

# LAND OF THE BIG MUDDY

On the heights of the Continental Divide the first snow is falling. Soon the snow packs will form, and a thousand rivulets, streaming down to the outstretched finger rivers of the Missouri, will freeze over. Across the lonely badlands and treeless plains, the rain is mild and gentle, and the Big Muddy and its tributaries are snug in their beds. In Iowa and Nebraska, in Montana and the Dakotas, all but the latest crops are in. For the farmers and ranchers of the Missouri Valley, one year of risk and struggle is ending, another will soon begin.

No longer do rancher and farmer struggle alone against flood and drought in one of the most formidable regions of a formidable continent. For seven years, the Missouri Valley has been the scene of one of the greatest land and water control and development projects ever attempted, a spectacular 35-year, \$15 billion state & federal public works program designed to tame the huge watershed, stretching from the Mississippi River to the Great Divide. Since August 1945, when the ten valley states and six federal agencies joined in an informal, voluntary federation (the Interagency Committee) to put the Missouri Valley development program into effect, engineers have:

- Q Spent more than \$1,396,000,000 in the basin (compared with \$855,751,165 in the first seven years of the Tennessee Valley Authority).
- Q Built 17 huge multiple-purpose dams and reservoirs.
- Q Constructed facilities for the generation of 966,228,000 kw-h of electric power annually.
- Q Strung more than 3,000 miles of power transmission lines.
- Q Built canals, tunnels and pumping stations to irrigate more than 750,000 acres of land.
- Q Finished 400 miles of new levees on the Missouri and three-fourths of a 9-ft.-deep, 760-mile navigation channel.

## River of Gold

The nub of this development program is the turbulent Missouri River, longest on the continent, stretching 2,465 miles from Three Forks, Mont. to the silt-choked mouth which empties into the Mississippi River, ten miles above St. Louis. Besides other names, many unprintable, the Missouri has been called "the most useless river there is." Government engineers, pointing up their hopes of a harnessed watershed, call it the River of Gold. Farmers who live by its banks and have fought its silt-laden flood tide year after year call it the Big Muddy.

The Missouri begins its long run 4,000 feet above sea level in a green, fertile Montana valley; three clear, sparkling rivers—the Madison, Gallatin and Jefferson—flowing down from the Continental Divide, come together at Three Forks to form it.

As it sweeps along, the Missouri gathers the waters of one tributary after another: the Sun, Teton, Judith, Marias, Musselshell, Milk, Yellowstone (fed, in turn, by the Bighorn, Greybull, Shoshone, Tongue and Powder), the Little Missouri, Knife, Heart, Cannonball, Grand, Moreau, Belle Fourche, Cheyenne, Bad, White, Big Sioux, James, Niobrara, Elkhorn, Platte, Little Sioux, Nishnabotna, Kansas (made up of the Republican, Solomon, Saline, Smoky Hill and Blue), the Grand, Chariton, Osage and Gasconade.

Until it reaches the Yellowstone, the Missouri's waters run clear. In eastern Montana, behind Fort Peck's four-mile-long dam (completed in 1937), the river's 245,000-acre reservoir is a wide, blue lake. Near the North Dakota border, the Yellowstone dumps silt from the dry, brown plains of Wyoming and Montana into the Missouri. From that point on, as it receives the waters of other tributaries, the Missouri grows increasingly muddier. Through the open, windy plains of the Dakotas and past the yellow and brown farmland bluffs of Iowa, Nebraska and Kansas, the color of the river changes to a rich, deep brown. Some of the silt piles up in sand bars; the rest sweeps along with the river, through Missouri's humid, green farmland. At Missouri Point, where the Missouri empties into the Mississippi, the Big Muddy deposits more than 200 million tons of soil each year.

## The Lean Pork Chop

The Missouri Valley is an enormous funnel (see map), shaped like a pork chop, ranging eastward from the Divide 800 miles across mountains, badlands, plains and prairies, and southward 700 miles from the Canadian border. (Tributaries of the Missouri also drain 9,715 square miles of the Canadian provinces of Alberta and Saskatchewan.)

