KORERO

AEWS BACKGROUND BULLETIN VOL 2 NO 2

IN THIS ISSUE

[*Official War Photo.*

The Union Jack flies over Falamae Village in the Treasury Islands after the Japs had been driven out by the New-Zealanders.

Tobacco

BY A KORERO STAFF WRITER

THERE IS a monument to the tobacco industry in the Marlborough district. It is a kiln for the drying of tobacco-leaf standing starkly out of place in the onion-fields of Grovetown as an ever-present reminder to would-be tobacco-growers in the district that "It can't happen here."

During the depression one Grovetown farmer decided to plant tobacco on land that had previously been used for grain and seed crops. The reason for his decision lay in the firm tobacco market which was enabling Nelson growers to weather the economic storm. It was difficult to find a paying market for his previous produce. His soil was good. The Nelson and Marlborough climates were similar enough to allow a reasonable hope that tobacco could be grown successfully in Grovetown.

So he realized on some of his dwindling assets, swotted up the detail from the experience of Nelson growers, built his kiln to approved specifications, and planted his crop. It grew magnificently. It was 6 ft. high in no time, then 7 ft., then 8. The difficulty was that it would not stop growing; neither would it ripen; and when, in desperation, the farmer picked some green leaf and kiln-dried it the result was ample and conclusive proof that Grovetown soil was not tobacco soil.

Yet just over 100 miles away around Motueka tobacco-growers are producing about half the leaf used in tobacco-manufacture in New Zealand to-day. To their success and Grovetown's failure the "good earth" holds the key. Tobacco prefers a slightly acid soil; light sandy soils and sandy loams. Marlborough soil in that locality was too rich, and this, coupled with slight differences in climate, meant disaster for Grovetown growers.

Thus there are no monuments to the tobacco industry around Nelson. The Motueka-Umukuri-Riwaka kilns are packed each season with golden leaf, which, when dried and cured, helps to fill the "tailor-mades" or roll-your-owns smoked by serviceman and civilian. Whatever may be your brand, a large proportion of New Zealand leaf is adding to your smoking enjoyment.

Over 3,000 acres of Tobacco

New Zealand tobacco was first grown from Virginian seed in the Nelson district in 1927. To-day there are over 3,000 acres planted in tobacco in that area. The crop is grown under contract to the manufacturing firms, who must pay an average price of 1s. 10½d. per pound for the total quantity they purchase. Individual growers may receive more or less than this minimum average according to the quality of their leaf, but purchasers cannot go below 1s. 2d. per pound. Fine-quality leaf will fetch up to 3s. 6d. per pound.

A good average yield is 1,000 lb. of leaf per acre, which means about £100

an acre to the grower—a splendid return from land which was previously in poor pasture supporting few stock.

Production-costs are comparatively heavy because of the amount of labour involved in cultivating the crop and the quality of fertilizer used. But Motueka growers would be the first to admit that the development of the tobacco industry in their district has been a considerable financial boon to them.

Raising the Plants

The tobacco-seed is planted in hot-houses during August. By October it is ready for replanting to the seedling beds, and by November is strong enough for the open fields. All the seed necessary is grown in the district, but the farmers rarely grow plants from seed themselves. They prefer to buy the seedlings from local nurseries at the not exorbitant price of 4s. per box of 1,500.

In the tobacco fields shallow furrows are ploughed about 3 ft. 6 in. apart and into these furrows fertilizer is drilled. The furrow is then closed and the seedlings planted by hand about 2 ft. apart. An average of 8 cwt. of fertilizer per acre is used, half being drilled in at the time of planting and half scattered by hand during the growth of the plant.

The hardest work is cultivating the growing crop. It must be inter-cultivated three to five times before harvest and hand-hoed three times. Average rainfall is necessary up to the end of January, but the plant will not flourish in damp ground. It grows as a long stalk, commences to flower when about 4 ft. 6 in. high, and is between 5 ft. and 7 ft. high in February, when picking is commenced. Not exactly slow growth—7 ft. in less than four months !

