

MECHANICAL PROPERTIES OF BONE OR OF THE
TRUE SKELETON.

These considerations lead us the more readily to understand the composition of bone. It is combined of three parts having different properties,—membrane, phosphate of lime, and cartilage. By these various substances being united in its texture, it is enabled to resist stretching, compression, and tortion. If bone had a superabundance of the earthy parts, it would break like a piece of porcelain; and if it did not possess toughness and some degree of elasticity, it would not enable a man to pull and push and twist.

Looking to the dense bone, we should hardly suppose that it was elastic. But if ivory be possessed of elasticity, it cannot be denied to bone. Now if a billiard ball be put upon a marble slab which has been painted, a very small spot will mark where the contact has been; but if we let the ball drop upon the marble from a height, we shall find the spot much larger, and that the elasticity of the ivory has permitted the ball to yield and momentarily to assume an oblate spheroidal form.

When a new principle is admitted into a complex fabric, the utmost ingenuity can hardly