The major strutural compnents in the earth that are sepaated by sharp discontinuities are the crust, the mantle, and the core. The crust fors a very thin surface skin, the antle is a thick shell that exteds half the radus down into the earth, and the coe occupies the central part. The crust and upper mantle are known to vary in physical and chemical chracteristics, both horizontally and vertially; the lower mantle and core aregenerally assumed to be uniform because their diagnostic gophysical phenmena are maked by the physical-poperties of the uppr layers.

are too loose and unconsolidted to support a vry large hole, and this is tue of th mud or sand deposited as sediment at the bottom of a sea, lake, or river. Howevr, mud or sand, buried beneath the earth's surface by a thic deposit of similar matrial may be consoidated by pressre, heat, and chemical action into a sedimentary rock sch as shale, sandstone, or limeston which wold support a large opening. At the relatively shallow depth of a thusand feet, huge natural caves, hudreds of feet in extent, larger than the one illustrated in figure 2, can be dissolve out of limestone by percolating ground water, and they will stand open becase most limesone is strong. The weiht of the rock abve is not great enough to collpse the caves. On the other hand, less stong sedimentary rocks, such as shale or poorly cemented sandstone, would not support smaller openings (say, 40 ft across) undr a load of a thousand feet of overlying rock. Just as in liestone caves, large openings at a 1,000-foot depth can also stand in unfractured igneus rocks, which are compsed of hard silicate minerals and which were emplaced in a molten state and then cooled to form strng, massive bdies. unfractured openigs Similar can stand in metamorphic rocks, which are sedimetary or igneous rocks that have been very highly compressed and We believe that the contiental crust is lagely made up of (1) dense light-clored igneous rocks, such as granite or quartz diorite, in the upper part and (2) basalt, a dark and slihtly denser igneous rock (commonly erupted from vlcanoes), in the lowe part. The oceanic crust appears to be composed almost entirely of basalt. The relative'thicknesses of the probable rcks occurring in four represntative oceanic and continetal locations (figs. 5 and 6) are givn in figure 7. Notice that the coposition of the crust as well as its thicknss varies laerally; the crust is not just a homoeneous, flat layer. The acclaimed purpose for drilling the Mhole is to get a sample of rock from the mntle. It is wdely believed that the discontinuity in earthquake wave veloity at the Moho is due to a chnge of rock type, from bsalt in the lower part of the crust to the mre dense eclogite or peridotite in the mantle. From the dep-sea sedimnts, from other crustal rocks, and from the mntle rock obtained.

This is my final assignement of the work!

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