THE FARM FRONT

by John Russell

Out in some of the western states the grasshopper plague has reached terrific dimensions, and the end isn't by any means in sight. One nesting area in Wyoming was reported in June with a grasshopper population of 1500 per square yard —and a population of 30 to 200 is considered critical.

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In that same week hoppers by the million were stripping hay fields and peach and apricot orchards over a path two and a half miles wide in eastern Oregon. A population of two million per acre was estimated in eastern Kansas, with crop losses of as high as 25 per cent. By late June the hoppers iu the plains states were growing wings and beginning to move out of fence rows and covered areas into the fields.

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But even Wyoming's nesting area concentration seemed small compared to that found in Nevada by July 1. There a population ranging up to 2500 per square yard was found in 188,000 acres of egg beds. A migratory horde covering 3000 square miles—40 miles wide, 75 miles long—was eating its way out of Nevada and into northern California and southern Oregon at a rate of two to six miles a day, and the population was from three to fifty adults per square yard over that whole vast area.

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Quite naturally, all this is fearsome news for farmers of the Plains and Mountain States, most of whom remember how grasshoppers completed the ruin begun by heat and drought in the dust bowl of the Nineteen Thirties, when, in some places, the insects were so thick on railroad tracks that locomotive wheels spun uselessly. Automobile traffic, too, was halted for days in eastern Colorado and western Kansas because roads were solid with the insects.

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Still living in Kansas and Nebraska are people who remember the year 1874, when, in late July and August, grasshoppers winged their way out of the northwest in clouds so thick that they hid the sun for hours and swept much of the states clean of green vegetation. The 'hoppers' special yen for onions, both the green tops and bulbs below the ground, led one Nebraska old-timer to swear that he could smell onion on the breath of a horde of the insects that swept past his door. Hundreds of settlers were forced to abandon their homesteads that year, and hundreds more would have been driven out had not relief supplies come out of the East.

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We call them grasshoppers, but actually they're the "locusts" mentioned in the Bible. Against man's intelligence the hopper pits its enormous capacity to (1) reproduce and (2) eat. It is a short-feeler insect with hard teeth and powerfully muscled jaws, capable of biting off and chewing up solid materials with remarkable rapidity. (In 1874, even sweat--soaked pitchfork handles and saddles were attacked.) It has preferences in food —it likes corn and dislikes sorghum, for example—but it can eat and digest almost anything, and does so in a plague year.

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Like all insects, it wears it skeleton on the outside—a marvelous chemical compound called chitin which sheathes the whole of its body. This flexible armor is tremendously tough, light and shatterproof, and resistant to alkali and acid compounds which would eat the clothing, flesh and bones of man. To it are attached muscles so arranged around catapult-like hind legs as to enable the 'hopper to hop, if so diminutive a term can describe so prodigious a leap as ten or twelve feet—about 150 times the length of the one-inch or so long insect. The equivalent feat for a man would be a casual jump, from a standing position, over the Washington Monument, according to a writer in the New York Times.

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Generally speaking, and contrary to appearance, a grasshopper does look before it leaps. Careful observers assert that ordinarily the creature chooses a landing place and judges the distance before it takes off. It does so through compound eyes made up of thousands of little eyes whose images fuse into one in the grasshopper's small brain.

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The eyes are protected by a sheet of transparent chitin through which the 'hopper can see all around itself, front and back, for a distance of several feet. For close work, however, the 'hopper has a set of three simple eyes, very small, one over the base of each feeler and one halfway between the feelers. Through these it can clearly see objects within a few inches of its face.

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But a scared grasshopper certainly does not look before it leaps. As a matter of fact, it can't see as far as it can jump—and it jumps as far as it can when scared. It seeks to mitigate the danger of this blind leaping by never jumping twice successively in the same direction; the leaps follow a zigzag pattern. Even so, it often jumps directly into some fatal snare—a spider web, a bird's beak, a pool of water.

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In the fall the female 'hopper seeks out a well-packed well-drained spot in the earth and thrust into it the pointed tip of her abdomen. She bores down, employing four hard prongs which can press together or spread out, like the expanding reamer used by well-diggers. Thus she can pack the soil against the sides of the hole being bored, without bringing any loose dirt to the surface. When she can go down no farther, she lays two or three dozen tiny eggs each tan-colored, cucumber-shaped, and covered with wet glue.

