that of a sphere, but in all of them, because of the contact with the zone boundary, the surfaces in the repeated zone scheme are multiply connected.

Where the Fermi surface contacts the zone boundary is usually referred to as the neck region; regions away from the necks are usually

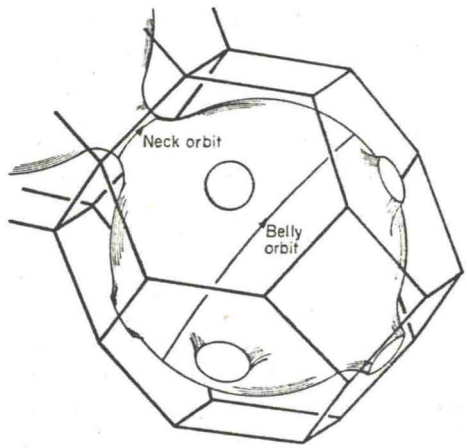

FIG. 12. First Brillouin zone and Fermi surface of a noble metal (schematic). The extremal belly and neck orbits with the magnetic field in the [111] direction are shown.

referred to (following Shoenberg) as the bellies. As we shall see below there are important regions, particularly in gold, where the surface is significantly concave in the [110] direction.

The first experiments seeking to find out how the Fermi surfaces of the noble metals changed under pressure were those of Caroline and Schirber (1963) who measured the transverse magneto-resistance at high fields to pick out the regions associated with open orbits. In this way they could measure the angular diameter of the necks in the Fermi surfaces of copper and silver from the angular separation of the corresponding peaks in the transverse magneto-resistance; they were thus able to concentrate directly on *distortion* of the Fermi surface, since if the whole surface and Brillouin zone simply scale together under pressure, the angular diameter of the necks does not change. The method of applying pressure was by means of the helium gas technique and they used pressures up to 2 kb. Their precision was such that they could detect changes of 0·2% per kb in Cu and 0·3% per kb in Ag. No changes were detected.