The basin encompasses all of Nebraska, most of Wyoming, Montana and the Dakotas, and parts of Colorado, Kansas, Minnesota, Iowa and Missouri. The third largest watershed on the continent (after the Mackenzie and St. Lawrence), it includes mountain ranges of majestic grandeur (the Absaroka, Big Horn, Wind River and Medicine Bow all have peaks above 11,000 feet); such tourist country as the Black Hills, the South Dakota Badlands, large areas of Yellowstone Park, Rocky Mountain National Park and Glacier Park; 17 million acres of national forest, 20 million acres of unclaimed public land and 34,000 square miles of Indian reservations.

Development of the valley never kept pace with the rest of the U.S. Old maps used to include most of it in the area they called the "Great American Desert." Settlers bound for greener pastures in Oregon and California hurried across the plains as fast as they could go. When ranchers and farmers did settle in the valley, they were immediately faced with the natural hazards that have persisted to the present day: annual floods, cycles of two-to-three-year droughts, blizzards, tornadoes, extreme hot & cold temperatures.

The Missouri Valley of 1952 is a big land of small villages and towns. It has only four cities of over 100,000 population (the two Kansas Cities, Denver and Omaha), only five others with more than 50,000 (Lincoln, Topeka, Sioux City, St. Joseph and Sioux Falls). There are fewer than a dozen manufacturing centers in the valley and the area's population rose but 3%, against the national average of 14.4 during the last ten years. (In 1910, the valley sent 64 members to Congress, now only 51.) Today, 7½ million people live in an area as big as seven Western European countries, which have a population of 180 million.

There are, however, some boom spots in the valley. In 1951, high-grade oil was struck near Tioga in the Williston Basin of western North Dakota. Last week Stanolind Oil & Gas Co.'s A. L. Solliday gave some estimate of Williston's exciting future. His eye-bugging observations: "You have an old-fashioned boom of major proportions on your hands. As of the first of this week, there [were] 69 rigs drilling, with 19 more locations staked [out]. Eventually there are going to be a lot more newcomers with this expanding oil play than most of you realize . . . Our economists figure that an oilfield requires one man for every 44 barrels of oil produced . . . Behind every man in the field, there are at least three in an office . . . All businesses will swell . . ."

Another, but less exciting, boom area is Denver (pop. 415,786), bustling commercial and financial center for the western plains. Rapid City, S. Dak. (pop. 25,310) has a big B-36 base and is in the midst of an \$18 million program of housing construction. Also thriving are Omaha (pop. 251,117), with packinghouses and food-processing plants, and the Kansas City area (pop. 586,175), which has had an influx of light industry.

## The Pick-Sloan Plan

To control and develop the land and water resources of the valley, Congress in 1944 authorized the Pick-Sloan plan, named for General Lewis A. Pick,\* head of the Army Corps of Engineers, and W. Glenn Sloan of the Interior Department's Bureau of Reclamation. The next year the Missouri Basin Interagency Committee was formed to give representation to the Depart-

\* This week a Senate Armed Services subcommittee charged that General Pick had not given "full, frank and comprehensive" testimony during an investigation of the North African air base construction program. Pick replied that the report was "overly critical."

ments of Agriculture and Commerce, the Federal Power Commission and Federal Security Agency—and to the ten states in the valley. The committee meets about once a month and gives the agencies and states a chance to compare notes and to review the progress of the plan. The committee has no authority over the individual agencies, but by persuasion its skillful staff has managed to effect a high degree of coordination and cooperation.

Spread over 35 years, the control and development program will eventually spend \$9.4 billion in U.S. Government funds (including \$3.4 billion earnestly hoped for by the Department of Agriculture, but still unauthorized by Congress), \$428 million raised by the states, counties and towns, and \$5 billion supplied by ranchers, farmers and landowners (for conservation measures). With this money, Government engineers (by 1980) will have built 138 major power, irrigation and flood-control projects. These include:

- Q Five dams on the Missouri which will be among the largest in the world, and which will transform the Big Muddy into a chain of clear, blue lakes.
- Q Several thousand smaller conservation dams to stop erosion and floods.
- Q Facilities to generate 13.7 billion kw-h of electric power a year.
- Q Eight thousand miles of power transmission lines.
- Q Canals, tunnels and pumping stations to irrigate 5,000,000 acres of farmland and supply additional water to 5,000,000 presently irrigated acres.
- Q Fifteen hundred miles of levees and a 760-mile navigation channel in the Missouri from Sioux City, Iowa to the river's mouth.

