

it is far otherwise. Into what a complication of different branches of science are we not led by the consideration of such a phenomenon as rain, for instance, or flame, or a thousand others, which are constantly going on before our eyes? Hence it is hardly possible to arrive at the knowledge of a law of any degree of generality in any branch of science, but it immediately furnishes us with a means of extending our knowledge of innumerable others, the most remote from the point we set out from; so that, when once embarked in any physical research, it is impossible for any one to predict where it may ultimately lead him.

(184.) This remark rather belongs to the inverse or *deductive* process, by which we pursue laws into their remote consequences. But it is very important to observe, that the successful process of scientific inquiry demands continually the alternate use of both the *inductive* and *deductive* method. The path by which we rise to knowledge must be made smooth and beaten in its lower steps, and often ascended and descended, before we can scale our way to any eminence, much less climb to the summit. The achievement is too great for a single effort; stations must be established, and communications kept open with all below. To quit metaphor; there is nothing so instructive, or so likely to lead to the acquisition of general views, as this pursuit of the consequences of a law once arrived at into every subject where it may seem likely to have an influence. The discovery of a new law of nature, a new ultimate fact, or one that even temporarily puts on that appearance, is like the discovery of a new element in chemistry. Thus selenium was hardly discovered by Berzelius in the vitriol works of Fahlun, when it presently made its appearance in the sublimates of Stromboli, and the rare and curious products of the Hungarian mines. And thus it is with every new law, or general fact. It is hardly announced before its traces are found every where, and every one is astonished at its having so long remained concealed. And hence it happens that unexpected lights are shed at