KORERO

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KORERO

IN THIS ISSUE

Contributions to Korero

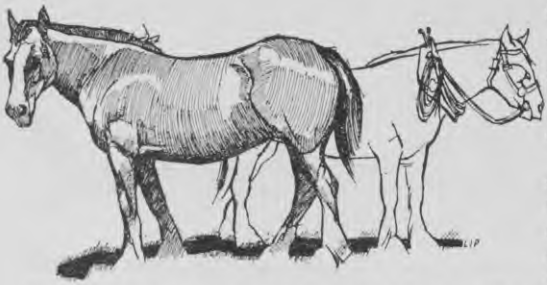
You are reminded that a maximum sum of £3, payable in canteen orders where there are canteens under New Zealand control and in cash where there are not, will be divided among contributors in each issue. It is necessary, therefore, that all contributors should send us number, name, and full address. Remember, too, that articles are not the only contributions we are looking for. We would like to see also short paragraphs, black and white drawings, and verse. There is space, too, for your comments and inquiries, provided you keep them short. The address is: "D.A.E.W.S., Army H.Q., Wellington." Mark your envelopes *Korero* in the corner.

TO COUNTERACT enemy practice of laying waste to the countryside, destroying crops, and either ruining or removing all seed able to be seized, seed shipments have followed allied invasion armies in all theatres of war. Quantities of seed, for instance, landed in North Africa were moved to Sicily, and, as progress was made, into Italy and gradually northward; thirty days after American troops first established themselves in the Solomons vegetable gardens had been sown—the men had begun to grow their own food. On all fronts, too, large quantities of seed for quick-growing crops have been needed for camouflage.

Much of the world's seed-supply has been blocked by war—beet-seed from Germany, cabbage-seed from Denmark, and Holland, cauliflower-seed from Holland, onion-seed from the Canary Islands, clover-seed from France and Hungary. In the early days of the war the position was made worse as the more important seed crops take two years to produce. Countries of the United Nations, where possible, had to expand seed-production hurriedly; stocks were pooled, and distributed where most needed—mostly to Great Britain and to Russia. Such cargoes have saved much shipping space; it is estimated that 1lb. of seed (such as cabbage-seed) is the equivalent of 6,000 lb. of food.

To meet civilian needs, to supply all home and overseas forces stationed in New Zealand, to send large quantities of fresh, green vegetables to overseas troops in the Pacific, and to keep local dehydration plants working to capacity, this country had to increase extensively the acreage of ground under vegetable cultivation. "Victory" gardens, the establishment of Government-controlled gardens, and closer co-operation among market-gardeners helped to meet the problem; in 1944 more than 26,000 acres were growing vegetables. Demand for seeds, of course, rose proportionately, but in spite of the use of greatly increased quantities New Zealand was still able to export—to Australia, the United Kingdom, and the United States—nearly 11,000,000 lb. (mostly pea-seed, but other vegetable varieties as well).

Moa Seed Farm, a few miles from Roxburgh, Otago Central, one of the largest properties producing vegetable and flower seeds in New Zealand, harvests every year between four and five tons of parsnip, beetroot, onion, and carrot seeds, as well as some garden peas and large quantities of sweet-pea seeds and tulip bulbs. Here in the summer are to be seen fields leaping with colour; rows on rows, their distance measuring into miles, of sweet peas high into the air, altogether between one hundred and fifty and two hundred varieties; blocks planted with parsnips standing up to 8 ft. high and looking, in their apparent abandon, as unlike parsnips as parsnips ever could look. Everywhere is colour—massed and lavish, but not garish. Two land girls (in wide hats) work there, and for the harvesting, girl students from the university. There are two draught horses, fine animals, drays, and quarried stone buildings, open gates and dusty paths and drives, farm implements are under the trees, round them pine-needles, blue-gum nuts, and green grass. Scent from the wild acres mixes with the smell (hospital-clean) of Australian gums. Over all vibrates that Otago Central sunshine; behind rise the hills.



In 1917 the Government in office began the Moa Seed Farm for repatriated soldiers; later it was worked under Government subsidy by five men; and in 1929 about 35 acres of the original, larger holding were taken over commercially, by one of the two present partners. The work, nearly all of which is by hand, is hard and exacting, the hours long.

Mother, or stud, seed plants have to be continually inspected, any not up to standard (the rogues) ruthlessly removed to keep the strain pure; and, in addition, there are unending field trials to improve quality. No root crops are allowed to go to seed until the second year; the first season they are examined carefully, those not perfect in colour, shape, and type removed, the remainder planted again the next season. (Those which do seed the first year are called bolters. It seems that a seed farm, with its studs, rogues, and bolters, has some affinity with horse-raising.)

Rotation of crops from year to year is important not only so that the good taken from the soil by different crops will be renewed, but also to prevent the rearing of self-sown plants among those grown from selected seed. Because of cross-pollination (by wind and insects), which would ruin the purity of individual strains, only one variety of each vegetable is grown—if more were to be handled a much larger area of ground than 35 acres would have to be available to enable the different types to be too far apart for the pollen to be carried.

As well as the usual popular sweet-pea types, many winter varieties are grown, most of the seed of which is exported to Australia, where the varieties favoured in New Zealand do not flourish because of the different climate. Sweet-pea seeds are sold usually in packets of ten for 6d. and there are between five thousand and nine thousand seeds to a pound. Great care must be taken to make sure the more than one hundred and fifty varieties do not become mixed or mistaken—even to the two partners they are as alike as peas in a pod. Bags, named and numbered, are used to keep the many varieties, which ripen at different times, separate.

Surprisingly, in a district which depends for its growth on irrigation as much as it does on its rainfall, no artificial watering is done at the Moa Seed Farm. In its place is regular and constant hand and tractor hoeing, which, the partners say, is much more effective.

Seed-harvesting is done mostly by hand-threshing, although there are usually two or three hand-pickings first to gather the earlier ripening seed. For hand threshing the plants are thrown on to horse-and-tractor-drawn sledges and vigorously hit with flails. Seed which collects in the bottom of the sledges is later sieved to remove leaves and other matter; and later a blower separates the unformed and kernel-less seeds which are lighter and blow away, leaving the seed pure and clean.

Both flowers and seeds are constantly being improved by seed-growers all over the world. One recent improvement,

according to an article in *Life* is a marigold without a smell. In 1933, after years of search for a marigold whose foliage did not have the strong smell that so many people dislike, a seed-grower in the United States received some seeds from a missionary in China who said they would produce odourless marigolds. Sure enough they did, but their flowers were small and scraggly—all except one freak which had a pretty bloom. If odourless marigolds could produce a pretty freak, the grower decided, then pretty, though smelly, marigolds might produce an odourless freak. Next year he planted 30 acres of marigolds, set his staff to smelling each plant. After five weeks of sniffing, one weary nose found an odourless marigold. Crossing this with the Chinese odourless, the grower combined the advantages of the two species and brought off a big seed coup. Perhaps the two partners at the Moa Seed Farm could get into touch with this missionary in China about onions.

Teleprinter in New Zealand Newspaper Office

A Creed teleprinter, the first in either a metropolitan or a provincial newspaper office in New Zealand, began operation recently in the office of the *Northern Advocate*, Whangarei. Teleprinters—machines used for the receiving of telegrams and cablegrams—are common in all the large newspaper offices overseas, but newspapers in New Zealand—with the exception now of the *Northern Advocate*—have to rely on pneumatic tubes from the post-offices or runner boys for the delivery of all press messages. The installation of a teleprinter means that messages are available for "subbing" the minute they come off the machines, eliminating the unavoidable delay in delivery from the post-office. Sub-editors are able to read the news as it comes in an endless ribbon from the machine, and editions can be held to the last minute for important messages. This saving of time is important to evening newspapers particularly.

tales of snails

A KORERO Report

NEW ZEALAND is a strange land with a strange fauna. The curious rarity of animals there is, of course, largely due to its being for ages cut off from the rest of the living world.

When I began to discover the sunny forests and bush of the narrow North Auckland peninsula I found a side interest in chasing a rare and bonny snail quite restricted to a small region in this northern part of little New Zealand. Chasing? Yes, amused pursuit of a slow snail; one so large and interesting as to collect many names—no bad ones. The Maoris call it *pupurangi*, snail of the skies—I suppose because the shell is sky-blue inside, or because they found it up in trees. The shell is strikingly large for a land snail, the average about two and a half inches at its widest, two inches its narrow diameter, one and a quarter inches high; but big ones can be nearly four inches.

On hatching, the shells are nut brown. They are flat-topped and only grow green with age. The snails build their shells, grow them as a house for the body. Most snails can be removed from their shells. Fanciers used to transplant them from shell to shell, and each new inmate would add a bit of its own style to its new and different dwelling. So you could get artificially banded and patchy-coloured shells. But a humble inmate of a slum dwelling forcibly put into a grand and beautiful home could only add slum walls.

It's hard to get the shell off without killing the proprietor, unless by carefully cutting away round the edges. You need to know what this snail's enemy, a native woodhen, has learnt that it's no good pecking the shell—it's so hard and glassy surfaced. He wisely nibbles round the edges, pecking it gradually away. At last, there! What a feast to the woodhen's eye, to the human pecker what a view! . . . the inside works working under the surface, the two-chambered heart beating. But, alas, alive it is very difficult to find out anything about the snail at all, so sensitive is it to touch and whatnot. Laborious detailed anatomy is necessary, and gives drawings and microscope plates of beautiful, varied unsymmetrical forms and figures — nerves, vessels, organs, and geometric details of shell structure. Asked how you got all this from a mere snail, you can truthfully answer, "I hacked him in pieces sma'."

I used to get into their out-of-the-way limestone and kauri forest world by bike or "snailways"—the Government system—and win a reputation among the "backblock" farmers for premature senile decay, wandering about in the bush on the hills in old clothes, crawling on my stomach after these so-called Gastropods or "stomach footed" things. Lonely farmers were obliging when they understood that you wanted to follow pigmy monsters and had to walk on your stomach nosing among moulds and roots. I met a very hospitable and sympathetic farmer, proud bearer of the name and blood of the famous eighteenth century French naturalist, Buffon.

