

Wisconsin School of the Air
Afield With Ranger Mac
December 11, 1939

THE RIVER

Hello Boys and Girls:

This is your day -
So, up and away!

Ranger Mac met a man from California the other day and he remarked that our weather beats their's. These have been fine days. Gorgeous sunrises -

"Make your heart shout,
Look just like heaven
Turned inside out."

Great days for hiking; great days for getting out at recess time; tho as I recall it, recess time is an enjoyable time regardless of the weather. Everything has been fine about this Fall except the rain - we have not had enough rain. In most places in the state, we're going into the winter with the ground dry. That is hard on the trees that retain their leaves - the evergreens. For there is some evaporation from the leaves of evergreen trees even in winter, and when there is a rather warm wind from the south, as frequently happens in winter, the evaporation may be increased beyond the supply, and the trees suffer what is called "winter burn." I noticed many people soaking up the ground around the evergreens on lawns. This is a wise thing to do before winter sets in, if nature does not supply the needed moisture. Water, water, water! Needed in some way in most everything that nature does. Water, like fire, is a great friend to man, when it is found where it is needed in the right amounts. But let water or fire get out of bounds, then either one may prove to be as deadly an enemy as a hurricane or a pestilence.

All of our Trailhitters are old enough to remember the flood that took place in the lower half of the Mississippi River in 1937. That's water out of bounds. That flood cost the lives of many thousands of people, and suffering to an extent you and I will never know. It cost in property damage over 400,000,000 dollars. These floods have been occurring quite often in the last few years. There was a time when the Mississippi had much more water than it does now. That was when Lake Superior emptied

into the Mississippi thru the St. Croix River and Lake Michigan emptied into the Mississippi thru the Illinois River. That was before the great ice sheets spread over the northern part of North America. These ice sheets carried enormous quantities of stone and gravel and silt. When the ice sheets melted, this stone- "Hard heads" you call them, and the gravel and the silt were left. Frequently this deposit blocked rivers and changed their courses. It filled the place where Lake Superior had its outlet into the St. Croix; and it did the same thing at the south end of Lake Michigan where it entered the Illinois. Man has built a canal thru this deposit - called the Chicago Drainage Canal. Then the water of these lakes had to find another outlet so it cut another outlet out thru the St. Lawrence, cutting the deep gorge and making Niagra Falls. Of course, that was way back before man lived on this continent, or if he lived here, before he learned to write and leave any recorded history.

Since man has had any acquaintance with the Mississippi River, there have been floods. One time Ranger Mac read a story of a great flood that occurred about 1750, and Indians have stories that have come to us by word of mouth telling of floods that happened before white man set foot on this soil. But the floods did not happen frequently then; once in a long remembered time. These early floods deposited rich soil in the south and made the rich alluvial plain in the south upon which so much of our cotton is grown. But of recent years these floods have come quite often - 1890, 1903, 1913, 1916, 1927, 1937; each flood carrying more water and doing more damage than the previous one. In the flood of 1890 the water rose to a height of 35 feet; in 1916 43 feet; in 1927 46 feet, and in 1937 almost 51 feet. Back in the early days of settlement, the French and the Spanish built dykes along the river to keep the water out of New Orleans at flood time. Now these levies or dykes have been extended from the Gulf of Mexico to the mouth of the Ohio; New Orleans to Baton Rouge; Baton Rouge to Natches; Natches to Vicksburg; Vicksburg to Memphis; Memphis to Cairo - a thousand miles up the river. Not only have the levies been lengthened, but they have been built higher and higher to take care of floods. The silt, the sediment - that is the

soil, brought down by the river from the cutover lands and hillsides, and the ploughed slopes on the farms way up the valley, brought down by the river, has filled up the river bed until now most of the city of New Orleans lies below the level of the Mississippi River bed, and one can stand on the levies and look down into most of the cities in the lower reaches of the Mississippi.

Now for every result there is some cause. Science teaches us that. And for these increasing number of floods, following each other so closely in recent years, there is a cause. We know very well what the cause is. Certainly the building of dykes doesn't prevent the water from coming down. More and more of the water must be prevented from coming down (carrying with it tons and tons of valuable top soil) from the farms and hillsides located in the vast drainage basin. How vast this drainage basin is, and how many rivers drain it, is a bit of information we are going to find out soon. The levies are simply ways of controlling floods, but not of stopping them. To prevent floods we must go back to the place where the rains fall upon the soil and the snows of winter melt. The stopping of floods means the holding of the rains and the water of the melting snows so that more of it will sink into the soil and more of it will evaporate into the air. Nature has provided the means to hold the water by trees, bushes and other forms of vegetation. Trees on the mountains and hills and the steeper slopes; grasses to hold the water and soil on the lesser slopes; proper cultivation of the soil on the mild slopes - all this to hold the water where the rain falls and the snow melts. You have heard the poem about "little drops of water, little grains of sand" - well, it is the little drops of water that are allowed to collect in rills, and rills in rivalets, and rivalets into swollen streams that make floods. Once our continent was nearly half covered by a virgin forest, white pine six feet thru and great hardwoods. Today four-fifths of this original forests are gone. First we cleaned out the forests of New England, then we moved west and cut the top off Wisconsin and Minnesota; then we moved further west and slashed the top off the Pacific States. We have thrown nature out of balance, and no wonder there are more frequent and disastrous floods. This has taken place practically over all the area, the vast area, drained by the Mississippi with its thousands of rivers and streams.

