

beam : and which might be added to the upper or the lower part with great advantage. It can readily be understood how a tougher substance added to the lower part would strengthen the beam. We see it in the skin which is laid along the back part of the Indian's bow ; or in the leather of a carriage spring. The following is a beautiful experiment to demonstrate what is the quality in the timber which resists, at the upper portion of the beam. If a portion, amounting to nearly a third part, of the beam be cut away, and a harder piece of wood be nicely let into the space, the strength will be increased ; because the hardness of this piece of wood resists compression. This experiment I like the better because it explains a very interesting peculiarity in the different densities of the several parts or sides of the bones.

In reading anatomical books, we are led to suppose that the various forms of the bones result from the pressure of the muscles which surround them. This is a mistake. Were we to consider this as the true explanation, it would not only be admitting an imperfection, but we should expect to find, if the bones yielded in any degree to the force of the muscles, that they would yield more and more, and be ultimately destroyed. There is nothing more admirable in the living frame than the relation established between the muscular power and the strength or