Do You Know?

As much as 50 barrels of water may evaporate from the surface of the leaves of a large *elm tree* in a single hot summer day.

Corn-and-cob meal, made by grinding the corn and the cob together, has high value for *cattle feed;* the cob is found to be 64% as valuable as the grain itself for fattening purposes.

Barite is a mineral used as a weighing agent in heavy drilling oils, as a filler in rubber, a pigment in paints, a flux in glass melts, and in the manufacture of barium chemicals.

An old Indian belief that *beech trees* are never struck by lightning probably comes from the fact that wild beeches grow in groves with taller trees that are more apt to be struck.

Seismologists say that the *earth* shakes itself about 85 times a day; most of the shakes are little ones but not too small to be picked up by sensitive seismographs.

A mechanical engineer comes in every week on his lunch hour for a transfusion. He has leukemia. The blood will not cure him, but it may help to keep him alive until a cure for this disease or an effective aid is discovered.

Three pints of whole blood before operation, and two pints immediately after and two pints daily for several more days were needed for another patient when his enormously enlarged spleen was removed. A 50-year-old woman suffered 12 years with ulcers from varicose veins on her legs. They are healing now, thanks to red blood cells sprayed on the ulcers. The red cells were separated from whole blood returned to the Rochester center because it was too old for use in transfusion.

These are some of the special, unusual cases in which blood or its products are used. In the Rochester region, as elsewhere in the nation, come the ordinary emergency demands for blood to save an accident victim, a mother hemorrhaging unexpectedly in childbirth, a patient with a stomach ulcer that erodes a blood vessel and causes hemorrhage that could be fatal.

Second of three articles on blood.

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PSYCHOLOGY

Black Not Always Black

➤ BLACK is not always black, nor is white white.

If you have access to a projector for slides or color transparencies, you can prove this to yourself and your friends with a dramatic experiment. Just how it works is revealed by Dr. Hans Wallach of Swarthmore College, in the *Journal of Experimental Psychology* (June).

Cut a disk from black paper and hang it in the doorway of a room. Arrange your projector so that its light will be focussed on the disk and then will shine on the ceiling of the adjoining room out of sight of the "audience."

Now dim the light in the room. The disk, instead of being black, will appear white. But keep on shutting out all illumination until your room is completely dark, except for the illumination on the disk. Now that inky black disk will shine like a bright moon.

Suppose next you gradually cut down the light shining from the projector. What will happen? You may be surprised to find that it still looks luminous—not white or black—although as the light decreases, it becomes dimmer.

Whether an object looks white, black, gray, or luminous depends not only upon the illumination of the object and the light reflected from it, Dr. Wallach found, but upon the difference in light reflected by the object and its surroundings.

He tested this out and worked out the mathematics of the relations by using an ingenious combination of two projectors, one rigged up to project a disk of light on a white screen, the other fixed so that it would project a ring of light in such a way that it would form an outer edge for the disk.

When he kept the brightness of the disk the same and varied the brightness of the ring, he could at will change the appearance of the disk all the way from white to dark gray. The brighter the ring, the darker the disk would become. And when the ring was made to look a dark gray, the disk then became white.

Cut out the ring altogether, and the disk ceases to look either white or gray and becomes a glowing moon.

In another experiment Dr. Wallach rigged up two sets of disks and rings, in which the area of the ring was the same as that of the disk. It was arranged so that in one set the ring was darker and in the other the disk was darker. The observer was allowed to vary the intensity of the second disk, and was requested to match the color of the two sets in this way.

It was found that when the colors matched to the observer's satisfaction, the proportion of brightness between disk and ring was just about the same in both sets, although one was much dimmer than the other. The small difference in ratio indicated that for the same intensity ratio, the object will appear a lighter gray if disk is brighter than the ring, than if the ring is brighter than the disk.

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