A. P. Herbert pities the snail crawling about on its "tummy." This underside is not really the tummy; it and other inside works are up in the spiral part. It's its foot. This snail's foot is about 5 in. long, wide and leaf-like. Glands in

it produce a constant flow of mucous, a slime track on which its body and foot walks or undulates by muscular waves from back to front. An average snail's speed may be funny. It's not zero, but about one mile in sixteen days, fourteen hours—some one finds. Its soft foot lies always on a greased floor, protected from the rough ground. Though we cannot expect snails to leap off the ground, they *can* lift up their heads, and a few can burrow down a foot or two during droughts or winter.

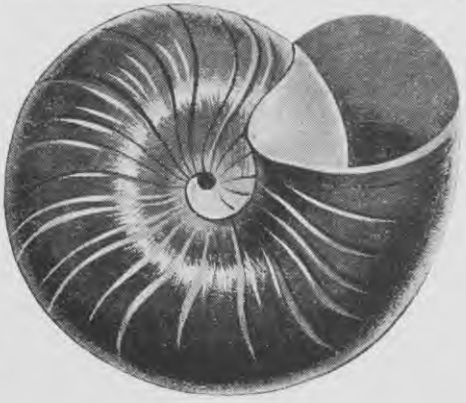
It is only in rare, abnormal cases that humans are hermaphroditic, whereas most snails are naturally. Each individual snail has the reproductive apparatus of both sexes, both sexes combined in one ; paring snails fertilize each other.

Well, about the New Zealand snail. Snails lay eggs like birds, but this snail's eggs are very large in proportion to the parent's size. I've seen a snail from an isolated island off New Zealand, its one egg about the size of a thrush's ; a specially adapted reproductive system, not for the mass production of marine snails, but for one superb individual product, like that of several tropical giants. The snail I'm describing lays very interesting eggs. I've collected them after much poring about, peeping under fallen clumps of parasitical tree-plants, in well-protected, mouldy, damp, shady places as at the base of tree-trunks or tall palms. I've never found them in the open, unprotected. Others have discovered them up trees among the dense grassy tree-plants I've just mentioned, like birds' nests ; or like the Solomon Islands arboreal snails, and Philippine Islands species supposed to live near the tops of tropical forests.

You may find as many as eighteen of these eggs neatly packed together ; they are white, oval, about a quarter-inch broad, hatching out fairly easily at ordinary temperatures, in moist conditions taking six weeks to two months. The wee snail comes out, not by the shell's being pecked through, but perhaps by the mere process of expansion, all the time borrowing lime material from the egg-shell itself (which was originally borrowed from the limestone habitat) and building it into its own baby shell. The egg-shell is weakened and can then be readily burst. Did you ever know such economical economists ?

Now, it's unparental and illegal, I know, but no parental care is exercised by either of the twin-sexed parents except that possibly moulds and similar food matter are chosen for the nest as food for the young.

From ancient Tarquinium to Whipsnade snails have been farmed for epicures. My interest isn't epicurean. This New Zealand snail is rare in being definitely carnivorous. You have only one or two carnivorous snails here, all the rest are confirmed vegetarians. I wish I could show you its teeth under the microscope ; they'd horrify you. Instead of molar teeth on a flat base, grinding leaves against a horny upper jaw, like most snails, this snail has real canine teeth, sharp pointed, backward-crooked cusps placed all round the mouth walls. Flesh is rubbed and scraped between two-toothed sides, not thirty or forty, but ten thousand. It takes a mass of muscles to work those rows of teeth. The common snail has about fifteen hundred herbivorous teeth ; the great black slug boasts thirty thousand canine teeth like our giant's, and seems to be proportionally carnivorous and omnivorous. I've kept the giant snails among lettuce and leaves, but, hungry or not, they didn't touch it. Most snails, being herbivorous, would be happy. So we see some snails have teeth like dogs and cats, others like cows—the great majority.



I didn't believe in the " whistling snail " rumour from Ceylon and Hawaii. Still, I imagined that if I were an amplifier—or better an elf—I might hear some whistling, scraping, whirring sound as one slowly gnashed and hashed and ground and tore to shreds its captured worm.

Like the shell, a snail's teeth are secreted throughout life. Perhaps twenty sets in a lifetime ! Shells can be repaired, even lost body parts can be regrown within limits.

A temperature of 25° Centigrade kills the New Zealand one, 45° the common English snail ; the latter a much more adaptable creature altogether.

Even a cold snail has a heart, a simple one with sluggish beat that stops almost completely during winter hibernation. But if heated up, any snail's heart will beat quicker.

Snails are photo-negative or light avoiding, and come out to feed at night, remaining hidden and inactive by day unless disturbed or livened up by rain. So I kept one or two of my carnivorous snails by my bed in glass jars, now and then getting up in the night to watch them, using a red light-shade, not to upset them. I kept them starved for a couple of weeks to ensure their being active. (No hardship when you know that some can live three or four years without food or water.)

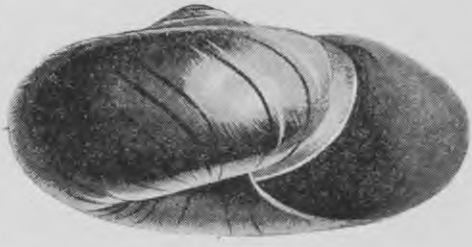
I saw them walking leisurely about the jars, into which I dropped a worm now and then. What then ? Slowly and deliberately they would protrude their " jaw " or " lips," placing them over the worm, which made no violent struggle. The rows and rows of teeth grip it, and by a ratchet-like backward and forward motion slowly draw the worm in, protesting or unprotesting. I'd grab hold of the worm and pull gently, but the snail pulled as hard, and the prey couldn't release itself or be released from those thousands of canine hooked teeth. If annoyed, the snail would retract into its shell with its rightful dinner.

Now, one authority held that the remarkable leaf-like foot was a prehensile organ for capturing worms by crawling over them, holding them down in the foot holds till dead. But you could occasionally observe worms crawl of their own initiative into the snail's big shell, while it was retracted and inactive. A few days later, fæces would be thrown out—no worm ! But you can't trust every observation, though apparently snail had eaten worm while retracted.

Snails are muscular creatures. Trainers who turn them into horses can get them to pull up to fifty times their weight. So there might be a new unit of force—snail power.

The two pairs of sensitive tentacles are each regulated by a retractor muscle. Watch, and you'll see how slow snails are to poke out their tentacles (probably by pumping them up with blood), how quick to withdraw them. The upper pair bear eyes, very short-sighted ones. But they move so slowly, young or old, they're not likely to bump into anything.

However primitive to us, each organ is well adapted to the needs of the total organism. Eyes which merely react to light, but tell them when pleasant night has come, when safe holes are reached. Scientists believe snails, like all lower



animals, are neither optimistic nor pessimistic, but entirely tropistic, their movements " forced movements." They don't think. They just react instinctively to each stimulus as they must react. So when an experimenter gets a snail to improve its time for running a simple maze by as much as from two thousand seconds to two hundred, one ventures to believe it would require a host of such tests to half convince the scientist that a snail could either learn or think in any sense of those words.

If you searched in the bush for those giant snails you might be disappointed seeing none about, till you lifted up a mass of palm fronds under a delicate palm tree. There ! Dozens of them. If only some god's eye would let us see all that goes on in these sluggish grey-green life forms at home in this half-decayed pile fallen from the slender drooping palm grace above ; would tell us why dull eyes, deaf ears, three humble nerve ganglia, odour-sensing tentacles, should choose this particular blend of conditions. We can only see that darkness, coolness, dampness, shelter are essentials. The snails' intimate reactions with each of these, with each other, and with the complex life of decaying matter are unknown.

Some say snails will respond to a particular creaking on glass if the pitch is right. We all know how sensitive snails are to vibrations, also that, though seemingly blind and halt, nearer the inanimate than the live, they are guided by a trusty sense of smell. Nature draws no invidious comparisons between the snail's superb sluggishness and the sparrow's lightning turns. Though it can't walk, run, or fly,

the snail group has colonized practically every environment from the abyss to the tree-tops and ten thousand feet up mountains. Desert drought is the greatest barrier to the land species.

The New Zealand snail's nearest relatives are in New Caledonia and Queensland. And this fact confirms the geologist's map of New Zealand joined to New Caledonia some fifty million years ago when this genus first appeared. So snails are present indicators of ancient geography, just as they are sometimes good barometers. When in New Zealand in a dry summer you see those snails down at a stream side, in damp bush, and in a wet period in drier places, you see their bias towards humid conditions, their incomplete emancipation from their remotely ancient home, the sea, and from the vast majority of their snail relatives—still marine or fresh water.

That giant snail, after all, like others, lives only four or five years. The snail group is hundreds of millions of years old.

Illustrations on pages 7, 8, and 9 are three views of one *pupurangi* shell. The illustration at the top of page 8 is of a typical giant snail.

AIR POWER
An evaluation

By J. M. SPAIGHT, in the *Fortnightly*, March, 1945

THE STOCK of air power in the market of popular estimation has fallen a little since the heavy fighting began on land. Of that there is no doubt, but to conclude from the fall that, objectively, there has been a " debunking " of air power, or that it has been shown to be nothing but a fraud, would be utterly unwarranted. It was, is, and will continue to be a factor of the first importance in the process of the achieving of victory. What has happened is that many people expected it to yield quick results, which, in point of fact, were never possible. The enthusiasts who backed and boosted air power were not always its best friends.

A sign of the changed view was to be seen in a recent message from a British newspaper correspondent in New York. " It is now accepted by all the top Allied leaders," he stated, " that the experiment of trying to win this war by bombing can be written down as a failure. Whatever has happened to Major Seversky ? "

No doubt Major Seversky, Mr. W. B. Ziff, and the others who did expect victory to be secured by air action alone would reply that the conditions which they postulated were never in fact fulfilled. They assumed the creation of air forces and the adoption of an air strategy which the Allies were not, it is clear, prepared to create and to adopt.

That, too, would be the answer to the critics of the distinguished chief of our own Bomber Command if he were now asked to comment on a statement of his made in the spring of 1942. " If I could send 20,000 bombers to Germany tonight," he said, " Germany would not be in the war to-morrow."

We know that that kind of force, at least, has not been employed ; in fact, it could in no circumstances have been employed. Even Sir Arthur Harris's other and more moderate programme, of 1,000-bomber raids regularly maintained, was not and could not be realized. There were always too many conflicting calls on Bomber Command's resources to allow the assault on the industrial Reich to be maintained on the peak load.

