culent, alternate, bifoliate leaves, with rounded leaflets 2 to 3 cm long; bright, salmon-colored flowers usually borne singly in the axils of the leaves; and green, five-angled, ribbed pods which vary from slender to rather stout, and from 3 to 8 cm in length. The stem, which sometimes grows to a height of five decimeters, is single at the collar with numerous branches above. The plant comes up each year from a tough, crooked, light brown perennial root that is about 1 cm in diameter. The root grows horizontally at a depth of from 10 to 15 cm below the surface, and sometimes extends several meters in the same direction, giving rise to shoots at irregular intervals. More than half of the cross-section area of the root is storage cortex.

In so far as is known, this field is the first and only place in Colorado where the Syrian bean-caper has become established. It has not been found to be troublesome in New Mexico and is even useful there. According to those who have watched this infestation of *Z. fabago* in Colorado, plowing alone has little effect upon it, alfalfa does not smother it out, and yet it does not seem to spread rapidly. The bean-caper has been controlled in this location by lifting the roots from plowed ground with a pitchfork, which exposes the roots and shoots to desiccation that eventually results in death. The roots apparently do not extend to any great depth in this one known infestation in Colorado where the soil is open and rather light. The enormous root system, however, looks dangerous, and gives reason to fear that if the plant becomes as abundant in heavier tilled soils as have Russian knapweed (*Centaurea picris*) and perennial peppergrass (*Lepidium draba*), it would be an equally persistent and noxious pest.

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PROPOSED AMENDMENTS TO THE INTERNATIONAL RULES FOR BOTANICAL NOMENCLATURE

Article 36. Substitute for the present text the following:

Descriptions of new groups should be in a language generally understood by the scientific botanists of the world.

Note: Any person who has had sufficient botanical training and experience to qualify him to describe new genera and species of plants must be familiar with at least one of the more generally known languages.

Article 39—Recommendation XVIII ter.

In selecting the nomenclatorial type or standard species of the genera of non-vascular cryptogams to choose species that will fix the generic names as they are now commonly applied.

Example 1. Hypoxylon Fr. Summa Veg. Scand. 383–4. Fries first used the name for a genus to include 25 species now distributed in Ustulina, Anthostoma, Nummularia, Daldinia, Sordaria, etc. To take the first species, *H. ustulatum*, as type would displace the name Ustulina, and most of the other species which are now known as Hypoxylon would require another generic name. If, however, *H. coccineum*, species No. 11 in Fries' list, a well-known and widely distributed species, be taken as the type or standard species, the name Hypoxylon would be retained in its present general application and the nomenclature stabilized.

Example 2. The genus Valsa, Fr. Summa Veg. Scand. 410 contains 44 species representing several different genera. The first species *V. sorbi* is now known as Eutypella. By selecting *V. ceratophora* Tul. (*V. decorticans* Fr.) the name Valsa is retained in its present general application and many nomenclatorial changes are avoided.

Note: Numerous cases of this kind might be cited among the fungi. Following the above recommendation would largely obviate the need of a lengthy list of *nomina conservanda*.

A permanent nomenclatorial committee should be appointed to decide disputed questions regarding the choice of generic names and their types.

The writer will be pleased to receive notes of approval or otherwise from botanists.

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QUOTATIONS

THE CARNEGIE INSTITUTION OF WASHINGTON

ANDREW CARNEGIE was one of the first to appreciate the benefit that science could derive from being competently organized and directed. Although he never applied true research in his own mills and set up only testing laboratories, he knew what leadership had accomplished in his own enterprises. Laboratory research in pure science before his day had been conducted by gifted individual professors, and by 1900 they were complaining that they had become specialists who could not follow one another's work. What an enormous impetus science would receive if they could work together!

Thus was conceived the Carnegie Institution of Washington, which now celebrates its twenty-fifth anniversary. The six hundred volumes published by the institution, all devoted to research, testify to the clarity of Carnegie's vision and to the brilliant competence of Gilman, Woodward and Merriam as administrative presidents.