The Pick-Sloan plan has been the center of many controversies. Individual projects have been questioned and fought over by competing federal agencies, states, localities and private interests. Typical conflicts are:

## Big v. Little Dams

The Army Engineers insist that lower basin levee systems must be reinforced by big river flood-control dams, like the \$87 million Tuttle Creek project on the Big Blue River north of Manhattan, Kans. Authorized in 1938 as the key unit in the control of the Kansas (Kaw) River Basin, it was blocked for 14 years by angry farmers whose land would be flooded, and who argued instead for a federally financed program of soil conservation (contouring, terracing) and small detention dams on the land to hold the water where it fell. Each year the late Senator Clyde Reed of Kansas knocked the Tuttle Creek item out of the engineers' money bill.

This year, after Kansas' billion-dollar flood of 1951 served notice that the Kansas City area might be inundated again & again until the Kansas and its tributaries were controlled, Congress appropriated \$5,000,000 to start Tuttle Creek Dams. Embattled Blue Valley residents still hope to block the project's completion, and their warning that "if Tuttle Creek is built, there is a shadow and threat over every fertile valley in the Missouri Basin" has not gone unnoticed in farmhouses that have been marked for condemnation in other river valleys if the "big dam" principle wins.

## Irrigation

Pick-Sloan irrigation projects have been attacked as impractical, uneconomical and unnecessary—and as vigorously defended. In South Dakota, farmers oppose the 250-mile-long storage reservoir planned for the big Oahe Dam across the Missouri near Pierre (pronounced Peer). Some insist that the reservoir's water will never be used for farming because the easily eroded South Dakota soil is not suitable for irrigation.

Other critics assail the unit cost of irrigation. They say it makes little sense to pay \$750 to irrigate an acre when fertile dry land can be bought for \$450 an acre. In parts of north-eastern Montana, dry-land farmers, who have been getting along satisfactorily, refuse to join new irrigation districts, and so far Pick-Sloan has been able to bring only 12,300 of its planned 5,000,000 new acres into irrigation.

## Public v. Private Power

Early in the Pick-Sloan plan, the Montana Power Co. made a determined but unsuccessful effort to prevent the Bureau of Reclamation from building a power-generating station as part of the Canyon Ferry Dam across the Missouri near Helena. Since then, private power companies in the valley have acclimated themselves to a policy of uneasy coexistence with the Government projects. They have been willing to buy electric power wholesale from the Government, but they have been afraid that the Government might use the reclamation projects as steppingstones to the socialization of the valley's electric utility industry.

Under federal law, the Bureau of Reclamation must distribute Government power by a system of priorities; with publicly owned plants and cooperatives, like REA, the favored customers. Thus, South Dakota fears that Nebraska, a 100% public power state, will get the lion's share of Fort Randall's power. Nebraska, in turn, fears it may lose many of its best municipal customers who might buy direct from Randall.

## Dry v. Wet States

Some Pick-Sloan critics charge that the plan envisions the use of more water than the valley contains. The arid western states insist that enough water be kept in their areas to meet the needs of future development. Spokesmen like Montana's big, bluff Governor John W. Bonner contend that this will be impossible if water is "sucked out" of upper valley lands for a lower basin navigation channel and the huge power dams. Down-river opponents such as Missouri's Governor Forrest Smith reply that proposed irrigation projects in the West may cut off lower valley drinking water.

## MVA v. Pick-Sloan

The hottest question in the valley has long been how to administer the program. Basin leaders, including many Pick-Sloan supporters, worry over the loose, voluntary Interagency setup. They see that stronger central control will be needed when the interlocking chain of reservoirs and power lines reaches operation stage and when decisions will have to be made among conflicting demands for water.

One proposal, supported by the National Farmers' Union, labor unions and liberal Democrats in the valley, has been a TVA-patterned Missouri Valley Authority, run by a board of commissioners nominated by the President. But MVA bills, introduced by Montana's Senator James E. Murray, have been rebuffed by Congress. Most valley governors and probably most valley residents fear a superstate over their region.

Another approach was suggested in 1949 by the Hoover Commission, which recommended a new Bureau of Natural Resources to be made up of the Army Engineers, Interior's Bureau of Reclamation and Agriculture's Soil Conservation Service. A year later, President Truman's Water Resources Policy Commission proposed a basin commission with an independent chairman appointed by the President. In 1951, valley governors, led by Nebraska's Val Peterson, came out for a ten-state interstate compact, to include one federal member (with ten votes) on its "water master" governing board.

