

A Science Service Feature

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? WHY THE WEATHER ?

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ULTRA-VIOLET WEAKENING

As the midday sun becomes lower and lower in the sky, the sunlight we receive changes not only in duration and intensity but also in quality. At every season part of the sun's radiation is lost in coming through the atmosphere. The long wave-lengths succeed best in penetrating to the earth; the short are more dispersed. At a famous sun-cure resort in Switzerland, at an altitude of a mile above sea-level, an annual average of 90 per cent. of the infra-red, or so-called heat rays, reach the surface of the earth, perhaps 80 per cent. of the yellow rays, 51 per cent. of the blue-violet, but only 27 per cent. of the ultra-violet, the rays which are most effective for therapeutic purposes.

When the sun becomes lower in the sky, and its light must travel through a greater thickness of air, the short ultra-violet rays are reduced much more rapidly than the longer-wave-lengths. In fact, at this mountain station the ultra-violet rays in mid-October have a midday intensity of but 60 per cent. that in July, and its highest hourly value is no better than the July figures for 8 a.m. or 3:30 p.m. From October to January there is a further decline in the intensity of the ultra-violet rays from a noon value of 60 per cent. to one of 10 per cent. the July midday intensity. This great decline occurs while the total intensity of sunshine at noon remains about constant.

This is the time of year to get out the cod liver oil bottle, for cod liver oil is probably the most practicable substitute for ultra-violet light. Good commercial stock feeds frequently contain cod liver oil; when we learn to feed our children as scientifically as if they were pigs or chickens we will see that this item is included in their diet, at least during the fall and winter months, when the sunlight is deficient in ultra-violet.

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