To summarize the institution's achievements would be to write the later history of science in twelve major departments. The colossal instruments of Mount Wilson have extended the visible heavens, so that we now regard the Milky Way as but one of many universes. Terrestrial magnetism, thanks to the cruises of the non-magnetic ship *Carnegie,* is now a recognized branch of geophysics, with a mass of facts so well correlated that the secular changes which occur in the mariner's compass can now be scientifically corrected. The institution's Cold Spring Harbor station has attacked the difficult task of determining how the thousands of different plants and animals originated and how they are still evolving, with results that would even now enable man to improve himself biologically and socially if he had the courage to apply them. In the Geophysical Laboratory discoveries have been made which enable us to form a truer picture of the process to which the earth was subjected when rocks and oceans were formed from a molten globe. Man's mechanism for converting food into tissue and energy is less mysterious than it was, thanks to the researches of Dr. Benedict and his associates. Mainly through the efforts of Carnegie archeologists have we been able to envisage the magnificence of the vanished Mayan civilization of Central America.

Mindful of its obligation to the public, the institution has placed its volumes in the principal libraries and has periodically issued simply worded statements which have been widely disseminated as news. Thus the great reading public and specialists have been welded to form a constituency for pure science. As it takes stock of its accomplishments the institution may pride itself on having faithfully carried out both the letter and the spirit of Andrew Carnegie's purpose, as expressed in the articles of incorporation approved by Congress, "to encourage, in the broadest and most liberal manner, investigation, research and discovery, and the application of knowledge to the improvement of mankind."—*The New York Times.*

SCIENTIFIC BOOKS

Die Pflanzenreste des mitteldeutschen Kupferschiefers und ihre Einschaltung ins Sediment. Eine palökologische Studie, by Professor Dr. Joh. Weigelt. 198 pp., 14 text figs. and 35 plates. Gebrüder Borntraeger. 1928.

This interesting and important contribution is an attempt to explain the manner of origin of the Kupferschiefer, largely from the evidence of the contained plant fossils—a subject that has been actively discussed, chiefly from other points of view, both by paleontologists and economic geologists, as is evinced by the bibliography of 171 titles. Much of this discussion has been concerned with the origin of the copper ores, a subject outside the scope of the present discussion, although Weigelt presents some evidence of the syngenetic origin of these ores.

The Kupferschiefer is a black bituminous shale, remarkable for its areal extent, which is said to be over 60,000 square miles, and for its slight but uniform thickness of between two and three feet. In places copper ores are abundant enough to have given rise to a mining industry, as along the flanks of the Harz. The Kupferschiefer lies on either a seven-foot conglomerate or on a white sandstone—the Weissliegendes, beneath which are several thousand feet of mostly barren red sandstones and shales of lower Permian age—the Rothliegendes. The latter includes coarse conglomerates as well as coals, and porphyritic and diabasic effusives and their associated tuffs.

Above the Kupferschiefer is a twenty-five-foot magnesian limestone with marine fossils, and this is overlain by thick saliferous beds of the upper Permian, with anhydrite, rock salt, carnallite, etc. Weigelt considers the area to have been land locked except on the east, with the Fennoscanian land mass on the north, the rising Armorican mountains on the west and the Variscan mountains on the south, the two last joining at almost right angles in the Auvergne, representing a period of folding frequently called the Hercynian, especially in France.

Weigelt derives the Rothliegendes from these rising mountains and considers them to have been sufficiently high to have brought about extremely arid conditions in the German basin, thus accepting the orthodox view that red sediments are indicative of deserts. The Kupferschiefer deposition was inaugurated by a transgression of the sea from the Russian region. This sea was very shallow and is considered to have been bordered during its transgression southwestward by a marginal zone of vegetation back of which was desert. The Weissliegendes, because it contains dreikanter, is interpreted as largely reworked dune sands and not a humic bleaching of basement sands. The plant fossils are believed to have been washed into the basin of deposition by occasional floods. Subsequent to Kupferschiefer time the connection with the open sea to the eastward was chocked, either by palustrine vegetation or a change in the attitude of the land, and its evaporation furnished the middle Zechstein salt deposits. This phase was followed by a renewal of sea connection and a second isolation resulted in the upper Zechstein salt deposits.

Most of the widely distributed plant débris consists of wood fragments or twigs, of prevailing coriaceous plants, profuse in individuals but sparse in species.