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A Science Service Feature

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? WHY THE WEATHER ?

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REFLECTION FROM LAND SURFACES

When a photographer takes a picture, how does he determine how long an exposure is required? The darkness or lightness of an object upon the final print depends upon the amount of light reflected from its surface. Of course, the first consideration is how much light falls upon the object, the next is the character of the surface. Black soil, areas covered with pine and spruce forest, or hardwood trees not in leaf reflect but a small per cent. of the sunlight which falls upon them, and so appear dark in a photograph. Grass land, hardwoods in leaf and growing crops will reflect 15 per cent. of the light, while dry sand and light colored rocks can send back 30 per cent. of the insolation they receive. A calm water surface reflects from 10 to 50 per cent., depending upon the angle of the sun. The reflection from a snow cover, however, is about 70 per cent., and from dense clouds still more. From the moon, the earth's snow covered poles and cloud areas would probably look dazzlingly bright.

If the photographer is taking a snow scene, or a view of ocean and beach, he will want a smaller stop or shorter exposure than for a grassy field, even though all are about equally illuminated. If he attempts to show, say, evergreens and snow in the same picture, either the trees will be too dark to show detail or the snow will be merely blank white, unless he takes the precaution to use a suitable plate and the proper color screen or ray filter.

(Tomorrow: Weather Insurance)

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