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In the spring the eggs—those not eaten by maggots, skunks, and so on—hatch out baby grasshoppers, which skip the caterpillar stage common to most insects. Each infant, clad in a transparent hatching skin which considerably hampers its movement, climbs painfully out of the hole, shrugs off the filmy envelope, and promptly begins to eat. It grows at a rather terrifying rate until its inner self is severely cramped by its outer shell, at which point it sheds its chitin surface and grows a new and larger one. It does this six times on the average during the next several weeks, developing wing stubs on the fourth molt, half-grown wings at the fifth and full-grown one at the sixth or adult stage.

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Which should be about enough regarding grasshoppers for now—except to add the sincere hope that they never get a notion to turn east, and come heading this way in their billions.

Stairs

Here's to the man who invented stairs
And taught our feet to soar!
He was the first who ever burst
Into a second floor.

The world would be downstairs today
Had he not found the key;
So let his name go down to fame,
Whatever it may be.

—Oliver Herford

Combine Combines Operations—This machine is the latest idea in speeding up the harvesting of big wheat crops. A standard automatic twine-tying baler was joined with a combine to do several jobs at once. With the arrangement, a two-man crew can cut the ripe wheat, thresh it, bag it, and bale the leftover wheat straw in one continuous operation. At the left an automatically twine-tied bale is shown ready to drop from the baling chamber.

Three Minutes of Fiction Fun

SHORT STORY

Terry, The Fox

By Richard Hill Wilkinson

"You can't fool an old fox like Terry Oakes," Anse Aetell was saying. "Not even if you're the smartest bank robber and gangster in the country." He chuckled, reflecting on the story he was about to tell.

"Glenville was pretty well wrought up that summer. In June, government agents came through, warning all the small town banks in the countryside to be on the lookout, and advising what to do. Duke Insabato and a couple of his henchmen, driven from their haunts in the large cities by a concentrated effort of local and federal agents who were dead set on bringing an end to the current wave of crime, were hiding out in the sticks and whiling away the time by staging spectacular daylight hold-ups of small town banks.

"The trouble was that no one knew where the varmints would strike next. Duke Insabato was smart. He understood small towns because he was brought up in one, and he chose as the object of his

pilfering banks that were pretty well isolated and unprotected.

"June passed and part of July. Gradually the fear of Glenville citizens began to subside. Only one other small town bank had been held up, and that more than 150 miles away. The depositors who had withdrawn their accounts reestablished them.

"Terry Oakes, the trust company president, didn't gloat. He was an old-timer at the game and he understood human nature. Early in June he'd had some signs printed and hung around the lobby of the bank. Such things as "Save for Your Old Age,' 'Deposit With Us and Your Money Will Be Safe.' The citizens smiled a little. Terry was trying to reassure them. One other sign was printed and inserted behind the glass in the front door. This, too, amused them, but it didn't annoy them any.

"On July 15 the quietude of Glenville's main street was abruptly and harshly interrupted. A high-powered black sedan suddenly appeared at the town's south entrance, roared down on the bank and came to an abrupt halt. Loungers in front of the general store jerked erect. Three men had leaped from the car. Two of them, one carrying a machine gun, ran toward the bank. The third stayed on the curb, a second machine gun nestling in his arm.

"The loungers, pop-eyed and frightened, watched in stupid fascination. To their utter astonishment they saw the two bandits turn at the bank door without entering, rush back to the car, pile into it and drive away.

"It all happened within seconds. For a moment or two, the loungers sat transfixed. Then of one accord they leaped up, raced across the street and entered the bank. Terry Oakes was talking on the telephone. He hung up and smiled at them.

"'Two to one,' he said calmly, 'Sheriff Iron picks up Duke and his gang at Jepson Corners. I just 'phoned him.' He looked from one pop-eyed citizen to another. 'No harm done, boys. They didn't even get in.'

"'But, why didn't they? What happened?'

"Terry grinned broadly. 'Duke Insabato knows small towns. He was a small-town boy himself. That is why he picked this hour to do his hold-upping. Right after lunch.

"'That's where I fooled him.' Terry paused to chuckle and glance toward the front door. 'It's lucky Duke knows small towns. Otherwise he might not have taken any stock in my sign."

"The bewildered citizens turned toward it and read. They were a little dazed, and not quick to understand.

"The sign read: 'Bank closed. Out to lunch. Return in one hour'."

Helpful Hints For Homemakers

When knitting elbows in children's sweaters, use double yarn. This will double the wear of the sweater.

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A convenient hat rack for the menfolk may be made on the inside of a closet door. Stretch two wires parallel and horizontal, across the door, ust far enough apart so the crown of the hat will fit easily between. Fasten the wires to the door with screw eyes. To insert the hat, slip brim under the wires.

