

stances upon combination. Suppose you should direct your cook to provide an entertainment of all the varieties of food which the market and the culinary art could furnish, and he, taking a chemical fancy into his head, should set before you and your guests a dish of charcoal, and a vessel of water, telling you that if you wanted any nitrogen in addition, the atmosphere would furnish it. Now, he could truly plead that he had set before you oxygen, hydrogen, nitrogen, and carbon; and that if he had loaded your table with the most costly viands and fruit, it would have added little more. But you would think his chemistry a poor substitute for a good dinner.

Once more: a mere difference in the arrangement of the particles of a substance makes a world of difference in its properties. Suppose, for instance, that when Messrs. Bundell and Bridges received orders to prepare Queen Victoria's crown for coronation day, instead of surmounting it with diamonds, they had covered it with charcoal points, and presented a bill of £1, instead of £100,000, or half a million of dollars. It would probably have hardly quieted the royal displeasure to have been informed that the chemical constitution of charcoal is precisely the same as that of the diamond, and that a slight difference in the arrangement of the particles could be of no consequence.

The complete neutralization and concealment of the most powerful substances, by means of strong chemical affinity, is another remarkable effect of this agency, and a striking example of divine beneficence. For had these substances been left free, the destruction of organic beings must have been certain. Almost every one knows, for instance, how fatal a poison is phosphorus, and how eminently and powerfully combustible it is. But this substance abounds through all nature—in the solid rocks, in the soils, in plants, and especially in