Let's take a look at the Mississippi River system. The word Mississippi is one of the first long words that most of us learned to spell. It has a rhythm about it that makes it easy to spell, for the same reason that poetry is so much easier to memorize than prose. Miss - iss - ipp - i. In the Algonquin Indian language, Missi means great; and sippi means river. It is one of the greatest river systems in the whole world.

From as far West as Idaho,
Down from the glacier peaks of the Rockies-
From as far East as New York,
Down from the turkey ridges of the Alleghenies-
Down from Minnesota, twenty-five hundred miles,
The Mississippi runs to the Gulf.

It drains that part of our country that lies between the Appalachian Mountains on the east and the Rocky Mountains on the West - a vast territory comprising about 1,500,000 square miles, or almost one half of the entire area of our country.

All of you have drawn pictures of trees. In doing it, you first draw a trunk, then starting near the bottom, you draw limbs long and outspreading, which get shorter and shorter as you near the top. Then you run branches off the limbs, then twigs off the branches, and then more twigs off the twigs. If you draw your picture in that way, your picture will resemble the Mississippi River system with all the rivers running into it, all the streams running into the rivers, all the creeks and brooks running into the streams, and all the rivulets running into the creeks. And so the Mississippi River system looks something like a tree, but a gnarly old tree with bent trunk. The main trunk is the Mississippi River proper, starting in the lake region of Minnesota, flowing southward, getting larger and larger as the rivers enter and finally carrying all the water from every rill, rivulet, creek, stream and river, that flows from about one-half our country.

All the water that flows down the Yellowstone, the Milk, and Cheyenne;
The Cannonball, the Musselshell, the James and the Sioux;
Down the Judith, the Grand, the Osage and the Platte;
The Skunk, the Salt, the Black and the Minnesota;
Down the Rock, The Wisconsin, the Illinois and the Kankakee;
The Allegheny, the Monongahela, the Flambau; the
Down the Miami, the Wabash, the Licking, and the Green,

The Cumberland, the Kentucky, and the Tennessee-
Down the Oachita, the Wichita, the Red, and the Yazoo;
Down the Missouri twenty-nine hundred miles from the Rockies;
Down the Ohio, a thousand miles from the Alleghenies;
Down the Arkansas fifteen hundred miles from the Great Divide;
Down the Red, a thousand miles from Texas,
Down the great valley, twenty-five hundred miles from Minnesota-
The Mississippi River runs to the Gulf of Mexico-
Carrying all the water that flows from one-half of the continent.
Year in and year out, the water comes down -
Down from the cut-off mountains - down from the plowed-off slopes;
Down from a thousand hillsides; down from the slopes where we've
plowed and planted with no thought for the future;
Down it comes, carrying with it soil from Pennsylvania and
Ohio; Kentucky and West Virginia; Wisconsin and Minnesota;
Missouri and Illinois; North Carolina and Tennessee;
Montana and Nebraska -
Four hundred million tons of top soil are washed each year into
the Gulf of Mexico.

This is one of the most beautiful pieces of land in all the world-this land that lies between the Rockies and the Alleghenies, but we have taken terribly poor care of it. We are beginning to be ashamed of what we have done. In 1929 Congress appropriated \$5,000,000 to start the work of checking erosion. Since that time the work has grown rapidly. It is a long story and on one of our trips afield next semester Ranger Mac is going to tell of the work that has been done. But just now, will you imagine a tank a mile wide and a mile high extending from New York City to Omaha. That tank would hold the water that falls each year as rain and snow on the land drained by the Mississippi River. About one-half of it evaporates, about one-third of it soaks into the soil and is used by plants and trees, but the rest of it must find its way down rill and rivulet; creek and stream into the Mississippi River and then to the sea.

Man cannot live without water; but when it is not controlled it causes terrible destruction as we have come to know from our experience in that most beautiful piece of the land in the world - the land that lies between the Rocky Mountains and the Alleghenies.

Will be with you again next week, and until then

May the Great Spirit
Put Sunshine into your Heart
Today and forevermore,
Resep Much!