Indeed we have Mr. Churchill's word for it that the idea of knocking Germany or Italy out of the war by bombing alone was not one beyond the bounds of possibility. " Opinion is divided," he told the American Congress on May 19, 1942, " as to whether the use of air power could by itself bring about a collapse in Germany or Italy. Well, there is certainly no harm in trying." It was evident that he himself doubted whether the experiment would result in a speedy decision, for he went on to explain the purpose of the Anglo-American air offensive as the smashing of Germany's war industry, the destruction of the centres engaged in it, and the dispersal of the munitions population. That is obviously not a programme which could be completed in a brief time.

No Government expected the war to be decided by air action alone. The proof of that fact is that every Government built up a great army as its main force for war. If there had been any real prospect that an air force would have sufficed, such a force would have been given priority in the preparations for war.

It was not given priority. There is no evidence that it was favoured at the expense of the other Services.

Our own Government's attitude to the question was made clear by a Minister, Lord Beaverbrook, when the war had been in progress for over two years. " Aircraft cannot win the battle alone," he told the Clydeside shop stewards on November 30, 1941. " The tank might. The tank and the aircraft together is the form in which we want to fight this battle-front." Lord Beaverbrook was no disparager of the air arm ; he had been Minister of Aircraft Production ; and his words were therefore the more significant. They might equally have been applied to Germany's plan for winning the war. Her instrument of victory was armour on the ground plus the Stuka in the air.

It is true that Germany had a powerful air force in 1939, but it was the wrong kind of air force for strategic use ; and only by such use of it could it win the war alone. For Germany the air weapon was always mobile artillery—as it is, indeed, for military writers in other countries. Captain Cyril Falls, for instance, in his book " Ordeal by Battle," states that " the offensive role of aircraft consists, as to about 80 per cent., in acting as air-borne artillery," the other 20 per cent. being observation, &c. The Germans have always dreaded air power—when used against themselves. That was first, why Hitler made such efforts in 1935-36 to have bombing limited by international agreement to the battle-zone ; secondly, why the Luftwaffe was unable to damage our war-production when it did turn, rather inexpertly, to long-distance raiding in 1940 ; and, thirdly, why in 1942-43 the German propaganda machine was turned on at full blast to try to persuade us that our long-distance raiding was useless and that we should do better to keep our Air Force for tactical employment. Unfortunately, the Germans found support in a good deal of " misguided propaganda " here in Britain ; the description was Mr. Herbert Morrison's. The well-meaning people who engaged in it were really playing the enemy's game.

There is little doubt now that before 1939 many of us expected far too much of the new weapon of the air. It was credited with capabilities which it did not really possess. The swift, overwhelming stroke which it was to deliver on the outbreak of war became an obsession and a nightmare. " The blow of the air is so strong that it is likely to be a knock-out because of its immense destructiveness and its power to land on a vital spot," wrote Mr. C. R. Attlee in 1934. " The amount of destruction that can be wrought by a concentrated attack by a considerable air force is so great," said Lord Cecil in the House of Lords on November 29, 1933, " that it may well be that one or two such attacks will decide the whole ultimate course of the war." " There is no doubt," he added, " that a strong attack made on this city (London) and on the other great centres of our life might absolutely cripple us in, I might say, forty-eight hours. That is the actual fact." Mr. Churchill himself, in a speech in the House of Commons on November 16, 1937, referred to the view that the next war would be decided by air action in nine days ; but it was clear from what he said that he did not share that view himself.

The view that the next war would be decided in record time by air action was never held by the Air Staff. A distinguished member of it, now Air Marshall Sir John Slessor, wrote five years before the war began : " No attitude can be more vain or more irritating in its effect than to claim that the next Great War—if and when it comes—will be decided in the air and in the air alone." (" Air Power and Armies," 1934, p. 114.) War is, in fact, a matter of team work, and an air force is part of the team. It cannot play a lone hand if it is to serve the common cause. It is not playing a lone hand when, sometimes, it seems to be doing so. The strategic air offensive is not a separate war.

If before the war popular expectation of what air power could accomplish was unreasonably high, it must be admitted that the misapprehension was increased to some extent by the unguarded and rather overdrawn accounts that were given of the effect of our attacks on German centres in 1940-41. It is evident now that we were not hitting Germany

nearly as hard as we thought we were. We were regaled with lurid descriptions of the damage and devastation which our Wellingtons, Whitleys, and Hampdens were causing. We read of Essen, Dusseldorf, Mannheim, Hanover, and other towns swept by fire, of buildings collapsing under high explosive bombs, of whole areas reduced to rubble, of widespread ruin left in the wake of each attack. The effect of the bombing of the synthetic-oil plants and the refineries was exaggerated in particular. Oil, we were told, was Germany's heel of Achilles, and that was where we were hitting her. Already, by September 21, 1940, a Minister then informed us, 90 per cent. of her synthetic production and 80 per cent. of her refineries had been " hammered with devastating effect." The strange fact was that she still had enough oil to send her armoured columns careering all round Europe.

The sober truth is that the bomb-loads which our aircraft carried at that time could not possibly have had the almost apocalyptic effect that was claimed for them. They were puny loads, judged by present standards. How ideas have changed in this respect is shown by the fact that the dropping of fifteen tons in a night was thought worthy of mention in some of the official reports of the autumn of 1940 ; indeed, the fact that three tons had been dropped on Boulogne on August 17, 1940, was also specially recorded. It is not surprising that that kind of air attack accomplished less than had been expected from it.

Nevertheless, to conclude that we made a mistake in opening and maintaining the strategic air offensive would be unwarranted. We were right, absolutely right, in what we did. We kept the war alive by it, put heart into the nation here at home, gave our air crews invaluable experience for the great work that was still to come. We were beginning to immobilize a huge army of home defence in the Reich, to divert German man-power from other essential work to the repair of bomb-damage, to teach the Germans that a war is not invariably fought beyond their own frontiers. Those experimental raids of 1940-41 were profitable from many points of view.

It was only in 1942–43, however, that air power in the true sense came into action in this war. We had too small an Air Force to batter Germany's war potential effectively before that time. The " 1,000-bomber " raids of 1942 were a portent of the wrath to come to Germany, but it was only in 1943 that our mighty Lancasters and Halifaxes were available in adequate strength to make the air offensive a major operation of war. The Battle of the Ruhr in the spring of 1943, the Battle of Hamburg that was fought in the last week of July, 1943 (when 75 per cent. of the city was devastated), and the Battle of Berlin which followed in November and December were landmarks on the long road to victory. They were as significant as those epochal events at sea, the sinking of the " Tirpitz " by the two Lancaster squadrons on November 12, 1944, and the brilliant success of the American carrier-borne aircraft against Japanese warships and convoys in a number of encounters in the Far East.

Assuredly the strategic air offensive has always been worthwhile. " That," said General Smuts at Nairobi on December 11, 1943, referring to the bombing of Germany, " is the most important and considerable contribution to victory now being made. I put it second to nothing else." It was, however, a delayed-action contribution. " We must not expect too quick results," Lord Hankey had written in September, 1942. " Like all methods of attrition, bombing takes time." " We should press on with bombing to the utmost," he added, " since this is an indispensable preparation for future campaigns, but it would be premature to count on it to bring about an early decision."

A method of attrition is often a disappointing method. It seems at times to be getting one nowhere. It is in the nature of things that a stage should come when a feeling of frustration, impatience, petulance emerges, when people are inclined

to say: "Oh, this is no good. It's all hot air. All our bombing has not prevented the Germans from carrying on the war on two long fronts or Runstedt from breaking through in the Ardennes or Doenitz from mounting a new U-boat campaign." That is the natural reaction to a situation in which a long war seems to drag. But the policy is as sound still as ever it was. The point never was and is not that air action will give quick results or will force a decision by itself. It was always and is that without the air offensive we should probably not beat Germany at all. It is an essential ingredient in the prescription for victory. Without it, for all our dissatisfaction, we should be in a far worse situation. Sea power—a method of attrition, too—and air power are alike in that, like the mills of God, they grind slowly. Sea power strangles; air power disarms; land power administers the knock-out blow. No one of these three can be spared.

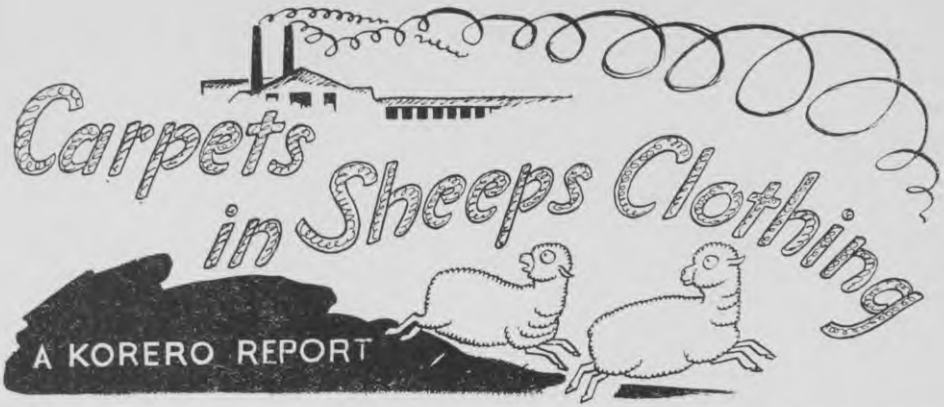
In 1933 the Nazi Party came into power in Germany. In six years of "guns before butter" it built up an army, an air force, a submarine fleet, and a war potential surpassing in magnitude the combined armed strength and war potential of all the rest of the world. What has to be done is to reverse that situation and to restore the comparative position of 1933. It has been the task of Bomber Command of the Royal Air Force and of the 8th and 15th United States Army Air Forces to undo the German military reflation of 1933–39. There is no reason to suppose that that can be accomplished in much less than six years also.

Not until after the end of the war shall we be able to assess the contribution which air power has made to the success of the allied cause. Not until then, also, shall we know what the war has done to further the interests of civil aviation. It has done much, we can say already. It has made the Atlantic crossing by air a commonplace. That ocean had been flown twenty thousand times by the middle of August, 1944, and the time from shore to shore had been almost halved. It will remain for the air liners of the stratosphere to halve it again. They will probably do so, with a good margin.

What has been happening to the Atlantic has befallen other seas and oceans, too. Distances have been abridged in a way which only the urgency of war-like missions could have made practicable. The whole world has been girdled by air lines. It would not be untrue to say that there has been more "civil aviation" since 1939 than there was in all the years that went before. The Royal Air Force Transport Command and the United States Army Air Transport Command have carried between them more passengers and freight than all the civil air lines of the pre-war era carried in comparable periods of time.

