BOTANY

# NATURE RAMBLINGS

**Hepatica**

➤ MOST of us can bring at best only a patient acceptance to the spring's earliest flower offerings—skunk cabbage and pussy willows and the like. We admit without argument that the naturalists are right when they tell us these are flowers; but what we actually hanker for is a *real* flower, one with bright petals strung around into a collar with some leaves to back it up.

The hepatica satisfies this demand, and it is among the earliest of flowers to do so. It will be out in force to greet the earliest robin, while the branches of the trees above it are still bare, while the first violets are making the most timid of bows. The little white or bluish flowers nestle down on their short, hairy stems among the dead leaves and frequently you can find them by brushing aside these brown blankets, still flecked with the last light fall of snow.

The hepatica is a hardy little plant in any case, for its last year's leaves hang on through the winter, and the new spring crop of foliage does not develop until after the blossoms are gone. A little closer examination of the stems will show that the leaves are thickly clothed with stiff little hairs. These, of course, are not of use to the plant for keeping warm as an animal keeps warm with its fur. Apparently their role is to keep the hoarfrosts of spring from a too close contact with the stem.

Although we are apt to give it little thought, it is nevertheless true that the woods harbor many more kinds of evergreens down at the roots of the trees than can be counted among the pines and spruces and cedars. Of this lesser evergreen population the hepatica is one of the most frequently found specimens.

The sturdy little hepatica appears to have little concern for the length of the winter season, for it will send forth its delicate white or bluish flowers at about this time every year. It does so even though later storms may force it to close its flowers about the stamens and pistil and wait with patience until the last of winter's storms have passed. Then again it unfolds its flowers to the warm kiss of spring's sunshine, harbinger of the many flowers to come.

Science News Letter, March 17, 1951

GENERAL SCIENCE

# From the Winners' Reports

KOLENKOW WRITES

*"This calculator is elementary, but as a simple prototype of the giant computers, of which one hears so much today, it is valuable as a three-dimensional textbook, wherein one may learn the fundamental operations of electrical computers. In the large machines, the relays are replaced by tubes to gain speed, yet the principle remains the same.*

*"The machine was constructed over a period of six months, requiring approximately one hundred and fifty hours of labor. The greatest part of this time was spent in designing and constructing the relays. The cost of comparable commercial relays made it unfeasible to employ them.*

*"The union of electricity and mathematics has proved a fruitful one. The mathematician is no longer hampered by tedious, often impossibly long problems. Weather forecasting by the use of high-speed calculators is only one of the benefits to be derived from these machines.*

*"Not only have I enjoyed building this apparatus, but at the same time I have been educated in the fundamentals of this comparatively new field. New developments come every month, and the person inexperienced in the art is often bewildered by the complexity of it. I hope that my calculator will serve to help educate them; if it does that, it will be well worth the labor expended on it."*—From the report of Robert Kolenkow.

ERNST WRITES

*"It is well known that gravitation (which will be used to refer to the effect of falling toward the earth) can be explained in two manners:*

*"(1) a 'force of gravity' (which will be used to signify a force of attraction between masses) causes the bodies to approach each other.*

*"(2) Space surrounding great masses is non-Euclidean. A body in this space follows that path which is easiest to follow (the geodesic). In the following article I show that the body will move toward the great mass which is contorting the space.*

*"Both these methods are valid and yield the same results, but I prefer the latter since it is the easier to propound mathematically. My project consists of applying the curved space method to the study of bodies falling from rest, a very common occurrence. The exploitation of this project necessitated the study of the most modern, the most powerful mathematics ever conceived, the tensor calculus. Therefore, in order to abridge my work as much as possible I refer the reader to 'The Einstein Theory of Relativity' by L. R. Lieber for the background necessary to understand the following exposition."*—From the report of Frederick Joseph Ernst.

Science News Letter, March 17, 1951