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Pasture Notes.

(BY E. BRUCE LEVY.)

ASSISTANT BIOLOGIST, WERAROA
STATE FARM.

GRASSING OF FERN LANDS.

It is the endeavour of the farmers of New Zealand to grass almost every conceivable class of country from the limits of the sea-shore to the line of perpetual snow, the waste lands, the mountain sides, the steep hillsides, the level plains, the rocky river deposits, the fertile alluvial greywacke, the swampy places, the pakihi and the arid desert, the stiffish clay and the friable loams, the volcanic papa and the limestone.

Roughly there are three distinct seasons when an attempt is made to establish pasture plants:—

- 1.—In the early spring, along with cereals, or in a spring cultivation of winter sown cereals;
- 2.—Along with rape in November.
- 3.—With or without a winter cereal in the autumn;

and there is fourthly nature herself at work covering the land surface with vegetation most adapted to the soil and climatic conditions.

Again, there are roughly speaking four methods of applying the seed to the land:

- a.—Broadcasting on prepared surface;
- b.—Drilling on prepared surface;
- a.—Broadcasting on prepared surface; top-dressing on already existing pasture that has thinned out or is too wet to burn or too rough to plough;
- d.—More or less natural seeding by wind, by animals in their wool, by tramping, and by their dung.

Whether on ploughed land or on unploughed land the attempt is made to grass all types mainly with European grasses and clovers irrespective of whether or not the soil and climatic conditions are such as to be favourable or otherwise to the germination and establishment of that seed. A great deal of consideration, of course, is given to those species likely to take and hold, but there is the great danger of farmers attempting to grass with grasses and just a little too poor for those particular species. Consequently, right from the start those plants are at a disadvantage, while the poorer elements, unless killed outright, are stimulated by the act of burning or by the ploughing and working—cover for instance. In America the tendency is to the establishment of pure species of pasture plants, while in Europe—as in New Zealand—the tendency is to establish a mixture of pasture plants—pure sowings being rarely carried out.

Consideration given to Mixtures for
Varying Classes of Country:

The species that one will use on one's own respective land is often quite a difficult point to settle. In sowing down of mixed pastures on really good first-class land it is expected that some at least of each species sown will survive (excluding the purely temporary elements) and will form part and portion of the herbage of the pasture. In temporary pasture establishment only those species which are rapid at establishment and growth are included. In short rotation pastures, where the running out of the pasture is accepted by the farmer as an unavoidable defect of the district, only those species which will yield well for two or three years are used, the pasture being broken up when the desired constituent has been displaced by quite worthless grasses and clovers, or perhaps killed out by grub, or given place to bare ground; and again in certain permanent pastures, necessarily so in virtue of the steepness of the country or logged state. On such country one has to so regulate his seeding that not only is rapid feed provided, but also that when those temporary elements are run out the transition into permanent grass is so guided that undesirable successions do not come in, such as tannin, bid-artid, bracken, scrub, fuchsia, wineberry, and blackberry. In other words the farmer must consider:—

- 1.—Not only the temporary elements, and
- 2.—The semi-permanent elements, but also
- 3.—Those grasses which will remain quite permanent, although perhaps of a lower feeding value than the earlier constituents.

Permanent and Temporary Elements:

At the present time it is the custom to sow down pasture with grasses and clovers, some of which will act as temporary elements, that will give rapid feed soon after sowing; and others that are supposed

to come on later to provide the permanent elements; or in other words two one sowing is meant to serve a dual purpose:—

- 1.—To secure firstly a temporary pasture followed by
- 2.—A permanent one after the temporary elements have been eaten out,

and the practice goes so far as to include, over and above the temporary elements, such a grain as oats and barley, but the culminating slight to the principles of pasture establishment is not only including the cereal but allowing it to run to a cereal crop, which is harvested for grain or chaff; and this not always in a moist climate but even in a climate where the moisture is scanty, and at any time not even sufficient for the successful establishment of the grass. It is true that the grass, or some of it at least, lingers on and finally comes away in the subsequent spring, but the principle is bad and the method cheap and nasty. Not only should the cereal cover be abandoned for permanent pasture work, but in the establishment of permanent pastures the strictly temporary elements should be reduced if not cut out altogether, particularly so Italian Rye. Italian Rye has a most depressing effect on the establishment of the permanent elements, especially Cocksfoot, Crested Dogtail, and White Clover. Whether or not the depressing effect is due to some toxic principle exuded by the plant, or whether it is a simple crowding out, has not yet been determined, but the depressing effect is marked and sure. And even when a small quantity is included on no consideration should it be allowed to get away. The effect it has on White Clover is to draw it up off the ground so that the natural stolon development of the clover cannot take place and when this is the case the clover may go out in a single season. It seems to me that by far the most satisfactory method to adopt is not to aim at a dual purpose sowing, but in one paddock to sow a purely temporary pasture and in the other the permanent pasture from which practically all the temporary elements have been excluded.