The great network of airfields, flying-boat bases, and staging-posts which have come into existence for the purposes of the war will remain no doubt, though probably with some shrinkage, to serve the interests of international air transport in peace. The very fact that the military aviation of countries like the United Kingdom, Canada, Australia, and the United States has worked in close association during these years of conflict should be a good omen for the future. The comradeship of the air will not pass away with the war.

How far the technical developments and improvements which the military aircraft has undergone will affect the civil aircraft of to-morrow remains to be seen. The standards of peace will be different from those of war, and the high performance, great speed, and climb manœuvrability and other characteristics which war demands will not be necessary advantages in peace. There will be an increasing divergence between military and civil types of aircraft. Nevertheless, some of the advances which have marked the period of the war cannot fail to have their effect on the design and construction of the kinds of aircraft which will be wanted when the world settles down again to the ways of peace.



WE WENT to Wanganui to find out how sheep-skins were made into rugs and carpets. We thought we'd better start at the beginning, so we paid our fourpence, and clattered out in a rheumatic tram to Aramoho suburb. The tannery was there. We met Mr. D. R. Bowie, manager, an anti-tank gunner who had been smacked up near the Sangro River, Italy.

" Glad to see you," he said. " Come right in and I'll show you over the whole shooting-box."

Straight away, your nose told you you were inside a tannery. A pungent odour permeated the place. Skins, some white, some coloured, were piled alongside great tubs filled with water, and large mangle-like machines. The concrete floor was slippery with water and clotted fragments from the skins.

Upstairs we went to where the sheep-skins arrived from North and South Island stores. One hundred and seventy were banded together in each bale, or, as it is known in tannery circles, " dump." A brown-clad middle-aged man was grading them rapidly into separate piles. According to the texture and quality of the wool and pelts (skins), they would make either rugs, slippers, or coats. Without pause, the man in brown determined the destiny of each skin.

Meanwhile, Mr. Bowie told us the works were tanning and dyeing about six thousand skins a month. He explained that in the manufacture of rugs the skin doesn't matter much, but for slippers it's important to use a sturdy skin which will give a good suede finish. Women's coats, on the other hand, can't be heavy, so into them go light skins with attractive wool, women being what they are.

" That's fine," we said, " but we think we'd better just stick to the rugs and carpets for a while."

" Quite," said Mr. Bowie. " You'll notice the skins here are more yellow than white, and they're dirty in some places. So next we've got to clean 'em."

Downstairs we were introduced to two perpendicular wooden drums, 10 ft. in diameter. One wasn't working, but the other, one-third filled with a warm solution of soft soap and soda ash, was rotating with 125 skins inside it. After forty-five minutes the skins would be tipped out, the wool scoured and spotless. But strips of flesh still remained on the skins, so most of this would be scraped away in a fleshing machine—a large mangle which had sharp edges set along one roller.

" Now you'll find out where the smell comes from," continued Mr. Bowie, leading the way to long wooden tubs, in which revolving paddles kept the pelts moving, and hurried up the process of tanning. " The smell, of course, comes from the tanning liquid, made from wattle bark, which is imported from South Africa."

We asked what was the idea behind tanning ?

Apparently skins are composed of millions of fibres containing a high percentage of water. Water means rapid decay. Tanning removes all the water from each fibre, replacing it with an anhydrous substance.

After nine days the skins, well and truly tanned, are passed on to a shaving-machine, rather like an electric razor, which removes the last remaining traces of flesh from the skins. After another wash in running water the wool is dyed to the shade required. The length of time depends on the colour. Pastel blue is only a matter of saturating for an hour, but heavier colours, such as burgundies and rusts, require soaking overnight. The fixing of a deep colour such as black, sometimes takes two days. The dyes, imported from England, are the same as those used for colouring cloth.

" How do you dry them ? "

" Well, sun-drying would take weeks. That's far too long, so we speed up the process with this big churn, called a hydro-extractor. Inside it's got a perforated drum, into which we pack thirty to fifty pelts. Then the power is switched on, and the drum, spinning at 800 revolutions to the minute, throws out most of the water. Centrifugal force, you know."

This packing and spinning naturally crinkles the skins, so rollers smooth them, and the remaining amount of water is sun-dried out within a week. But by then the skins are stiff and hard, and difficult to work.

So they have to be made pliable again.

That's the job of the staking-machine, a weird apparatus resembling an ant-eater. Its hinged jaws fly backwards and forwards, making great bites at the unfortunate pelt. The pelt soon yields and becomes soft as it is grasped between a roller in the top of the jaw and a U-shaped groove beneath.

Now all that remains, as far as the preparation of a carpet-pelt is concerned, is to trim and give an even pile to the wool with an electric clipper.

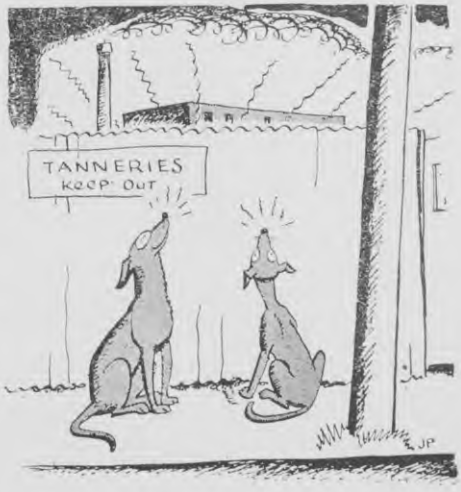
If the pelt is going to make slippers, however, it is given a suede finish by a revolving drum coated with sand-paper, and then dyed—red, green, or blue. The wool is mechanically combed, fluffed up, and clipped again. Surplus wool is sucked away to containers, and later sold for packings in mattresses and upholstered furniture.

And that, said Mr. Bowie, was all, as far as he was concerned. We'd find out how the tanned, dyed, and clipped skins were made into carpets in Wanganui.

The rug and carpet factory, contrasted with the tannery, seemed a most sophisticated establishment. No water sent your feet skidding, no smell of tanning lay heavily upon the air. No machine even remotely resembled an ant-eater. Only the incessant *whirr* of electric sewing-machines blended with the " Whistle While You Work " radio session.

Here the skins arrived from the tannery in colours ranging from rust to green, burgundy, blue, rose, off-white, fawn, and black. It was a simple matter to grade them into matching qualities for rugs and carpets.

Girls with razors trimmed each skin into a rectangle, 32 in. by 23 in. You would imagine it would be only a simple matter then to sew them together, to the size of carpet required. But, a deplorable oversight in the eyes of the carpetmakers, the sheep chooses to grow no wool in a little area just below where the legs join the body. These callouses have to be cut away, and a triangle of woolly pelt is fitted, then sewn in. The skin is now a uniform woolly rectangle, and several of these, according to the size of rug or carpet, are fastened together with overlocking stitches on electric sewing-machines. Each sewing-machine has a reel of 9,600 yards of thread. A good



operator, sewing twenty skins together in three hours, uses up these $5\frac{1}{2}$ miles of thread in three days.

When the pieces are sewn together, the rug or carpet is laid flat, moistened, tacked out, and stretched for twenty-four hours. This prevents any likelihood of buckling, or lying unevenly upon the floor. Next day the rug has felt linings sewn beneath it, the edges are trimmed, and the wool is given a final spruce up with a metal comb. Then at last it is ready for display in shop windows.

At Wanganui, 250 rugs are being turned out each week. In Wellington a smaller factory, belonging to the same firm, produces 100 weekly. Carpets, of course, take more time, and are heavier and more cumbersome for operators at the sewing-machines. Yet these, too, are being produced as well, little more than one a fortnight it's true, but, with the experience gained, the firm is planning for more rapid production. Carpets (modestly

limited to matching or contrasting wools) are built up from either 9 in. squares or from skins measuring $31\frac{3}{4}$ in. by $22\frac{3}{4}$ in.

In the last-named size it takes twenty skins to make a carpet 10 ft. 6 in. by 9 ft., and it's all yours for about £30—if you have the money, and if you've been lucky enough to get a floor with a house or a flat around it.

THE WIND AND THE RAIN

From a Report by KENNETH B. CUMBERLAND

NEW ZEALAND'S soil erosion problem has two outstanding characteristics —first, its seriousness and extent, and, second, the different forms it takes in different regions. Soil erosion is extensive, especially when you consider how small New Zealand is, and serious when you consider how short a time Europeans have been here. It becomes still more serious though, when you remember that the national economy and high living standards of New Zealand's million and three-quarter people both depend almost entirely on a restricted range of exports—all derived immediately from the soil.

Four years' reconnaissance study of the wasteful use of our soil shows above all, that soil erosion is a distinct and separate problem in different areas, each area demanding its own solution. In spite of the small total area of New Zealand, conservation must be set about regionally and the cultural and physical conditions which have hastened erosion must be thoroughly understood. Natural geologic erosion in New Zealand is more rapid than in older countries. Geologically, the earth's crust that forms New Zealand is of recent origin, which means that it is sharply elevated, and high elevation and small area mean steep run-off. This, with climates which actively help erosion, has made the structure of the country even more prominent. You will have noticed how most of our landscape is made up of steep, deeply-bitten hill faces, and abrupt and ever-changing breaks of slopes.

Climate ordinarily wears away the land. But if Nature is left to itself an uneasy balance is maintained. With the appearance of man this delicate balance is upset and climate ranges itself alongside him as chief collaborator. It is different climates and different elements of climates that to a great degree determine the rate and kind of accelerated erosion. Twelve month extremes of temperature don't matter nearly so much as daily temperature variations, which in New Zealand are considerable. In easterly districts generally and the South Island interior

particularly, these variations are abnormally large and become important when they frequently involve moisture in the top soil. The annual frequency of ground frosts is a fair, if not accurate, measure of the effects of these variations. In some regions as many as two hundred ground frosts a year may be expected to assist in the slow forms of mass-movement brought about in the first place by burning and grazing and pastoral settlement.

By far the greater part of New Zealand has a heavy rainfall, though generally it is evenly distributed through the year. Five-sixths of the total area has average annual totals of over 40 in., and of this almost 75 per cent. has 60 in. Totals of 200 in. are frequent. In some parts, notably North Auckland, Poverty Bay, parts of Hawke's Bay, and the north-eastern tip of the South Island, more than 30 per cent. of the annual fall is concentrated in the three winter months. Rainfall variations affect the variations in soil moisture content; but it is the intensity of New Zealand's heavy rains (particularly those recorded periodically over two-, three-, and four-day periods) that increases the severity of our soil erosion problem.

