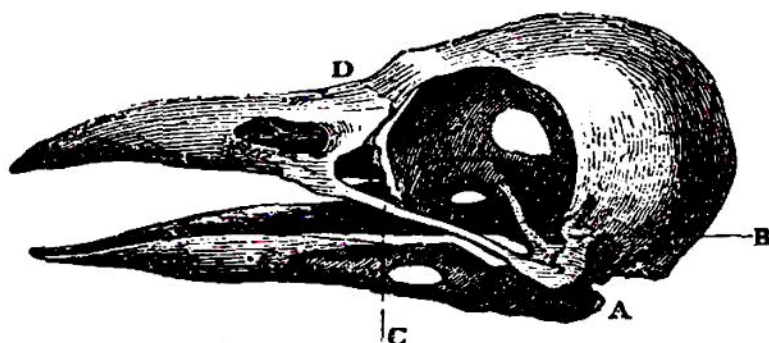


a somewhat grosser example of mechanical relation. The bill of the bird, in some degree, pertains to our subject, as it is the organ of prehension and of touch. It is withal a fly trap—hence, its motions must be rapid: and the velocity is increased by the most obvious means imaginable,—that is, by giving motion to both mandibles, instead of to one. When a dog snaps, he throws back his head, and thereby raises the upper jaw at the same time that the lower jaw is dropped; but these are slow and clumsy motions, pertaining to the muscles of the neck as well as of the jaws, and the poor hound makes many attempts, before he catches the fly that teases him. But a swallow or fly-catcher makes no second effort, so admirably suited is the apparatus of prehension to the liveliness of the eye and the instinct. The adaptation of the instrument consists in this, that the muscles which open the



lower mandible, by the same effort, open the upper one: A. is a process of the lower mandible, projecting behind the centre of motion, and