are carried by different individuals who keep well apart.

So much for the camera and accessories best suited for the production of a picture. These, however, will not give results of themselves; it is the operation of the apparatus which counts. Indeed, it may be said that a picture is made or marred before the camera case is opened. The mechanical operations necessary after that are simple; it is the conclusions reached before it is decided to take a picture which are important. Choice of viewpoint and lighting conditions, selection of the most suitable filter to give the desired effect, and the general composition should all be considered. If there is any doubt about the suitability of a scene, it is fairly certain it will not make a picture, and an exposure would be a waste of time and material. On the other hand, a series of exposures with varying filters and speeds is the only way of getting to know the capabilities of the equipment.

Composition is a matter which has to be settled for each individual picture, but a few general points should be noticed. The subject should be kept simple, with one main point of interest, and the viewpoint so chosen that as much of the picture space as possible is filled. The camera does not possess the selective properties of our eyes of rejecting extraneous matter, and this often reappears in a disconcerting manner in a photograph. This is particularly true of background objects when a picture has its main interest in the foreground. Disappointment can also be caused by the miserable spot which represents that towering peak many miles away—once again the eye has picked out and emphasized the high point of a scene.

Selo H.P. Film, April 1.30 P.M., bright sunshine :

- (a) Zeiss R10 red filter, 1/100 sec., f11, with the sun.
- (b) Zeiss GR50 green filter, 1/100 sec., f16, against the sun.



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THE BARNES OF BEINN MHEADHOIN

R. L. Mitchell

When a suitable subject has been chosen it is scanned through the view-finder to ascertain whether it can survive on its own, cut off from the remainder of the scene by the four sides of the finder frame. The photographer will observe whether there is a suitable base for the picture—that the mountain side does not run feebly out at the bottom but has a solid support. A strip of foreground to support it may have to be included by lowering the viewpoint. The importance of this may be seen by masking off the foreground of the Pfaffen Hüt picture. The lines of a picture may not lead to the centre of interest, in which case the viewpoint will have to be changed, or a figure introduced to break disconcerting lines (as in the Jungfrau picture). The scene may be too symmetrical—bisected by a straight horizon or divided vertically by an object in the centre of the foreground. Both faults should be avoided by consideration before the picture is taken; much can be done by subsequent trimming, but often an excellent picture is lost through one such fault which cannot be repaired. If a figure be introduced, it must on no account be looking towards the camera and, if in profile, it must look into and not out of the picture. The effect on the balance of the picture can be well imagined were the figure in the frontispiece reversed. This picture, on Selo H.P. film with a G1 yellow screen, was taken at $1/25$ sec. at $f/22$ to give adequate depth of focus (from about 6 feet to near infinity) from the summit of the Arosa Rothorn at noon in September. Clouds on the south-east approached the summit; visibility to the west exceeded 30 miles.

The point of interest is best placed not in the centre but one-third of the distance from one side and from top or bottom. If the sky is more important than the landscape, let it occupy two-thirds of the picture; if the landscape warrants it, give it the major share. Such rules, however, are made only to be broken; one's personal judgment should lead all these points to be attended to unwittingly during a glimpse of the future picture in the view-finder. In composing, it should be remembered that it is tone and not colour differences which are recorded, and the respective values of the different

colours, which vary with the film and filter employed, allowed for in balancing a picture.

Where it is desired to record details of a district rather than to produce a picture, it may be necessary to include more than the limited angle of view (about 60°) of most lenses. A panorama can be produced by taking a series of photographs with some overlap and joining up the prints. It is possible, with care, to obtain a reasonable fit with hand-held exposures, provided the camera is held at the same angle to the horizontal and foreground objects kept out of the picture. Some patience may be necessary in the fitting. Because a match is not obtained at one point does not mean that one cannot be obtained somewhere in a pair of prints. Disappointments do occur, but the author has found reasonable fits in about four out of five panoramas so taken, so the carrying of a steady tripod and a panoramic head (an ordinary tripod head is of little help) does not seem to be justified.

The development of the film and enlargement of the resulting negatives are best done personally by the photographer. This is often impossible, but in such cases he or she is well advised to submit the films to a specialist firm, who will process them in any desired manner, if some indication of the degree of exposure and type of negative is given. This service is but little more expensive than rushed D. and P. work and negatives which are often irreplaceable deserve it.

It is hoped that these notes will have done something to help to produce better photographs—to change the uncertainty as to whether a picture “will have come out” to whether it will have come out as well as it could. It is only when the initial doubt has been banished by the acquisition of a good technique that real pictures can be produced. Of late years, too, the number of pictures submitted to our Editor has been meagre; perhaps members will be encouraged to remedy this.

Selo F.G. Pan. Film, Zeiss R10 red filter, 1/100 sec., f3.5, sunny, noon, April.



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BEN LAWERS FROM THE SHORT LEACHAS RIDGE OF BEN ALDER

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