The New Zealand area, too, is exceptionally windy, but, despite the heavy rainfall, very sunny. Moreover, on the sheltered side of the ranges warm, dry winds, low humidity, and high evaporation go with lighter rainfall and as much as 2,400 to 2,500 sunshine hours. Such climatic characteristics occur in areas where the delicately adjusted grassland of the plains has suffered because of cultural malpractices. Such areas—Marlborough, Canterbury, Central Otago, and the Mackenzie Country—face high erosion hazards.

The vegetation of New Zealand was adapted to the soil, the climate, and the contours of the country, and the soil was held. However, the conversion of New Zealand from swamp, forest, or virgin grassland to one huge farm with pastures chiefly of introduced grasses has been ruthless. The extent and speed of the change have been astounding; but largely because of haste and ruthlessness and the extent to which the process has been carried in such short time, the value of the land has changed—for better in some places, for worse in others.

In New Zealand, as elsewhere, unconsidered interference with natural vegetation is a prime cause of unnecessary soil decay. Interference has been direct and indirect. Drainage and reclamation, ploughing virgin sod, sowing imported seed, bush burns, tussock fires, especially fire—these are among the important methods of direct interference. Not less than half the total surface of New Zeland has at least once during the century past been swept by fire—forest trees, the grassland plains, and scrub waste alike.

The plough is not much used in New Zealand agriculture. Tillage and cropping is restricted almost entirely to the South Island plains and "downland." It was in the early days of extensive grain-growing and overcropping with bonanza cash crops, practised much more widely then than now that the plough irreparably damaged the natural value of the South Island's better land. The soil problems of the South Island foothills and Canterbury Plains—erosion, exhaustion, and loss of structure—are a heritage mainly from the quarter of a century following 1865. Then, when sometimes 5,000,000 bushels of wheat were exported annually and the Canterbury Plains alone produced even more than that, fertility was mined and the light topsoil stripped by wind and water from most of the foothills, downlands, and plains of the lower rainfall areas.

The principal indirect agents of soil changes—and ultimately of excess waste—are animals and plants. In the brief century of European occupation nearly 750,000,000 domestic animals have grazed the alien, deteriorated native, and induced-indigenous vegetation of New Zealand farm lands. In addition, millions of rabbits have nibbled the ground cover, and large numbers of deer, goats, thar, chamois and wild pigs have helped to deplete the taller vegetation of both occupied and unoccupied tracts; and all this in a relatively small area which, before Cook, knew no grazing animals. "Fern crushing" with flocks of dry sheep was a regular practice in North Island pioneering. It is still practised in modified form, and heavy beef cattle are carried on

many hill sheep stations in the heavier rainfall districts of the North Island principally to trample fern, bidi-bidi and other self-growing second-growth plants in deforested areas.

Stocking has a double effect on the soil. It has helped the substitution of a new vegetation and, in many areas, has thinned out the protective plant cover. Equally important, though often overlooked, the pounding and trampling of stock has had the effect of compressing, consolidating, and puddling the topsoil, changing its structure and water relations and increasing dryness during drought and increasing run-off during rain. Moreover, the hill country is to-day seamed with millions of sheep-made contours, and each of these tracks is a silent witness to the extent to which stock trampling accentuates the downhill creeping, flowing, and slumping of soil.

Evidence drawn from many parts of the Dominion is sufficient to illustrate the seriousness of the soil erosion problem in New Zealand. The ever accelerating rate at which topsoil is being washed and blown away, the increasing frequency of "slips," the almost daily damage to railroads and highways, and the recurrence of higher and still higher river floods—all these have suddenly brought a widespread realization of what a century's possession has done to the land. They have also widened the sporadic agitation for river-protective works and afforestation into a firm public demand for soil conservation. A new attitude to the land and fundamental social readjustments are demanded. In 1941 the Government was prevailed upon to sponsor and pass a comprehensive Soil Conservation and Rivers Control Act. Though operations —even research—have apparently been held up for the duration of the war, the Act will lay the foundations of what should be an important and essential aspect of post-war reconstruction in the Dominion.

Despite the advance of agricultural techniques, in particular of pasture management, and despite the increased use of artificial fertilizers, the improved strains of stocks, crops, grasses, and clovers, and despite the reclamation and bringing-in of new land, New Zealand can show no comparable expansion of farm production. In recent years, in fact, carrying-capacity has remained barely stationary. It has been claimed that "the countryside is intrinsically worth less for grazing than in 1870-80." For this, soil erosion is largely to blame.

We have examined the physical causes of soil erosion, but the real underlying causes are economic and social. This concerns us all very acutely, and it would be well worth your while thinking about and discussing what you think have been the social and economic causes of the decay of our soil.

Typical erosion country.

Sir John Gorst

PROPAGANDIST OF THE SIXTIES

By R. M. BURDON

ONE DAY in the year 1906, two old men, one a distinguished looking, bearded Englishman, and the other a tattooed Maori, greeted each other warmly on the deck of a liner which had just drawn up at an Auckland wharf.

The Englishman, Sir John Gorst, had just arrived to represent the British Government at the International Exhibition in Christchurch. He had had a distinguished parliamentary career, having at one time been a member of what was known as the fourth party—a group of young conservatives consisting of himself, Sir Henry Wolff, Arthur Balfour (a future Prime Minister), and Lord Randolph Churchill (a future Chancellor of the Exchequer and the father of Winston Churchill).

The fourth party grew out of the Bradlaugh incident—that bewildering wrangle over the conduct of Charles Bradlaugh, radical and atheist—who declined taking the oath of allegiance when elected to Parliament. The fourth party worked on two principles—each member was allowed complete freedom of action, but whenever one of them was attacked the others were expected to defend him.

" Upon these conditions," writes Winston Churchill in his life of his father, " was created a parliamentary group which proved, in proportion to its numbers, the most formidable and effective force for the purposes of opposition in the history of the House of Commons." The group broke up when Lord Salisbury's Government came into power in 1885, and two of its members were appointed to high office—Gorst becoming Solicitor-General.

Soon after Sir George Grey arrived in September, 1861, to become Governor of New Zealand for a second term, a well-known Maori chief, Wiremu Tamihana, complained about the liquor that was being smuggled into Waikato. Advantage was taken of this complaint to send a Magistrate into the district with orders to learn all he could of the state of affairs—especially of the growth of the King movement—and to keep the Government informed. Gorst, who had but newly arrived in the colony, was chosen for the mission.

The Maoris, however, suspicious of his intentions from the first, refused to recognize him. He was subjected to a mild form of boycott, which, fortunately for him, was not applied to the supplying of food. To employ such an expedient was beneath the Maoris' conception of political, or for that matter, actual warfare. They were as yet merely suspicious, but when, towards the end of 1862, Gorst was sent to found a school at Te Awamutu, their suspicion changed to alarm.

Actually the intention of the Governor was to educate and anglicize a number of young Maoris who might afterwards be expected to renounce allegiance to the Waikato king and remain faithful to the British Government in whatever circumstances may arise.

There was already a mission school at Te Awamutu which was now taken over, enlarged, and improved. Its pupils, con-

sisting chiefly of young children, were sent away, and it was announced that in future only big boys would be accepted. "Formerly," complained the Maoris, "when we wished our young men to go to the mission schools we were told that their lips and tongues had grown too stiff to learn English, and little children only were accepted; now the lips and tongues of the young men have suddenly become flexible, and they are invited to go to school at Te Awamutu where they will be turned by the Government into policemen."

Many of the chiefs forbade their young men to attend the school, but civilization had certain advantages to offer that were hard to resist. The young men who did attend were taught various trades such as those of carpenter, blacksmith, shoemaker, and tailor. The wares they turned out were in great demand among a primitive people with no other means of obtaining them. Even those two staunch upholders of Maori nationalism, Rewi Maniapoto and Wiremu Tamihana, paid a visit to the school. So great were its attendant advantages that the school might have been allowed to exist unmolested had not the Government persisted in pursuing its propagandist policy still further.

All this time Sir George Grey was constructing strategic roads to open out the Waikato. "I shall not fight against your king with a sword," he had told the Maoris, "but I shall dig around him with spades until he falls of his own accord." It was rumoured that he intended to send a steamer to patrol the Waikato River. The Maoris understood very well that the roads and the steamer were spades with which he was digging around their king, but the chiefs restrained their young men from violence until Grey began to employ yet another implement for the upheaval of their regime.

For some time the Natives of Waikato had been printing and distributing a small news sheet, known as the *Hokioi*, in support of the principles of the King movement. The printing-press had been sent to them as a present by the Emperor of Austria. Hokioi was the name of a fabulous bird, never seen by mortal eyes and known only by its scream which was supposed to be an omen of war and pestilence. Patara Te Tuhi, the same who came to greet Sir John Gorst at Auckland more than forty years later, was its editor. To combat its influence Grey sanctioned the founding of a rival newspaper; a printing-press was ordered from Sydney and set up at Te Awamutu. The Government paper was christened *Te Pihoihoi Mokemoke*, or "The Sparrow that sitteth alone upon the house-top," and John Gorst became its editor.

The first number of the *Pihoihoi* came out on February 2, 1863, and its leading article was headed "The Evil of the King Movement." Satirical in tone, the article began with a quotation from Jeremiah: "To the Kings of Judah, sitting upon the throne of David, thus saith the Lord. Execute ye judgment and righteousness, and deliver the spoiled out of the hands of the oppresser; and do no wrong, do no violence to the stranger, the fatherless nor the widow, neither shed innocent blood in this place." The article then went on to draw a highly unfavourable comparison between the administrative methods of the Maori king and those laid down in Holy Writ for the guidance of the kings of Judah. It touched a sore point, for the Maori knew that their king was a mere symbol. They complained bitterly that the *Pihoihoi* "was written in bad mocking style," and asked angrily why such a thing was allowed to function in their midst.

As one with small claim to knowledge of the Maori race, I suggest with diffidence that it was the use of satire, a thing to which they were unaccustomed, and the ironical tone of the article, which so exacerbated the Maoris' feelings. Satire is a highly civilized weapon, and they may well have regarded it in the same way as we in our state of enlightenment view the introduction of poison gas into the highly civilized process of modern warfare. The *Pihoihoi* was circulated widely throughout the Waikato, where it raised a storm of indignation. Rewi Maniapoto sent a message to the Runanga, or Maori council, at Ngaruawahia, asking for guidance as to how he should act, and answer came in the form of a song.

