

And we have seen how the human machine is a "self-feeder" and can and does prepare its own food fuel, reducing it and grinding into proper size to reach the stomach, and then become elaborated into chyme and chyle and pass therefrom into the intestines whence to go forth on their mission of blood and tissue making and repairing, wherewith to fortify the muscles in their assigned functions of protectors to the osseous system from shocks and accidents in case of collision with external forces.

Passing on now to a consideration of the more truly mechanical or machine-like functions of the human frame—we have already noticed the almost "ball and socket" motion of the head, due to the elasticity of the ligaments separating while at the same time miling the cervical vertebrae, and thus allowing the head such serpe, play or action about its centre of support.

Now the whole spine or all the dorsal and lumbar vertebrae thereof, are separated by these same cushions of elastic or compressible and extensible substance; and the whole vertebral column, the whole body or machine can thus sway to and fro in all directions, and even to some extent, absolutely twist around as on a pivot, though of course a portion of this rotation is due to the revolving the fibula of the lower leg about the larger bone (the tibia) in the same way as the fore arm revolves partly about the humerus by the motion of the radius around the ulna.

See also the action of the leg and foot at working the *trundle* of a spinning wheel, or lathe, or sewing machine or saw etc., or the *pedals* of a piano while the hands are at work elsewhere and at quite a different species of mechanical action.

See again the arm or arms in gesticulating during a speech or sermon or in gymnastic exercise, where the fore arm can act at its hinge joint at elbow, as well the leg about the knee articulation, and how the whole arm can swing in a circle and in fact throughout every point in fully more than a hemisphere in virtue of its so called ball and socket or universal joint at the shoulder; while the leg can follow suit in space by the similarly constituted revolving joint at the hip.

It is absolutely beyond the ken of our intelligence to conceive, our capacity to describe the infinity, so to say, of positions and motions of which the several parts of the human machine are susceptible. Look at a man picking, shoveling, hammering,