

those cast-iron wheels on which the engineer mounts his railway carriages, (*a.*) In the longitudinal section their line of junction with the jaw is marked by numerous openings, but by no line of division, and they appear as thickly dotted by what were once canaliculi, or life points, as any portion of the dermal bone on which they rest.

It seems truly wonderful, when one considers it, to what minute and obscure ramifications that variety of pattern which nature so loves to maintain is found to descend. It descends in the fishes, both recent and extinct, to even the microscopic structure of their teeth; and we find, in consequence, not less variety of figure in the sliced fragments of the teeth of the ichthyolites of a single formation, than in the carved blocks of an extensive calico print-yard. Each *species* has its own distinct pattern, as if, in all the individuals of which it consisted, the same block had been employed to stamp it; and each *genus* its own general *type* of pattern, as if the same radical idea, variously altered and modified, had been wrought upon in all. In the *Dendrodic* (Cœlacanth?) family, for instance, it is the radical type, that from a central nave there should radiate, spoke-like, a number of arborescent branches; but in the several genera and species of the family, the branches belong, if I may so express myself, to different shrubs, and present dissimilar outlines. It has appeared to me, that at least a *presumption* against the transmutation of species might be based on those inherent peculiarities of structure which are thus found to pervade the entire texture of the framework of animals. If we find erections differing from one another merely in external form, we have no difficulty in conceiving how, by additions and alterations, they might be brought to exhibit a perfect uniformity of plan and aspect: *transmutation*, — *development*, — *progression*, — (if one may