Rewi took the song as an incitement to violence. On March 24 he sent a

party to Te Awamutu, who broke into the printing-office and carried off the press with the whole issue (the fifth) of the *Pihoihoi*, which was in process of being printed. In spite of vigorous resistance by the staff of the newspaper, no one was injured. Von Dadelszen, the printer, had taken off his collar and tie while at work and had left his gold tie-pin sticking in one of the cases of type. The case was taken away, but the pin was found later on, carefully stuck into the wall.

When all opposition had been overcome and the press had been removed, the raiding party, before going away, sent one of their number into the house to ask, in all civility, if he might borrow a pot and kettle in which to cook their food. The raiders, indeed, had carried out their act of violence in a most exemplary manner, and no effective reply was forthcoming when a member of the House of Representatives pointed out that if some one had started a violently anti-Catholic paper in the Town of Tralee he might well have met with a worse mishap than befell the staff of the *Pihoihoi*.

Gorst was absent when these events took place, and did not arrive on the scene till everything was over. The experience was not altogether a new one for him. Long ago, when a boy at Preston Grammar School, a paper called *The Scholar*, of which he was editor, had been suppressed by the school authorities, curiously enough upon the pretext that it contained obnoxious articles written in a mocking spirit. Though most of the articles in question had been written by his father he did not feel justified in excusing himself on that account. "Nobody," he complained many years later, "has ever employed me to edit a paper since these two failures."

The question of whether he was to remain longer at Te Awamutu was left entirely to his discretion by the Native Minister. Though warned by many Maoris, both friendly and hostile, that he had better consult both his own personal safety and that of his wife and child, who were with him, by leaving the district at once, Gorst remained, hoping that a reaction of Maori opinion, arising either out of disapproval or fear at Rewi's drastic measures, would take place in favour of the Government. Life had become more difficult than ever. According to Maori custom, he was now looked upon as technically dead. He was addressed as "You food of Waikato," and when he travelled on the river by canoe, men standing on the banks called out to the boatman inquiring about the welfare of the corpse he had with him.

At the end of three weeks Gorst, who had already sent away his family, realized that he was only risking his own life by staying on. The influence of the firebrand, Rewi Maniapoto, was growing steadily. The young hotheads would soon be out of control. At a meeting of the chiefs Gorst was told that the sacking of his printing-press was the work of all Waikato or, in other words, that the influence of the war party had become supreme.

Seeing he could accomplish nothing more, he packed up and went on April 18. It was none too soon. Little more than three weeks later the incident took place which brought on the Waikato war, when an officer and eight other ranks were ambushed and killed at Tataraimaka. Shortly afterwards Gorst returned to England to begin, or rather to continue, his distinguished career. Forty-three years passed by before he saw Te Awamutu again.

The Old Grey Mare

FUNNY HOW you meet people. Now, if both our tractors had been working, and what with old Joe and Prince our two horses, we could have brought the wheat into the mill in good time; but, blow me, if the pistons of one of the tractors don't go phut on us just the day the mill arrives. We were going to carry on with the one tractor and two horses till the boss of the mill heard about it. No show, he says, he wasn't going to have the mill idling while we fellows brought in the wheat from the paddock way down the terrace. So we scout around the countryside to borrow a tractor, or at worst, a horse and dray. then we find old man Blackmore up the road has an old mare he borrowed from Jimmy Styles, and when we ring Jimmy he says we can borrow his mare, for what it's worth.

Well, when you're stuck, as we were, any horse is a horse, so we thank him, and we guess old man Blackmore is listening in on the party line so there's no need to ring him especially to tell him we'll be up for it.

That evening, while the mill hands were strolling about smoking and yarning with the boss, I set off on my bike to pick up the old mare from Blackmore's. That's how I come to meet Matilda. When I see her I wonder what I've struck. She's an old white horse, a dirty white, and I don't think she's ever been groomed, and her back sags way down in the middle as though she's too tired to hold herself up, and I wonder if at any moment she won't collapse altogether. But she's mighty quiet, and when I go up to her and throw a piece of twine round her neck she calmly follows me out of the paddock and into the yard, where I harness her and back her into the dray.

Going home she walks along as though she's no idea where she's going nor why, a real dejected walk, so that I don't like to crack her with the reins, but just speak kindly to her. "Come on, Olga, old girl," I say, or "Just a little faster, Bette," but all to no avail. And I can't whack her—she looks so sad. So when it's really dark and I should be sitting by my fire having a good hot cup of coffee, there I am in the stable undressing her while she snorts and blows away at the chaff I've put in her box.

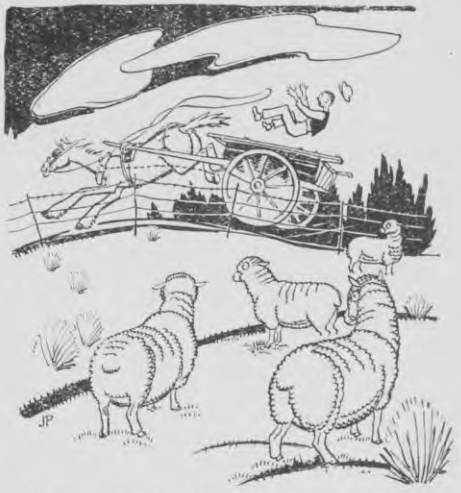
She stayed with us for two days. She was a good mill horse, the noise of the engines didn't disturb her in any way; she just stood quietly as we forked the sheaves on to the feeder. The only trouble was that she wasn't much more energetic when I drove her out to the wheat-field. I cracked her with the handle of my fork once, but she only looked round at me in

a sad sort of way, then slowly plodded on. In the end I gave it up; I let her go as she liked and almost where she liked. So long as I brought in a drayload of sheaves once in a while I didn't worry.

Then one morning the sun shone through the blue-gums on to a high straw stack, and the stooks had disappeared from the paddock, and all that remained was the short stubble marked by the tracks of dray wheels and tractor tires. So I harnessed the old mare to go back to Jimmy Styles', where she belonged. Going the half-mile down our drive she just dawdled along with her head hung down. Still, it was a lovely morning, and with the hard day's work behind me I quite enjoyed the funeral pace, being in no hurry to get back and start on some other job. We passed through the gateway that leads on to the public road, then I let her stroll along on the grass at the side of the road till we came to Jimmy Styles'. Here I said, "Whoa, Matilda," so she whoaed while I jumped down to open the gates.

Slowly we rattled up the shingly path; magpies would look up from the nearby pasture where they'd been listening-in to the grub world, and come squawking over to their nests in the pine-trees; sheep left their nibbling at the grass, looked at us, then at each other, then as we passed they nibbled at the grass again. I was admiring the peaceful scene, when all of a sudden the old mare neighed, she arched her head in the air, then galloped with the dray clattering and bouncing behind, and me sitting where I'd just been standing. "Whoa, Emma. What the —— whoa!" I yelled, tugging on the reins. But no, I couldn't stay her mad stampede. She eventually stopped by a gap in the trees, where a gateway impeded her progress. And over this gateway I saw the stables, and running up and down the fence beyond the stables was an old black horse. Like the mare, it had a great sagging back.

Driving up to the stables I couldn't believe her to be the same mare I'd that morning harnessed. Her head was held high, and she lifted her feet in as sprightly a manner as any excited show pony. All the while I was getting her out of her harness she would turn her head and look at that silly-looking black horse who was still galloping up and down by the dividing fence, then she'd turn back to me and snort as though annoyed at my fumbling with the buckle of the belly-band. As soon as I loosed her from the stable she made straight for the gate that led into the outside paddock, but here she had to wait for me to run over and open the gate for her to pass through.



Once through she flew with a thudding of hooves down to the far end of the paddock, with the old black horse bounding along beside her. Then they'd stand still, head to head, as though they had much to talk about, having been so long parted, then off again on another crazy gallop.

To think that she had missed that funny old black horse so much that life didn't matter when they were apart. Love, I thought, must be a peculiar thing with horses, for two queerer-looking animals you could hardly imagine.

Then going home I remembered old man Styles and his funny little wife.

CONNELL and WARD
ARCHITECTS

A KORERO Report

TWO NEW-ZEALANDERS who have succeeded brilliantly in their chosen profession are Amyas Connell and Basil Ward, of the firm of Connell and Ward, practising London architects. Student rivals for several architectural prizes in New Zealand, the two decided to join forces and go in search of fresh and greener pastures. They made no secret of their intention to work for the premier British architectural award, the Rome Scholarship, tenable for three years at the British School of Architecture in Rome. In 1924, when both were in their very early twenties they worked their way from New Zealand to England via Cape Horn as stokers in the "Karamea." They obtained work in architects' offices in London, and for nearly three years devoted their spare time to study for the scholarships. The result was the award in 1926 of the Rome Scholarship to Amyas Connell, and the second prize, the Jervis Studentship, to Basil Ward. In the interval of six months before the scholarships became tenable the two worked their way to New Zealand to see their relatives. On this return trip the team had to split. Connell travelled as steward in the emigrants' quarters of the White Star Liner "Ionic," and Ward, more fortunate, became bath steward on the Commonwealth Liner "Port Dunedin."

In New Zealand their fame had preceded them. They were entertained, and a Government contribution towards their expenses enabled them to return to England together as third-class passengers. From England they travelled to Rome to take up their respective scholarships, Basil Ward for one year and Amyas Connell for three. At the end of his study at the British School in Rome, Basil Ward, in quest of further experience, took an appointment with an architect in Rangoon. There he gained valuable experience in constructional work specifically designed to withstand earthquake shock.

In 1930 he married in Rangoon Beatrix Douglas Connell, sister of Amyas Connell, whom he had met for the first time on his last visit to New Zealand three years before. On his return to England shortly afterwards, the firm of Connell and Ward, architects, came into active existence. A year or two later Colin Lucas, a Cambridge architectural graduate, joined the partnership, and the firm became Messrs Connell, Ward, and Lucas, specialists in reinforced-concrete construction.

Connell and Ward have for years been putting into practice views on the function of an architect which even to-day are regarded as advanced by the more conservative of their contemporaries. They have had to battle against prejudice on the part of local bodies, other architects, and the public in general, but their designs have nearly always emerged unscathed from the turmoil of public controversy.

