

constant for each species of animal. Thus, in man (Duesberg), the mouse, the salamander, and the trout the number of chromosomes is twenty-four; in the ox and guinea-pig it is sixteen; while in one of the round-worms (*Ascaris*) the number may be as small as four, or even two. It is to be noted that the number is always an even one.

As soon as the asters have taken up their position on opposite sides of the nucleus, the nuclear reticulum begins to be converted into a spindle-shaped bundle of fibrils which associate themselves with the astral rays and have lying scattered among them the chromosomes (Fig. 2, C). To the figure so formed the term *amphiaster* is applied, and soon after its formation the chromosomes arrange themselves in a circle or plane at the equator of the spindle (Fig. 2, D) and the stages preparatory to the actual division, the prophases, are completed.

The next stage, the metaphase (Fig. 3, A), consists of the division, usually longitudinally, of each chromosome, so that the cell now contains twice as many chromosomes as it did previously. As soon as this division is completed the anaphases are inaugurated by the halves of each chromosome separating from one another and approaching one of the asters (Fig. 3, B), and a group of chromosomes, containing half of the total number formed in the metaphase, comes to lie in close proximity to each archoplasm sphere (Fig. 3, C). The spindle and astral fibers gradually resolve themselves again into the reticulum and the chromosomes of each group become irregular in shape and gradually spread out upon the nuclear reticulum so that two nuclei, each similar to the one from which the process started, are formed (Fig. 3, D). Before all these changes are accomplished, however, a constriction makes its appearance at the surface of the cytoplasm (Fig. 3, C) and, gradually deepening, divides the cytoplasm in a plane passing through the equa-