The Harvest

At harvest time the leaves are picked from the bottom of the stalk first and only two or three of the ripest leaves are taken from each plant at a time. The pickers take only the yellowing leaves and, as each plant has twelve to fourteen leaves and the ripening process is a gradual one, the picking of the leaf goes on until mid-April.

The kilns of the Tobacco Research Station, Riwaka, with tobacco growing in the foreground. On the left is a plant approaching maturity.

Tying the tobacco-leaves into bundles of two or three preparatory to kiln-drying. Behind the girls are racks of full sticks waiting to be transferred to the kilns.

The harvested leaves are packed into bins and taken to sheds, where girls tie the leaves in bundles of two or three. Each bundle is tied at the top and hung over a 4 ft. 6 in. manuka stick so that each leaf hangs freely. When thirty-six bundles have been placed on the stick it is taken to the kiln and packed in on racks beginning at the top of the kiln and working downwards. Each kiln holds 700–750 sticks.

The furnaces are next fired, and for two days a current of air about 85° to 95° F. in temperature circulates through the kiln. During this yellowing process the vents at the top of the kiln are closed and the leaf is kept alive. The process turns the starches in the leaf to sugars.

Next the vents are opened and the temperature raised by gradual steps to 175° F. while the leaf is dried to a brittle, bright yellow. The whole kiln process may take four to seven days, depending on the ripeness of the leaf.

The dried leaf cannot be immediately handled. It is so crisp that it would break when touched. Some of the moisture that has been extracted must, therefore, be put back before the leaf is taken from the kiln to be bulked and graded. A nice sea breeze will do the job in a few hours if the vents and doors of the kiln are opened. Otherwise it may be necessary to lay wet sacks on the floor of the kiln.

Grading

The leaf is hand-graded by expert girls. First in determining the quality of the leaf comes its position on the stalk. Except for the leaves nearest the ground, which because of their contact with the earth are usually burnt and damaged, the standard of the leaf deteriorates as it nears the top of the plant. Next in importance is the colour of the leaf, with yellow as the most desirable colour, followed by orange, light and dark brown, then green. At the same

WHERE TOBACCO GROWS IN NEW ZEALAND

The shaded portions of the map show the tobacco-growing areas of the Nelson province. The heavier shading round Motueka and Riwaka indicates that there is more extensive cropping in these localities. There are now some 2,400 acres under tobacco cultivation in New Zealand, the whole of this area being in the Nelson province. In 1941-42, 2,721,000 lb. of leaf were produced.

time is considered the texture of the leaf, a fine-textured leaf being more valuable than a heavy one.

The girls then tie the graded leaves in bundles of about sixteen to eighteen leaves. These " hands " are then packed into boxes lined with sacking for delivery to the manufacturers.

Several miles from Motueka is a station devoted to research into tobacco-growing. Controlled by the Department of Scientific and Industrial Research it was established five years ago and, in conjunction with the Cawthron Institute, Nelson, has conducted the research experiments necessary to protect the growers and ensure a healthy, economic crop.

The station covers about 17 acres, most of this area being devoted to experimental plots and seed-beds. There are thirteen experiments at present being conducted on the farm and each experiment has thirty-two plots of approximately 180 plants. These experiments are mainly concerned with the quality and type of fertilizer to be used since fertilizer can be described as the life's blood of the tobacco-plant. In the different plots varying quantities and mixtures of fertilizer are applied at different times to determine which method produces the best results. Mixtures of superphosphate, nitrogen, potash, ammonia, and blood have been found most beneficial, while, to provide humus, oats are sometimes grown after the crop is harvested and ploughed in before the next planting. This year a Canadian experiment using rye-corn instead of oats is being tested.

The station harvests and uses its own seed by bagging the heads of the plants after they have flowered.