Since February of this year, a new eleven-man presidential fact-finding commission, headed by Editor James E. Lawrence of the Lincoln (Neb.) *Star*, has been holding hearings across the valley, listening to arguments about how to tame the valley. Last week, in Chairman Lawrence's home city, the commission concluded its hearings and prepared to file its report and conclusions with the President. Whatever future administration is recommended, it is dead certain that the giant construction program will go on and that huge sums of money will continue to be spent on Pick-Sloan projects.

As Val Peterson put it: "It is no longer a question of whether planning and building is good or bad. It is being done. The question is, how and by whom?" And, since most of the money for the work must come from elsewhere in the nation, the entire U.S. has a great stake in the development program and the future of the Big Muddy's basin.



## MEDICINE

### Entranced Skin

When he was born, in London, even his mother thought that he seemed to have a thick skin. As the baby grew, his skin darkened and hardened to a black, rough casing over his whole body except the chest, neck and face. It was covered with close-set black bumps; between them the skin was as hard as a fingernail, and if it was bent it cracked and oozed blood-stained serum. Someone cruelly dubbed him "the elephant boy." Doctors said he had been born with ichthyosis (fish-scale disease). Nobody knew its cause or cure. Treatment at some of London's best hospitals did no good. A trial operation to

Dr. Mason tried again & again, cutting his hypnosis time to three seconds. After he said the right arm would clear, it did. The boy's thighs and legs, which had been most heavily covered, cleared partially. His back was 90% cleared. The boy, now 18 and happier than he had ever expected to be, has learned to hypnotize himself to maintain the improvement. He is working as an electrician's helper.

Skin specialists who read of the case last week in the staid *British Medical Journal* snorted, did not see how hypnosis could ease a condition which began in the womb. Neither could young (26) Dr. Mason, but he had witnesses to his treatment and the boy's improvement.



SHOCK TREATMENT (FROM "THE SNAKE PIT")  
A TB drug might be better.

20th Century-Fox Films

graft normal skin from his chest to his horny palms proved worse than useless: the grafted skin blackened like the rest, then shrank and stiffened his fingers. The boy went to school, but his teachers and the other pupils objected to him. Though he was quick to respond to affection, he got so little that he became shy and lonely.

Then Dr. Albert Abraham Mason heard of the case. In his studies of psychosomatic conditions, he had taken an interest in hypnosis. Eighteen months ago, in a white-painted hospital room in East Grinstead, Sussex, a dozen skeptical doctors watched as Dr. Mason talked the boy into a hypnotic trance. It took ten minutes. Then Hypnotherapist Mason said again & again: "Your left arm will clear." (He had begun with a particular part of the body to make the test more precise.)

About five days later, the coarse outer layer on the boy's left arm became soft and crumbly, and fell off. The skin underneath was reddened, but soon became pink and soft. In ten days the arm was clear from shoulder to wrist.

### Big Lift

When the new TB drug, isoniazid, was first used (TIME, March 3), doctors noticed that some patients seemed to get a tremendous lift: they felt wonderful, out of all proportion to any real improvement in their lung condition. With some, this euphoria was so marked that it was a nuisance. But Dr. Albert E. Krieser saw no reason to expect the same sort of trouble when he began using Pyridin (a brand of isoniazid) at Anoka State Hospital, Minn. His patients were both tuberculous and mental cases; most of them had shown nothing resembling a spiritual lift in years.

After three weeks, Dr. Krieser found that some of the severe mental cases at Anoka were definitely behaving better. By now, Dr. Krieser reports, six patients have improved markedly, twelve moderately, and three slightly, for a total of 21 out of 48 cases treated. There is no relationship between the effect of the drug on a patient's physical disease and on his mental

illness; some show physical improvement, but not mental, while others show the reverse; a few get better both ways.

Nobody knows how isoniazid affects the central nervous system to produce the lift. But Dr. Krieser and his colleagues want to make sure that isoniazid is, as they now believe, better than shock treatment.

### The Old Enemy

Not since 1640, when extracts of "Jesuits' bark" (cinchona) from Peru first gave Europeans the benefits of quinine for their "ague," has there been such good news for the world's malaria victims, who number hundreds of millions. Doctors can now handle a feverish flare-up caused by practically any type of malaria, and they can prevent relapses in most types. More progress has been made in the last dozen years than in the last three centuries. Last week the A.M.A. *Journal* published up-to-date reports on some of the latest drugs, based on the experience of G.I.s returned from Korea.

