

more of them, such combinations will crystallize in the same geometrical forms. To this curious and important law there appeared a remarkable exception. According to professor Mitscherlich, the arsenic and phosphoric acids *are similar combinations coming under the meaning of his law*; and their combinations with soda and water, forming the salts known to chemists under the names of arseniate and phosphate of soda, ought, if the law were general, to crystallize in identical shapes. The fact, however, was understood to be otherwise. But lately, Mr. Clarke, a British chemist, having examined the two salts attentively, ascertained the fact that their compositions deviate essentially from that similarity which M. Mitscherlich's law requires; and that, therefore, the exception in question disappears. This was something: but, pursuing the subject further, the same ingenious inquirer happily succeeded in producing a *new* phosphate of soda, differing from that generally known in containing a different proportion of water, and agreeing in composition exactly with the arseniate. The crystals of this new salt, when examined, were found by him to be precisely identical in form with those of the arseniate; thus verifying, in a most striking and totally unexpected manner, the law in question, or, as it is called, the law of isomorphism.

(181.) Unexpected and peculiarly striking confirmations of inductive laws frequently occur in the form of residual phenomena, in the course of investigations of a widely different nature from those which gave rise to the inductions themselves. A very elegant example may be cited in the unexpected confirmation of the law of the developement of heat in elastic fluids by compression, which is afforded by the phenomena of sound. The inquiry into the cause of sound had led to conclusions respecting its mode of propagation, from which its velocity in the air could be precisely calculated. The calculations were performed: but, when compared with fact, though the agreement was quite sufficient to show the general correctness of the cause and mode of propagation assigned, *yet the whole* velocity could not be