

CHAPTER XXXIX.

THE MACHINERY OF THE HEAVENS RUNNING DOWN.

LET the earth have frozen; let the bright sun have been extinguished; let the moon and stars “wander darkling in the eternal space.” Will this, then, be the end of matter’s history? Is this the consummation of which philosophers, and poets, and patriarchs have dreamed and prophesied? From the pinnacle on which we stand we can discern the course of Nature still wending onward. There must be progress even after the funeral of the sun. As that bright luminary shines on after the fall of generations of men—as he shines serenely and undisturbed even in dead men’s faces, so will gravitation continue to prosecute its work even among the corpses of planets and suns.

Hark! from the highways of the comets come tidings of friction in the machinery of the heavens. The filmy wanderer encounters resistance in his long journey to the confines of the solar system. He plows his way through a resisting medium. The balance of centripetal and centrifugal forces is destroyed; the central attraction preponderates; he falls toward the sun; his orbit is diminished; his motion is accelerated, and he comes back to his starting-point earlier than the time which astronomy had appointed. Here we get the first disclosure of the existence of a subtle material fluid pervading space.

This remarkable retardation was first observed in the successive returns of Encke’s comet. This comet has at present a period of about 1210 days, and it returns each time two hours and forty-five minutes sooner than calcula-