Malaria is not a single, simple disease, but a complex of diseases caused by several kinds of tiny protozoan parasites. In their complicated life cycle, after being transferred from an infected mosquito to a human host, they spend part of their time in the blood cells and part in the tissues.

Falciparum malaria, untreated, is more likely to be fatal than other forms. But the blood parasites, which emerge from the tissues only once, can be knocked out with the old stand-by, quinine, or wartime atabrine, or postwar Paludrine, Camoquin and chloroquine. The same drugs have done a good job of suppressing the fever flare-ups of relapsing ("vivax") malaria, which occur when the parasites are in the blood.

**One-Shot Cure?** The big task has been to find a drug which would not only suppress active malaria, but cure the disease by destroying the parasites during the periods when they hide in the body tissues, so that there can be no more relapses. And it should be something that can be taken once, or for a short time, and then forgotten. The Army medics knew that in the G.I.s returning from Korea for discharge they had a perfect test sample of men who would forget about "malaria discipline" as soon as they got home.

While they were in the lines and exposed to Korea's vivax-carrying mosquitoes, the troops got chloroquine (after the first few, disorganized weeks). It worked fine as long as they took it regularly. Even though they were bitten, the men had few feverish attacks. But they still had malaria. When they started home, the medics went to work on them aboard troop-laden transports. This time their weapon was primaquine, developed in the laboratories of Columbia University. These returned soldiers are being checked for relapses. There have been few, according to reports available now (but still incomplete).

Along with this mass test, the Army doctors got a chance to work on the soldiers who had gone to Korea first and come home earlier, without primaquine

plays and eight basic pass plays, and sometimes the coach thinks "even that . . . is too many." He is content to let the opposing team learn a staggering 80 or 100 plays, then never get a chance to use most of them.

Because Saturday's millions would rather roar over touchdowns than goal-line stands, "defense is something of a step-child in today's football." Present rules give the offense a slight edge over the defense, and the two-platoon system also makes the offense relatively stronger.

Old Rockne fans may still believe in pep talks, but Strategist Waldorf, no orator, says that "the day of the inspired locker-room oration has long since passed." He pins his hopes on "long hours of hard work on the practice field."

### Brains in the Ring

In Colorado, all professional boxers must get their brain waves tested regularly. Doctors audit the electronic rhythms inside each fighter's skull, 1) at least once a year, 2) within two weeks after he has been knocked out, and 3) often and repeatedly if his wave patterns look strange. After examining 24 boxers during a year, two Denver doctors reported their findings last week in the *Journal of the American Medical Association*.

Four fighters showed severe brain disturbances and five were moderately un-rhythmic in the head—indicating suspected brain damage. The worst patterns showed up in the younger boxers and in those who had been knocked out at least once. From this, the doctors guessed that older fighters and those who have never been knocked out either have punch-proof brains or an acquired knack for keeping their heads out of fists' way.

The doctors' recommendation: to reduce "relatively rare" ring deaths, the rest of the U.S. would be wise to copy Colorado law, make "compulsory [brain wave] examinations . . . a required part of [the] routine."

### Who Won

¶ Ada L. Rice's two-year-old Mr. Paradise, the six-furlong, \$107,120 Washington Park Futurity, with Jockey Eddie Arcaro racking up his 31st stakes victory of the season, in 1 min. 10 $\frac{3}{4}$  sec., by 1 $\frac{1}{2}$  lengths over Mr. Good, for a \$79,710 purse; in Chicago.

¶ Detroit Tiger Pitcher Virgil Trucks (5-15), his second no-hit, no-run game of the season, over the league-leading New York Yankees, 1-0, after only three Yankees reached first base, two on errors, one on a walk; in New York.

¶ The U.S.'s top-ranking Vic Seixas and Australia's third-ranking Mervyn Rose, the National tennis doubles championship, by defeating Australia's World-Beaters Frank Sedgman and Ken McGregor, 3-6, 10-8, 10-8, 6-8, 8-6; at the Longwood Cricket Club, Brookline, Mass.

¶ Florida's Doris Hart and Ohio's Shirley Fry, the National women's doubles title, by beating California's Louise Brough and Maureen Connolly, 10-8, 6-4; at Brookline.

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