DEAD MULE GULLY.

THE PLATOON GOES IN.

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They had marched from one sector, reputed "quiet" in the technical language of the Army (but not without its weekly toll of death, and always with its daily and nightly stress of labour with pick and shovel), and now, after this "rest," they were on their way to another sector once more to "hold the line."

They had marched through Ouderdonk, through the wreckage of that remnant of Dickebusch which still served as billets for a labour company and for a unit of Tommy transport, and so they came to that jumping-off place known as "Railway Dugouts."

Railway Dugouts lay (and possibly still does) amidst all the noisomeness, the incredible desolation, of what was once Zillebeke, once a setting for a Watteau pastoral, a pleasant land of little chateaux, of artificial lakes, of formal gardens and straight-stemmed, decorative trees. But no New Zealand soldiers had seen it so—they could not imagine that such things had been, for as they saw the place it was nothing but a wilderness, ruined, dishonoured, spoiled.

There was not even brick or stone to mark the place where the gay little chateaux had been; it seemed they must have been engulfed in that Sargasso of mud which stretched in unrelieved hideousness wherever one looked. The trees were shattered stumps, or they stretched splintered arms in mute appeal to Heaven for the beauty of which they were once a part. The lakes and streams had been blown out of all existence by the three years' deluge of shells which had made the name of this region a word of horror to the soldier; where they had been were spreading areas of filthy shallows, burdened with corruption and sinister with evil, as was all that landscape, scattered with rusty iron ammunition boxes, broken guns, smashed waggons; pitted with shell craters, littered with dead horses and the torn equipment of dead men.

IN THE DUGOUTS.

The dugouts—long corridors of them, fitted with tiers of narrow bunks made of timber and wire-netting—had been dug beneath the high embankment which had once carried express trains across this low country. Many soldiers, of all nationalities, had occupied these dugouts in passing, and they were fetid, rat-riddled, dark, and crawling with vermin, but they

were safety, and therefore a place to be thankful for.

Inside, the men lay on the broken bunks for there was no room to sit, in a gloom that was only emphasized by the pin-points of light from a few guttering candle-ends. They had eaten their evening meal of stew and bread, and now, with their valises for pillows, their great-coats for covering, and their equipment and rifles beside them, they were only waiting for the darkness when they would march to Hooze Crater, and then, once more, make their way to those too-familiar heights by way of the grim track which was called Dead Mule Gully.

Only by night, or on days when rain made observation impossible, was it advisable to take troops that way; and even then there was no safety for the enemy's gunners knew well where Hooze Crater and Dead Mule Gully lay, and on the darkest night or the dreariest day they would send over an unexpected burst of shells, knowing that such times were favourable for the movement of troops. The men, who had been there before, took what rest they could before the hazardous tramp commenced, and tried not to think of what the coming days held for them, for, as Job has said: "The morning is to them even as the shadow of death. For they know the terrors of the shadow of death."

THE DREARY MARCH.

A corporal came groping and stumbling through the gloom: "No. 3 platoon, get ready."

The men crawled from their bunks, carefully pocketing their precious bits of candle, and dragged their gear outside, where, though the hour was not much past 5 o'clock, the grey mist of a Flanders winter evening was already enshrouding the place, and a dark sky was lowering with passage of rain. They buttoned their greatcoats, wriggled themselves into their equipment, and took up their burdens; for some carried shovels, and some picks, and others were weighted with sandbags full of rations.

Two by two, in sections of ten, with wide intervals between, the company moved off. Motives of economy, in men, made it advisable to march in file, in little bunches, for if a shell should land upon the road there would be fewer killed and maimed than if the men were marching in the solidity of platoons.

Along the cobbled road, its boulder-like blocks upheaved by the traffic of countless transport waggons, or by shell-fire, they tramped stolidly and silently through the gathering dark, now and again passing some fragment of ruin, looming ghostly through the mist, or a broken motor lorry thrust hurriedly from the highway into the stinking ditch.

From the cobbled road they branched on to a track, part duck-boards, part mud, which led between holes, and small, decaying dugouts on the flat—though occasionally a faint light glowing through a crevice would show that not all the dilapidated caves were untenanted. At last they reached that road of plants, built hurriedly in the immediate wake of battle over wreckage and decay, and there they formed once more into groups. Though they strove to preserve the proper intervals, the spaces would keep shortening, despite urgent demands, passed along the line, to "shorten step in the rear," and vehement questions from sergeants as to what this and that section meant by crowding up, or the bitter complaint of some burdened man lagging in the rear: "Go on; double, why don't yer? Are y' go dead anxious to get there?"

THE SOMBRE ROAD.

