Copy of a printed diagram referenced as "Structure of graphite"

Contributors

Fuller, Watson, 1935-

Publication/Creation

November 1963

Persistent URL

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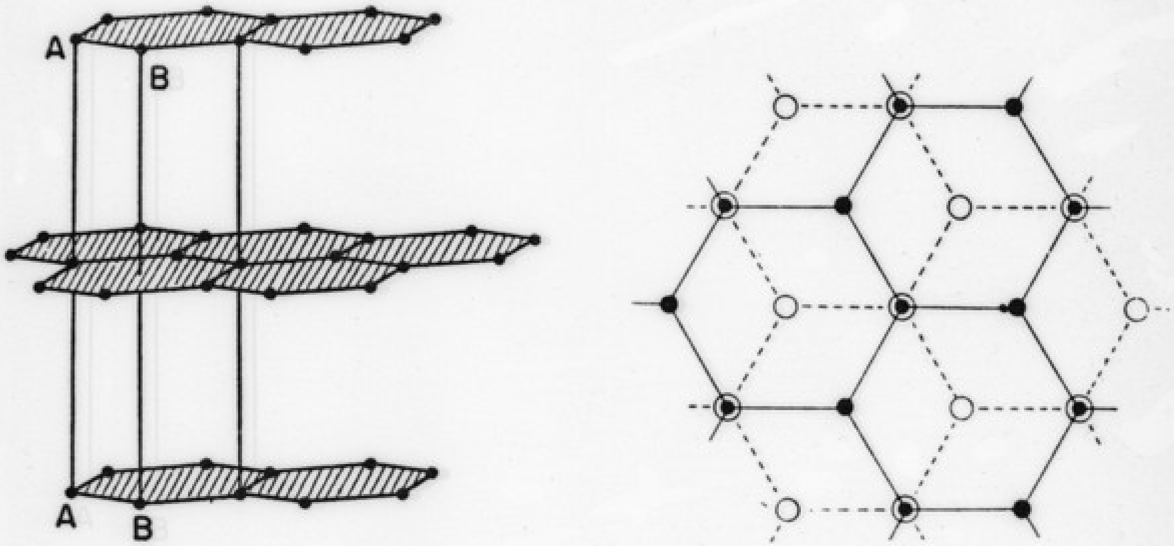
in the microscope. The [redacted] sisting, as it does, of a layered structure. Figure 4 shows the arrangement of the carbon atoms in the graphite structure, and when we look down on this structure from above we see that it is composed of a carbon network in which we have rows of carbon atoms arranged along three directions, each inclined at 60 degrees to one another, as in Figure 5. When we look at small graphite crystals in the electron microscope, we cannot resolve th [redacted] er see rows of lines, and this [redacted] Figure 6, plate 1, a photograph of graphite taken by Mr. E. Follett. This is known as a moiré pattern and it is quite simply derived from the superposition of layered structures.

The production of this moiré pattern can best be understood by considering as a [redacted] plate II, as in Figure 7, we superimpose two such identical ruled sets of lines, inclined at a small angle to one another, then a third pattern emerges. This third pattern is known as the moiré pattern. The spacing of these moiré fringes, as they



-Structure of graphite (J. M. Robertson, *Organic Crystals and Molecules*. Cornell U.P. 1953)

are called, varies with the angle between the two ruled patterns, and as we rotate the one set of lines with respect to the other, we can vary the spacing between the secondary bands. Now this is the very simplest kind of optical analogy to what is [redacted] This complexity can be introduced by having a multiple number of plates with ruled lines all set at different angles, or by having sets of lines with differing spacings ruled on them. But just as in graphite they can be related back to the structure of the graphite lattice itself, so in ribonuclease can they similarly be related to the structure of the ribonuclease molecule.

As we have shown, however, moiré patterns, although related to the basic structure of the crystal, have spacings which are not simple multiples of the basic molecular dimensions, since the spacing observed depends on both the molecular

[redacted]