

## SOME RESULTS BY MASSAGE ET CONTRE-COUP.

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The application of jarring, somewhat stunning, blows in exceedingly rapid succession through a cushioned or elastic medium, to the head in particular directions at certain points of the cranium and face have been found in my experimentation to be simple means of producing local effects on the brain for the treatment of impaired circulation causing headache, &c. ; also touches of what I denominate mechanical anæsthesia, and mechanical ataxy of local and transient character were similarly obtained. By making the blows very rapidly and through the deadening medium, they need not be so hard as would be the force of a single blow strong enough to cause a stunning effect, and the continuance of the effect is gained by the repetition of strokes in rapid succession. The fleshy portion of the hand was used for applying the strokes, and any elastic pounder answers. The speaker has been stunned by a single blow from a rubber ball, and quickly regained his senses without any noteworthy suffering, and has witnessed like cases of stunning with little pain from single strokes by boxing gloves. Similar examples, not uncommon, sustain the reality of mechanical anæsthesia and mechanical ataxy. By applying the rapid blows to parts of the head, temporary locomotor ataxy was experimentally generated while walking. The blows repeated as rapidly as possible are made harder and harder until with sufficient force shown by the effects instantly resulting as follows, but the blows must be hard enough to overcome voluntary effort ; their application in a crosswise direction against the side of the chin caused turning and falling toward the blows, but similarly applied on the same side against the cranium at a region far backward but upward from the ear caused fall-



ing and turning in a contrary manner toward the opposite side. The blows against the chin on one side yielded the same effect as if against the occiput on the other side. The transmission of violence from one side of the chin to the opposite side of the upper back portion of the brain was named and explained as rotary transmission and delivery, viewing the head mechanically as a two-armed hollow lever and as an irregular wheel on the vertebral axis, the chin terminating one lever arm while the brain is contained in the other arm, the seat of locomotor control being in that part of the brain which is in the lever end farthest from the chin, as indicated in sketches shown. The effect there on one side of the brain inhibited the use of the leg of the opposite side, &c. Some contre-coup injuries were similarly explained. The importance of the study of these and certain related principles, their application, and the practice of jarring to produce deep effects in the treatment of head maladies was urged.



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