

equal to that which would be required to melt a stratum of ice nearly forty-six feet thick, and covering its whole surface.\* This estimate, however, is to be viewed only as a rude approximation. The difficulty consists, not only in the impracticability of forming precise notions of the heat and light, which actually arrive at any given place in a given time; but in the utter impossibility of forming even a conjecture, of those portions, which become latent, or are otherwise lost, in the passage of the solar rays through the atmosphere. The following observations will give some idea of the absolute quantity of light which reaches the earth; but it is proper to apprise the reader, that the results stated, are to be considered as liable to much uncertainty. Nor do we know whether they are equally applicable to heat; which, though it obeys laws somewhat analogous to those of light, may nevertheless, have its own peculiar laws.

A vertical ray of light, in its passage through the clearest air, has been calculated to lose at least a fifth part of its intensity, before it reaches the earth's surface. From this cause, and from the actual condition of the atmosphere, it has been estimated, that under the most favourable circumstances; of a thousand rays ema-

\* *Elémens de Physique expérimentale et de Météorologie*, tom. ii. p. 704.