7. Animal cells have the same component parts as vegetable cells, *i. e.*, they are formed of a protoplasmic **cell-body** containing a **nucleus** and limited (frequently) by a **membrane** or wall. The latter, which plays so important a part in the support of the plant, resigns this function in the higher animals to the **intercellular substance**, which, although like the cell-wall formed by the activity of the protoplasm, differs therefrom in rarely exhibiting the territories belonging to the constituent cells. All the cells of the animal body are, like those of the plant, derived from the division (and the differentiation of the products of the division) of one cell—the egg-cell, and the first results of such division and differentiation are the formation of embryonic layers somewhat analogous to the primary meristems of the plant-embryo. Perhaps the most characteristic difference between the plant and animal embryo is that in the latter some of the most important organs are developed by the infolding of the originally superficial epithelial layer.

8. The four categories under which animal tissues fall may shortly be characterized as follows :—(Fig. 3.)

I. **Epithelial Tissue** is that which is disposed in the form of one or more layers of distinct cells on the free surfaces of the body, including the alimentary canal, the lining of the cœlom, the cavities of the nervous system, etc. The cells may be cylindrical, columnar, cubical or scale-like in form, their free surfaces may be covered with a resistant cuticle, or provided with delicate continuations of the protoplasm in the form of **cilla** or hairs. If their duty is to receive impressions and transmit them to nerves, they constitute **neuro-epithelium**; if they secrete some characteristic product they constitute **glandular** epithelium, and are generally turned in from the free surface for protection; if they serve merely to form hard structures for protection of underlying parts or for defence, they are modified into horny epithelial scales, feathers, hairs, hoofs, nails, horns, etc., while if they are converted into eggs, etc., they constitute **germinal** epithelium.

II. **Connective Tissues.**—These constitute the framework of the body, which in some organs is of the utmost delicacy, in others, the true skeletal tissues, attains great firmness and hardness. Sometimes the cellular elements are distinct, in which case they may be free to wander through the interspaces of the tissues in the form of **amœboid** or wandering cells, or be more limited in their mobility like the pigment-cells; or be fixed and flat like epithelium, or globular and filled with fat, or branched and communicating with their neighbours. Sometimes in the adult tissue the protoplasm is almost all converted into intercellular