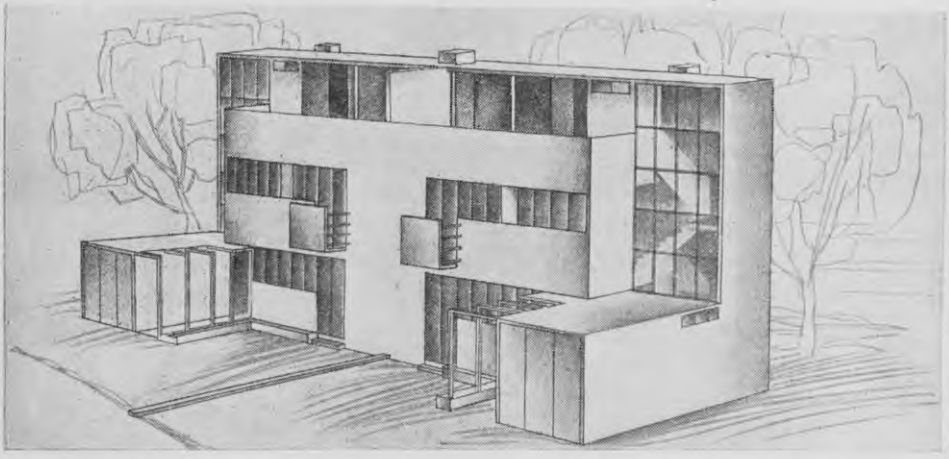
The views of the younger architects on the purposes for which the modern house should be designed have been stated in part by Professor C. H. Reilly, Director of the Liverpool School of Architecture from 1904 to 1933, and a member of the Council of the Royal Institute of British Architects.

In an article in the *Manchester Guardian* Professor Reilly wrote: "The light modern structure with its reinforced-concrete walls, thin like cardboard, which can themselves bridge voids without the help of lintel or beam, or as roofs and floors can project into space without apparent support, is entirely alien to all those ingrained notions of what an Englishman's castle or even his

solid little cottage so rooted to the ground that it seems to grow out of it, should be like . . . what is there, indeed, that this modern kind of design and construction can offer us in exchange for such solidities? I think the best way to look at these strange modern structures is as machines designed to enable their owners to live in as much sunlight and air as possible. The garden and sky are, as it were, to be brought into the house and made part of its decoration. Most rooms, indeed, have one wall of glass, some have two opposite walls. Because the walls above these stretches of glass are thin stiff sheets on edge, no heavy beams of wood or steel are required to span them. The glass itself folds back like a screen or, in the more expensive houses, sinks into the floor as the windows of a motor-car . . . The result is a room facing the outside world as the auditorium of a theatre does the stage. It seems, indeed, to stretch out and embrace it. Hence such rooms need not be very big. Much smaller ones seem big enough when one wall is removed and when at the same time one lives with only the few moveable possessions the modern home calls for. The main advantage, however, of this construction is in the freedom it gives to the plan. With walls in one piece, an upper floor can project out over a lower as in a mediæval home, only with far greater ease. Walls no longer need be directly above one another . . .

"A structure enclosing space by large sheets of cardboard, sometimes bent into semi-circles, especially one without chimneys or flues, is obviously not controlled in the same way as one built up of a vast number of small bricks and stones stuck together by mortar. The cardboard wall of the modern house is a concrete slab four to six inches thick threaded with thin steel rods and lined with cork or some other insulating material to keep the heat in and the noise out. The heat is the general heat of the whole building derived from a central source, reinforced at points by electric fires, so that the open planning, which the light stiff walls permit, is not interfered with by the necessity, say, to keep the dining-room door shut in order to keep the warmth in and the draughts out.

"Externally these new homes with their simple shapes of cube and semi-circle, devoid of sloping lines, it will be admitted directly one is accustomed to their first strangeness, suit the English countryside far better than the perky little villas or bungalows with their brilliant colours and restless outlines.



Connell and Ward's design for two semi-detached homes at Ruislip, the subject of an architectural *cause célèbre*.

The house in Frognal, Hamstead, showing the large living-room window from the terrace at first-floor level.

Against the plain white walls of the modern house, the moving shadows of leaves and boughs can make a pleasant pattern.

"In England we have not yet (1935) a great number of these machines for living. The best, perhaps, and certainly the best known, is the house on the hill at Amersham, called 'High and Over' which Professor Ashmole built for himself when he retired from the directorship of the British School at Rome—with the aid of Amyas Connell, Rome Scholar in architecture, and Basil Ward, his partner—an interesting conclusion to living among classical surroundings."

The unusual design of the house at Amersham, built in 1929, provoked long discussion among architects. The whole conception was almost entirely novel to English eyes at the time. It is probably true to say that the building of "High and Over" laid the foundation of the firm's reputation for advanced and courageous planning, a reputation which the later work of the partners has served to increase.

The difficulties that beset the paths of many of the more modern architects were shown by the Ruislip Case, an architectural *cause célèbre* in 1934. Messrs Connell and Ward were commissioned by Walter Taylor (Builders), Ltd., to draw up designs for two semi-detached homes at Ruislip, Middlesex. On the advice of an advisory panel of local architects, the Ruislip-Northwood Urban Council rejected the designs on the grounds that they were "injurious to the amenities of the neighbourhood."

Connell and Ward were fortunate in having a client both persistent and far-sighted, who was prepared to spend time and money in fighting what he felt to be injustice. The architects appealed against the decision of the local authority, but lost their case. The arbitrator appointed by the Royal Institute of British Architects required the Council to inform the client of the modification it required in the designs. The Council was in any case required to do this under the terms of the Town and Country Planning Act. It asked for a new design for the staircase wings with reduced height and width for the enclosure and a reduction in the area of glazing. It also required a new design for the bedroom windows to provide breaks in the continuity of the glass.

The Council's requests were accompanied by a statement that a drawing had been prepared unofficially to give some indication of what it had in mind, and by an invitation to the architects to inspect the drawing at its offices. Connell and Ward were able to show that the Council's design introduced structural weaknesses

the elimination of which would mean an approximate return to the architects' original design.

In the face of this demonstration, the Council accepted the original project with only minor modifications, and going yet further, accepted without objection designs by the same architects for a house on a site adjoining the first.

These designs had all the uncompromisingly modern qualities of which the Council had previously disapproved. This decision by the Ruislip-Northwood Urban Council was well received in architectural circles, and again the designs of Connell and Ward achieved wide publicity

In 1935 Basil Ward became a member of the Council of the R.I.B.A. and remained a member until 1938. In 1936 he became the architectural consultant to the newly formed Associated Realist Film Producers, a consultant film organization to advise Government Departments, public services, universities, educational authorities, industrial and commercial firms on the production of films. Some time before this Connell and Ward were commissioned to design two studio production units for Sound City (Films), Ltd., near London, to be the largest and most modern in England.

Another of the firm's designs at this time also aroused great interest. This was a plan of a hospital in reinforced concrete for the prevention of tuberculosis in women and children. In planning for the full use of sunlight and air, the architects made use of such features as the stepping-back of balconies and the provision of separate sections of sliding roof, and retractable screens for each bed.

A design of equal interest was that done by the firm for the St. Pancras House Improvement Society. This was a block of flats in reinforced concrete erected for working people in Ferdinand Street, Chalk Farm, London. The original plan for one large block was

The garden elevation, showing the external stairway which gives access to the terrace and main living-rooms at first-floor level.

abandoned, and two separate blocks, together containing sixteen flats, were substituted

Because of the crowded neighbourhood particular care was taken to give the flats as much sun and air as possible. Half of the building was raised about 10 ft. from the ground. Flats on stilts had been erected on the continent, but these were the first of the kind to be seen in England. Bicycle and perambulator stores were grouped on the ground floor opposite each staircase entrance, and the remainder of the space on this level was made into a wet-weather playground for the older children.

Another experiment in the new building was the provision of a direct staircase to each two flats, so avoiding that incessant stream of visitors, hawkers, and tradesmen along a common gallery, which had previously been an unpleasantly prominent feature of such buildings. Each roof provided a playground for small children, partly covered by a reinforced-concrete canopy. Special consideration was given to privacy in each individual flat. All rooms open on to a common hall

The living-room from the hall of the house at Frognal.

space. Cupboards are built in to each room, and there is a linen cupboard in every hall.

The reinforced-concrete construction was so inexpensive that it was found possible to let a two-bedroom flat for 13s. 6d. a week, the rental being calculated at 4s. 6d. a room, the kitchen, bathroom, and hall being free. The total cost of the buildings was £7,525, or 6·17d. a cubic ft.—a very remarkable figure.

To liven up a drab neighbourhood the exterior walls of the flats were painted pink, the staircase housing blue and balconies bright red, with flower-boxes at floor-level. The block was officially opened by the late Duke of Kent, and was named after him, Kent House.

One more example of the work of Connell and Ward provides yet another sharp contrast. This was a private residence built at Frognal, Hampstead, in 1938. There was considerable controversy when drawings of this house were submitted to the authorities. Serious obstacles were placed in the way of its erection by the authorities themselves, by architects, by adjoining owners, and by certain local residents.

This reaction was nothing new to Messrs. Connell and Ward, and after opinions in favour of the design had been passed by other authorities, and by other local residents, the obstacles were overcome, and the owner was able to have the home he desired.

The site was a small one—only 0·165 acres—and a large house was required. The fullest possible use of the ground space therefore controlled to a considerable degree the general form and construction of the house. The ground-level runs right in under the house, not only at the front to provide shelter for cars without waste of ground space, but also at the back, where a covered terrace, which forms in effect an integral part of the garden, occupies the space under the living-room which otherwise would be covered by building. Similarly on the roof, the area of the site is used over again in the form of a roof garden.

The rooms face east and west, and there is no outlook to the south, as the owner particularly wanted the lighting of each room to be from one side only.

The living-room has a window 45 ft. long by 8 ft. high, half of which slides completely away, making the room virtually a part of the garden if required. As the owner has children, it was thought desirable to use special sound-proofing methods and careful planning to ensure that different parts of the house could be kept free of noise from other parts The house is heated by electricity, and water heating and fires are also electric. There is therefore no solid fuel on the premises.

The house was designed for convenience in working, and to be run with the minimum of domestic help. There is no furniture which is not built in, other than chairs, tables, and beds. The house is built of brick and concrete, and the exterior is dark brown in colour.

