

Dicotyledons is observed in germination, when the Dicotyledonous radicle elongates and forms the root of the young plant; the Monocotyledonous radicle does not elongate, but pushes out rootlets from itself at once. Hence the not very good terms, *exorhizal* for Dicotyledonous, and *endorhizal* for Monocotyledonous.

“The highest physiological generalization in the vegetable kingdom is between *Phænogama* and *Cryptogama*. In the former, fertilization is effected by a pollen-tube touching the nucleus of an ovule; in Cryptogams, the same process is effected by the contact of a sperm-cell, usually ciliated (*antherozoid*), upon another kind of cell called a germ-cell. In Phænogams, further, the organs of fructification are all modified leaves; those of Cryptogams are not homologous.” (J. D. H.)

#### ZOOLOGY.

I have exemplified the considerations which govern zoological classification by quoting the reflexions which Cuvier gives us, as having led him to his own classification of Fishes. Since the varieties of Quadrupeds, or *Mammals* (omitting whales, &c.), are more familiar to the common reader than those of Fishes, I may notice some of the steps in their classification; the more so as some curious questions have recently arisen thereupon.

Linnaeus first divides Mammals into two groups, as they have Claws, or Hoofs (*unguiculata*, *ungulata*.) But he then again divides them into six orders (omitting whales, &c.), according to their number of *incisor*, *laniary*, and *molar* teeth; namely:—

- *Primates*. (Man, Monkey, &c.)
- *Bruta*. (Rhinoceros, Elephant, &c.)
- *Feræ*. (Dog, Cat, Bear, Mole, &c.)
- *Glires*. (Mouse, Squirrel, Hare, &c.)
- *Pecora*. (Camel, Giraffe, Stag, Goat, Sheep, Ox, &c.)
- *Belluæ*. (Horse, Hippopotamus, Tapir, Sow, &c.)

In the place of these, Cuvier, as I have stated in the *Philosophy (On the Language of Sciences, Aphorism xvi.)*, introduced the following orders: *Bimanes*, *Quadrumanes*, *Carnassiers*, *Rongeurs*, *Edentés*, *Pachyderms*, *Ruminans*. Of these, the *Carnassiers* correspond to the *Feræ* of Linnaeus; the *Rongeurs* to his *Glires*; the *Edentés* are a new order, taking the Sloths, Ant-eaters, &c., from the *Bruta* of Linnaeus, the *Megatherium* from extinct animals, and the *Ornithorhynchus*, &c., from the new animals of Australia; the *Ruminans* agree with the