

occupied by the mixture. Hence, one direct and most important effect of the mixed constitution of the atmosphere, is *its nearly uniform composition*, at least within the limits attainable by man :—a fact which has been confirmed by innumerable analyses of the air, made in all parts of the world; both at its surface, and at the greatest heights man has hitherto reached. Moreover, this constitution of the atmosphere, not only originally produced such uniformity of composition; but *is the cause constantly operating to preserve that uniformity*—the grand conservative principle, as it were, preventing any unequal distribution of the constituent elements of the atmosphere; which would speedily prove fatal to organic life! Were the gaseous principles composing the atmosphere in ever so slight a state of union, they could not readily diffuse themselves through each other; and partial accumulations of one or other of them would be constantly taking place: but as the atmosphere is at present constituted, if a little more oxygen be consumed in one spot than in another; instantly the deficiency is supplied from the neighbourhood by diffusion; and the equilibrium is scarcely affected, in a sensible degree. Another curious result of this independent condition of the gaseous principles of the atmosphere is, that of the whole pressure exerted, each principle exerts its own force, according to its quantity. Thus, of the thirty inches of