They were anxious to get there, for even a trench is preferable to a filthy road which at any moment may be swept by a burst of heavy shells. A halt was called, and the men rested awhile beside a mound of great howitzer shells, salvaged along with much other useful debris from the quagmire over which the plank road ran like a bridge, but though it was a needed rest, yet the men were impatient to get on.

Already the threatened rain was falling, making the darkness even more eerie with forboding and anxiety. They could not see, but they knew that for miles along, on either side, the road was piled with wrecked waggons, tossed aside to clear the way for the living, and marking the places where horses and men had died in the enveloping mud. They knew that around them lay desolation—splintered trees dotting a bogland of shell craters which flowed in icy water one to another as far as eyes could reach, a wilderness in which, half-submerged were the crumpled iron shelters of artillerymen, overturned limbers, and abandoned guns, for they were nearing the gigantic mine-hole of Hooze Crater.

Another half an hour of tramping through the slush, over the tilting, squirting planks, and Hooze Crater was reached, and another halt was called before

the next, and worse, stage up Dead Mule Gully.

In single file, headed by the captain and a guide, the first section of the first platoon started the ascent of that place of pitfalls, but so slow, so toilsome was the way in the absolute blackness of that night of rain, that it was long after the first platoon had moved off that the last received the order to move.

DEAD MULE GULLY.

This was Dead Mule Gully, a shell-shattered, sodden place, up the gamut sides of which a tortuous track wound, and where, in the drenched daylight (for it seemed always to rain here) the pitiful relics that had given the track its name were only too obvious. They lay, bloated and rigid, in all conceivable attitudes, half-buried in mud or stranded upon some clay-bank, surrounded by water discoloured with their blood—dozens of mules, still fast in the slime which held them when they had been shot to pieces, screaming in terror, their heavily-laden panniers dragging them deeper and deeper into the slough.

Even at night the mules made their presence apparent, and the track was bad enough without their unpleasant reminder of mortality. The duck-boards—what was left of them—were broken, uncertain and covered thickly with greasy mud, on which hob-nailed boots could get no secure footing. The cold rain mingled with the perspiration which trickled from beneath the men's steel helmets as they staggered upwards under their heavy burdens, treading tentatively, straining onwards with hard-drawn breaths. Now and again a man fell, and had to be helped to his feet, and sometimes a man, sleeping not delicately enough, would have to be dragged by force from the clay into which he had sunk.

THE PRECARIOUS TRACK.

Here where there had been duck-boards, was a huge shell-hole, here a single duck-board lay precariously over another water-filled crater. Low voices passed the word from man to man: "Broken duckboard here." "Shell-hole here." "Keep to the left—shell-hole." "Look out for wire." So, very slowly, with effort, in a black drizzle, through which we could not see, the climb was made, but not without bitter mutterings and revilement. Close at hand a weary Lewis-gun corporal overbalanced and fell with a splash into a deep shell-hole, and again the long line halted as his mates dragged the shivering man out; and even then he must plunge in again to rescue his precious weapon from the mud.

At last, low voices were heard speaking guardedly out of the darkness in a broad North of England accent.

"How many more miles have we got to go to get to this 'possie' of yours?" asked the exasperated voice of a Digger. "Not fur, choom, not fur—about 300 yards after ye pass the old tank on the right, an' coomin' up again the pillbox." A few gas-shells wobbled overhead, making that queer, gobbling sound which identified them, but they burst far to the right, with a "plop!" and the night was too wet for their exhalations to spread far enough to affect any one of the platoon.

TAKING OVER.

The intermittent duck-boards gave place to a sort of track of slippery clay, but it was still upwards, though the lungs were sore, and rifle and equipment seemed so heavy that one swayed with the weight. . . . And then, right by the track, there was the derelict tank, squatting half-buried in the mud, its snout lifted impotently to the sky, and ahead, a darker blur upon the darkness, loomed the squat bulk of the pillbox. The last platoon had gained the top, and beyond, in the hollow, there sprouted the blossoming flares which marked the enemy's trenches.

A guide, speaking the same thick Northern dialect, came forward. Another two hundred yards across a slippery track winding amidst holes, along a paved road, and on which, dimly discerned in the sickly, fading light of the flares, there still sprawled some enemy dead (which no one had found time, or sufficient reason, to bury), and a trench was reached.

There was a challenge and a password, and the sergeants, relieving and relieved, consulted. The word was given, and the men dropped into the trench, flinging off their burdens with as much alacrity as the Tommies shouldered theirs and scrambled out on to the track. They moved off without any delay, and the men who did not immediately have to mount guard, pulled their ground sheets about their heads, and huddled in groups in the most sheltered corners of a sloppy, newly-dug trench, there to doze as best they could and to await what revelation the dawn would bring of this, their latest home.

The longest warship constructed and soon to go into commission is the British battle-cruiser Hood, which is 900ft long and 42,000 tons full-load displacement.