

less, that is, than the one twenty-thousandth part of one per cent.—is made useful to us. "But may there not be other planets on which intelligent life exists, and where this heat, which passes us by, serves other beings than ourselves?" There may be; but if we could suppose all the other planets of the solar system to be inhabited, it would help the matter very little, for the whole together intercept so little of the great sun, that all of it which nature bestows on man is still as nothing to what she bestows on some end—if end there be—which is to us as yet inscrutable.

How is this heat maintained? Not by the miracle of a perpetual self-sustained flame, we may be sure. But, then, by what fuel is such a fire fed? There can be no question of simple burning, like that of coal in the grate, for there is no source of supply adequate to the demand. The State of Pennsylvania, for instance, is underlaid by one of the richest coal-fields of the world, capable of supplying the consumption of the whole country at its present rate for more than a thousand years to come. If the source of the solar heat (whatever that is) were withdrawn, and we were enabled to carry this coal there and shoot it into the solar furnace fast enough to keep up the known heat-supply, so that the solar radiation would go on at just its actual rate, the time which this coal would last is easily calculable. It would not last days or hours, but the whole of these coal-beds would demonstrably be used up in rather less than one one-thousandth of a second! We find by a similar calculation that if the sun were itself one solid black coal, it would have burned out to the last cinder in less time than man has certainly been on the earth. But during historic times there has as surely been no noticeable diminution of the sun's heat, for the olive and the vine grow just as they did three thousand years ago, and the hypothesis of an actual burning becomes untenable. It has been supposed by some that meteors striking the solar surface might generate heat by their impact, just as a cannon-ball fired against an armour-plate causes a flash of light, and a heat so sudden and intense as to partly melt the ball at the instant of concussion. This is probably a real source of heat-supply as far as it goes, but it cannot go very far; and, indeed, if our whole world should fall upon the solar surface like an immense projectile, gathering speed as it fell, and finally striking (as it would) with the force due to a rate of over three hundred miles a second, the heat developed would supply the sun for but little more than sixty years.\*

(To be continued.)

### LANDSCAPE PHOTOGRAPHY.

BY PETER MAWDSLEY.†

I DIVIDE my subject into "four heads."

First: "Selection of View."

The foreground really constituting the picture, it is important that its details should be given due prominence on the plate. Mid-distance and distance are insufficient of themselves to form a pleasing picture; but judiciously combined with foreground and accessory to it, these will give an artistic whole which will always gratify the eye. Horizontal lines should be avoided; where such occur, the camera should be moved to right or left, and when that is not convenient, the objectionable feature should be hidden or broken up by the introduction of any movable object which may assist to do so; a branch of a tree or brushwood is generally within reach. I have found a wheelbarrow, horse and cart, or one or more figures, suitably placed, to do good service. In photographing buildings, never be satisfied with a mere front elevation, but see that it goes off in perspective; and in such cases particularly avoid an unbroken expanse of lawn or grass land; a few garden implements, lawnmower, &c., will be of great service.

Second: "Lighting."

When possible, I should prefer to have the light from over the right or left shoulder, as the cast shadows give great crispness and brilliancy. Never photograph with the sun directly behind you, as the result would be excessively flat, all light, and no shadow. Whilst in pure landscape the above rules will generally hold good, in seascapes, on the other hand, I should prefer to have the lighting obliquely from the front, as, owing to the large volume of reflected light, the shadows would be well illuminated, and the reflections most brilliant. A first-class ship under full sail taken under such conditions would be a charming object. What I have said relative to seascapes, will generally apply to photographing snow and ice.

\* These estimates differ somewhat from those of Helmholtz and Tyndal.  
† A communication to the Rochester Photographic Association.

Third: "Lenses."

For pure landscape and seascape, there are none better than the old meniscus view lens, the only objection being its bulk, which is very great as compared with modern compound forms. It is preferable to include only a small angle of view, and to do this, a lens having a focus half as long again as the base line of the picture should be used—foreground and distance will be in harmony; whereas if a wide-angle lens is used, the foreground will appear unduly magnified, and the distance dwarfed. This characteristic, where the background is formed by a lofty range of mountains, is particularly objectionable. Most compound lenses are so constructed as to admit of the front combination being used alone, and as this will approximately double the focus, a smaller angle of view will be included.

Fourth: "Development."

In subjects which, from the lighting or other conditions, are wanting in contrast, a strong developer which quickly brings printing density, will strengthen the high-lights and deepen the shadows; on the other hand, with subjects largely and deeply in shadow, the using of a minimum of the developer largely diluted, say with two, three, or more volumes of water, giving time and patience to the operation, will result in a negative the high-lights of which are not unduly dense; and an amount of vigorous detail will be secured in the shadows, which no other development (so far as my experience goes) will give.—*Photographic Times.*

### STUDY YOUR SITTERS.

BY L. M. RICE.

As a rule, it may be truthfully said that nine out of every ten photographers make one sitting, at least, for each patron before thoroughly taking into consideration the case in hand. The old plea, as an excuse for hurrying up, to save the plate before drying, will hardly be offered in these gelatine times, and the artist may now take ample time to adjust the hundred and one things that go so far in the patron's mind toward giving satisfaction.

Does your sitter require a shadow or a plain lighting? or a side or a front view? Determine this before sitting. Is the patron an old man? Do not lose his individuality by placing him in some doubled, twisted position, or attempt a lighting for which he is poorly fitted. Study to preserve what belongs to him.

Is the subject a young lady? Well, this is something different, but no less a care for previous study. Do not get so completely inflated with the idea that if you get an excellent chemical effect, and what you conceive to be a fine attitude, that the result must necessarily please her and her many friends. Remember that this lady has some ideas of her own, and it is not necessary to make a sitting or two before learning this fact. A stray lock of hair, or an unbecoming wrinkle in her dress—both of which the artist should have seen and adjusted before sitting—oftentimes calls for a re-sitting. The most natural expression is the one that comes to all subjects without thought of effect.

Is the subject a baby? Study to approach the little one carefully, and in a way that shall win, not only the child, but the mother too. Do not forget that where the babies are well handled, the parents are sure to go. The little ones have natures to study, and the better we understand them, the more captivating will be our success. Remember that it is not on the surface of things we find our highest success, but we should study, study deeply, for then we shall find our reward.—*Phil. Phot.*

### Correspondence.

#### THE INTERNATIONAL INVENTIONS EXHIBITION.

SIR,—Permit me to direct further attention to a matter of considerable importance, and one likely to seriously affect the welfare of professional photography. It is the system of granting exclusive right to photograph according to the conditions enumerated on page 144 of your last issue, and alluded to in your "Notes" of that number.

Now, sir, it is only reasonable to suppose that an individual backed by such authority as the executive council, has an unparalleled advantage in the way of publicity over any other ordinary trader, for by judicious