After early struggles against ignorance and prejudice, Amyas Connell and Basil Ward are now recognized as being among the leaders of their profession. Writing in the London *Evening News* in February, 1938, John Gloag, an English authority, said of the partners: "They have the same sense of humour, the same profound knowledge of all sorts and conditions of people, for they have knocked about the world and bring to their profession a higher variety of experience than most architects acquire. Their work is fresh, unusual, and gets talked about. They have courage and can persuade their clients to accept originality." The writer concluded by giving it as his opinion that Amyas Connell and Basil Ward would play a large part in the creation of the future London.

Both are still in their early forties, and the rebuilding of London should allow the fullest scope for the exercise of their talent for clean-cut and courageous planning.

The corner bookshelves in the living-room.

Amyas Connell is a son of Nigel Douglas Connell, Eltham, Taranaki, and before leaving New Zealand worked for some time in the office of Stanley Fearn, Wellington. Basil Ward, second son of the late Louis Ernest Ward, of Wellington and Napier, was educated at Napier Boys' High School, and began his architectural career in Napier under articles to J. A. Louis Hay, later going to Wellington to join the firm of Crichton, Mackay, and Haughton. From there he departed with Amyas Connell for England in 1924.

Since the outbreak of war Basil Ward has been in the Navy and now holds the rank of Lieutenant-Commander in the Inter-Services Topographical Department. He was last heard of somewhere near Rangoon.

Soil Erosion in New Zealand.—On page 16 of this issue we print an article on soil erosion by Kenneth B. Cumberland. His book, "Soil Erosion in New Zealand," received much attention when it was published earlier this year. For further reading on this subject, two booklets, "Tackling High Country Problem Land at Molesworth" and "Water Put to Work," and a book, "Rape of the Earth" (by Jacks and Whyte), are suggested, and may be obtained through any A.E.W.S. or E.R.S. library. A film, *The River*, showing erosion in the Mississippi basin and in the Tennessee Valley, is also recommended; it will be shown in all districts in New Zealand. The C.A.B., "Defending our Soil," is now out of print, but should be read if copies are available.

WHAT'S ON TO-NIGHT?

A KORERO Report

WHAT SHALL I do this evening? I'm bored with the company, the weather is foul, our poker school broken up, boxing is off for a month, and I have lost my little black book with all those telephone numbers. Perhaps the cinema? A fairy tale for adults only? What is showing? The evening paper tells me—everything.

Spread across one column in a six-line tier of 12-point capitals, is

THE MASTER RACE
THE MASTER RACE
&c.

Looks impressive. What does it say above this arresting display?

"The Makers of 'Hitler's Children' Tear Out Yet Another Page from Present Day Events to Give You the Shock Sensation of the Year.

"VICTORY, YES . . . BUT WHAT ABOUT MY NAMELESS BABY?

"What About Those German Higher Ups (Ugh!) who, even in Defeat . . . plan to do it All Again?

"See It All—Yes, and Let's Make Sure—the Things you'll See Here will Never Happen Again!!"

Under the six-line tier is yet more text.

"A Smashing Indictment, &c.," it says, to finish in capitals with THE MOST DARING DRAMA OF OUR TIME.

Ummm. Sounds good. What is the next one? Only a three-line title! Yet it says plenty.

"PAY-OFF IN THE PACIFIC!"
"A SHIP WITH WINGS!" "MEN WITH GUTS!"
"A STORY OF GLORY!"

"An action-packed saga of a phantom flat-top . . . A floating angel of death—Sworn to avenge an outraged America . . ."

And so on. But that is hardly good enough. That is only a "story of glory!"; only a story of "men with guts!" But what is this?

"TO-MORROW'S ENTERTAINMENT TO-DAY!
SECOND SENSATIONAL WEEK!
THE GIANT MUSICAL EXTRAVAGANZA!"

But no. I saw that show when on leave in Rome six months ago, and it was so poor I walked out before the end. As I remember, it was a pitiful picture.

But there are many advertisements on this page. Here is one that describes a film as "DRAMA THAT HITS THE SCREEN WITH UNLEASHED FURY," and another rather modestly claiming to be "A Mystery Drama flaming with suspense . . . exploding with emotional dynamite . . ." That is inviting, but I'll give the other advertisers the benefit of a fair scan of their material.

"Bursting with Gay Laughter, Sparkling Music, and Action-packed Thrills," says a deprecating two-line 6-point introduction. "THE MAGICAL ICE MUSICAL," trills a second line, to be followed by, "Brimming with the colour and beauty of dazzling skating routines, rhythmically paced to the enchanting music of Miser Skinflint and his Royal Melodians." The same advertisement says other nice things about this film, too, such as "Splendour as never before captured on film." It is also apparently to the credit of this super-mammoth production that its male lead is "New, Handsome, Dashing."

I am overwhelmed.

But some one is not honest. I can't see how one film can be the "GIANT MUSICAL EXTRAVAGANZA" and another "The Gayest Carnival of Lilting

Music, Song, Comedy, and Dance ever seen on any Screen." That is what is claimed for

" NUTS " " NUTS "
" NUTS "
" NUTS " " NUTS "

Some one, I imagine, is allowing too much rein on enthusiasm. Some one, I suspect, is over-emphasizing. Some one, perhaps, is telling a whopper.

Maybe I should journey to the suburbs and see " MY FRIEND FLICKA," this being " a mighty story of fierce dreams, proud courage, fighting love " which " comes to the screen as a great picture — to see, to hear—to always remember . . ." In parenthesis those vague dots leave room for imagination to carry on the good work started by a modest writer.

But what confusion! Another suburban theatre has a film (" The Technicolour Triumph ") " surpassing all the tenderness of " My Friend Flicka."

I despair. There is so much of the ultimate in entertainment; I am bogged in a morass of advertising superlative. It is as difficult to choose the best of

this galaxy of the grandest as it is to pick the winners from a racebook. But wait! There is inspiration. Let us have recourse to that old, old method of winner-picking—the pin.

I shut my eyes and stab.

I have chosen to see the film presentation of a " brilliant and daring story " by a well-known doctor-novelist. I like that word " daring."

. . . .

I saw a very weak story which concerned a pair of wretched girls who became very involved in their nursing careers; a doctor who was uncommonly able and smug; a villainous chairman of a hospital board; a matron who may not be characterized. It was far from brilliant and there was no essence of " daring " in it all. It was, in fact, shocking.

But perhaps I misread the advertisement? I check and find that this spectacle is extolled as:

" Stark, heart-wrenching drama that spares no emotion in its forthright revealing honesty."

Why must people exaggerate?

the Native School

By DARRY McCARTHY

THE NATIVE school in its present form must be an establishment almost unknown outside the British dominions and colonies. Genuine and unpublicized efforts are made by teachers of a different race to impart to children the culture of peoples who have almost ceased to care about their rich heritage. Now, for instance, a movement is afoot to teach Maoris their own language at school, because very often at home English only is used. New Zealand history is taught much more thoroughly than in schools for white children, and during drill periods the pupils learn the haka and the poi. Events such as the coming of the Great Fleet are mimed in the playground, and the ability of the Polynesians as explorers and craftsmen is emphasized, so that by the time the pupil leaves school he is proud of his race and its achievements.

Boys learn to distinguish between various grasses, and as most of them will be farmers they receive some rudimentary training in the theory of farming. The girls learn to cook and keep house, and are taught something of how to care for babies. They practise weaving flax baskets such as those used on the rare festive occasions when there is a tangi.

There cannot be too much praise for the white teachers, who have lived in the country and grown to treasure the dying customs of the Maori and hand them on to children, in song, dance, and legend. The number of Maori teachers is increasing, and this should do much to help the preservation of a distinct racial pride.

However, the system has faults from the point of view of a child, and only enormous effort and the passage of a century or so can remedy its defects. The English language is no longer alien, but the culture remains that of a superior race. Around the walls of the primers' class-room are pictures of a white Jack Horner, a white Humpty Dumpty, and white Bo-Peep, sitting amidst scenery that is like nothing the children have ever seen. They learn from books which tell of the adventures of white boys and girls. Are Maoris, then, too unimportant to be noticed? The arguments adults can advance against the changing of such a system would seem trivial to the child, who wants to identify himself with the characters in his books. Otherwise, the life he is leading and that described in print take place in two different worlds. The life of the pa and cow-shed he finds easier to understand, and often from infancy he becomes dispirited and reads books unwillingly, feeling that they are not true representations of human experience. If in the future text-books are written by educated Maoris to cover the period from Primer I until about Standard II, the figures of the nursery rhymes will be Maori, without losing their essential identity, just as in the Chinese missions the Madonna and infant Christ are represented as Orientals. Geography and history, the other subjects concerned, have already had the emphasis moved so that the child can approach them with interest.

Discrepancies exist everywhere. A Maori girl compiling a scrap-book about a home has to use pictures of the sort of furniture she will never own, and fat smiling white babies. It may seem to her that the press of the country, sentimental enough when it remembers, does not recognize that the Maoris, too, have an everyday existence, and want to receive hints about wise purchases, tasty dishes, and sensible clothes for baby. It is, of course, the responsibility of the Maoris themselves to provide such services as a practical newspaper suitable for country readers, but meanwhile the situation is irritating.

The atmosphere of a Native school triumphs over the alien culture. The first pupils arrive about seven or half past, and the last around ten. Those who come on time travel in a special bus which has collected the children from miles about. It is usually dilapidated and overcrowded, and the pupils do almost everything but sit down and keep still. Sometimes whole families of up to four kiddies arrive on the back of a patient unsaddled horse, directed by a piece of old rope. Occasionally during the first lesson a boy falls asleep, because he has overtaxed his strength in his zeal to help his parents with the milking. Often lunches have been forgotten, and the gap is filled from a tureen of vegetable soup which has been cooked by one of the senior girls from ingredients supplied by the children.

Nobody knows who starts the fashions, but it is definitely " not done " to play marbles during the top-spinning season. Whole playgrounds are filled by children of all ages occupied in different versions of the same game, which may be for the day, and the day only, tip-and-run, which not a soul will play to-morrow. Two or three traditional Native games have survived and are played with the same zeal expended on imported relaxations. During class the children attend politely enough, reserving their greatest enthusiasm for singing in harmony. At the end of the day they tear away from the school-grounds with as much whooping and relief as their white brethren.

E. V. PAUL, GOVERNMENT PRINTER, WELLINGTON.