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We keep a medical record book for each of our children. When one is ill we keep a record of his symptoms, temperature, diet, and other pertinent factors. This enables us to answer the doctor's questions accurately, and to make not of his comments and prescriptions. The book goes along when the children have their medical examinations.

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Plan for your child's next party by taking snapshots of the children you will invite. Mount these on place cards attached to the party candy-cups. These take-home favours will please the small guests and surprise their mothers.

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Make useful name tapes by typing or writing with permanent ink on white hot-iron tape, such as Bondex. A 10-cent 30-inch package of tape will make about five dozen labels if the name is short enough to write across the 1½-inch width. Labels can be ironed on garments.

Working To Music

That "Working To Music" is a modern idea was a statement put forward recently, when, upon a screen, employees were shown performing their tasks to the accompaniment of radios provided by the management. But, to those who have lived in Africa, this statement is a mistake, writes Lester Arthur in The Christian Science Monitor.

In the streets of any African city, on any working day, the strains of musical voices can be heard from the most unexpected places; for, to the African native, "working to music" is as old as are all the other customs which have come down to him through the ages, whose origins are lost in the dim avenues of the past.

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True, the modern idea is machine-made music, while that of the African is of his own making—weird and strange as is all native music—but, on every occasion where manual work is to be accomplished, the strains of native voices blended in perfect harmony accompanies it as surely as night follows day.

The road-menders sing as they ply their picks and shovels—the men who cut the long grass which in this luscious soil grows so quickly on each side if the roads — it is all one which job they are on; they just "work to music."

For this is the custom of the native in his home, and those who have migrated to the cities have brought the custom with them—bringing with it into the hot arid streets a breath of cool green veld, of deep hillkopjes, and lonely kraals set on blue hillsides. For each song of the native people has its own particular meaning, typifying some event of their daily lives.

One song will tell of dawn breaking over the purple kopjes, of fire smoke rising from small mushroom-shaped huts as the sun comes up. Of little brown picannins playing in the sunshine, of wives who cook the mealie-meal in the three-legged iron pots.

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The African natives have evolved their own idea of "working to music"; and the procedure is always the same, be it work with pick or shovel or with any other implement.

Should they be breaking up a road, the fall of pick and shovel is as regularly timed as the tramp of marching feet.

The first note of a chant is sounded by a leader—the melody is taken up by the gang as they raise their picks—and, on the last note of the chant, the picks come down in perfect unison.

Should the dragging of a heavy load be their objective, the same procedure is adopted; each man waits for the note of the leader, then the concerted rhythm, and the final note for the "pull."

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If the passer-by has ears to hear, he will realize that the native singers suit their songs to the moods of nature.

In the gold of an African sunlit day, the songs are gay and happy. They tell of dances and feasting, of weddings and rejoicings, and of those daily events which come to all, whatever their race or color.

On days when the skies are gray and lowering, when the mist hides the gold and veils the blue of an African day, their songs contain in their chanting all the sadness of the African people. They speak of their sorrow when the crops have failed and when want and hunger stalk abroad among their people; of the days when the locusts came and left the smiling green lands bare and brown. In these low sad chants are the rain and the mists that settle in the hearts of the African natives when the sunlight is hidden, for they are a sun-loving people.

But, rain or shine, gray skies or blue, the gangs of African natives "work to music." For this idea is not a modern one, but as old as the deep blue hills which are the heritage of the African people.

"A Way of Life"

The day of a man's salvation is now;—the life of the present, of today, lived earnestly, intently without a forward-looking thought, is the only insurance for the future . . . Begin the day with Christ, and His prayer . . . you need no other. Creedless, with it you have relligion; creed-stuffed it will leaven any theological dough in which you stick. The quiet life in daytight compartments will help you to bear your own and other's burdens with a light heart . . . Life is a straight plain business, but the way is clear, blazed for you by generations of strong men, into whose labours you enter and whose ideals must be your inspiration."

—From an address delivered by Sir William Osler to the undergraduates of Yale University, 1913.

Three Of A Kind—Gipsy Lad's Missy, a registered jersey cow, displays motherly concern as Jack Shepherd looks over her one-day-old triplets. The birth of triplets is a rarity in bovine circles, and Missy's feeling justifiably proud.

Diving Device Will Explore The Deep—A weird-looking apparatus, the "Benthoscope," is hauled out of the water after a test run on the harbor bottom. Inventor of the device, Dr. Otis Barton plans to probe the mysteries of the deep in the diving bell, which is towed along the ocean floor on three drum-like wheels. Barton hopes to reach depth of 300 fathoms (1800 ft.).

JITTER

By Arthur Pointer