There is also a hothouse and seed-beds for cultivation of the seedlings. Most of the laboratory work is done at the Cawthron Institute. The tobacco grown on the station is dried in three large kilns, which are heated by automatic furnaces.

Over the gate leading into one of the experiment paddocks is a notice " No Smoking." It is not intended to be humorous. The foreman, who was engaged in scattering fertilizer, explained that the only disease that had troubled Nelson tobacco plants (and then not unduly) was tobacco mosaic. This virus is transferable by hand, and if it happened to be present in the tobacco a visitor was smoking and handling, and he were to touch a plant, that plant would be immediately infected with the disease.

He illustrated his argument by an experiment conducted recently by the station. Before planting an experimental plot he had deliberately handled a plant affected with mosaic. After planting one row he washed his hands and planted another row. He then handled the affected plant and planted another row before again washing his hands.

The plants in every row planted after handling the diseased plant were themselves affected. The alternate rows were strong and healthy.

The Research Officer, Mr. R. Thompson, who was trained for this work in America, confirmed this story when he was detailing the precautions that must be taken against diseases harmful to the crop. So far Motueka growers have been reasonably free from such worries and their immunity has been largely the result of painstaking experiment and gratuitous advice from the Research Station and Cawthron Institute. Though " No Smoking " may be the order of the day in some areas around Motueka, that precaution is helping to ensure an adequate supply of yellow, fragrant leaf in other parts of New Zealand and to safeguard the already promising future of the tobacco industry in the Dominion.

BASIC ENGLISH AS A WORLD LANGUAGE?

From *Newsweek*, September 20, 1943

DURING BRITAIN'S blackest hour, her mightiest weapon was the eloquence of Winston Churchill. From his potential vocabulary of from 50,000 to 60,000 words the Prime Minister drove an invisible sword again and again at the heart of the enemy until his besieged countrymen could arm themselves with new weapons of steel.

Last week Winston Churchill unsheathed another, simpler weapon—for peace. Far more important now than the eloquence of any one man, he told an assembly which had gathered at Harvard University to see him receive an honorary degree of Doctor of Laws, was an international language. A lasting peace and a more understanding world could come, he declared, from the universal adoption of Basic English, an 850-word highbrow pidgin which can be learned by a ninth-grade student in six months.

Report called for

The British Prime Minister's public praise was the biggest boost any international language had ever received. Already Churchill had persuaded the British Cabinet to set up a committee of Ministers to study Basic's success, its value, and the advisability of government-financing for its spread. Some of the things the report—to be made in three or four months—probably will reveal are that at the outbreak of war Basic was being taught in thirty countries; that Rockefeller Foundation and Payne Fund grants have permitted important research at Harvard by a distinguished Commission on English Language Studies; that some fifty books (including the New Testament in 1,000 words) have been translated into Basic; and that it is already being widely used by international organizations, in foreign trade, and in international radio.

Basic English was first "discovered" in 1920, when I. A. Richards (now at Harvard) and C. K. Ogden were writing "The Meaning of Meaning." Working at Magdalene College at Cambridge, they found that whenever they defined words they always came back to a few other words. Hence, they felt, "there might be some limited set of words in terms of which the meanings of all other words might be stated." On that basis they at least figuratively reduced the 600,000-word English language to 18 verbs, 78 pronouns, adverbs, and prepositions, 600 nouns, and 150 adjectives. At the same time, they pared the complicated grammar rules to seven—"the smallest number necessary for the clear statement of ideas."

Verbs and Nouns

The limitations of the Basic verbs—come, get, give, go, keep, let, make, put, seem, take, be, do, have, say, see, send, may, will—are overcome by combining with them the pronouns, adverbs, or prepositions. For example, Dr. Johnson's well-dressed verbs like abandon, abdicate, adjure, cede, desert, desist, yield, &c., all reduce to "give up." The nouns are divided into two groups: 400 of them, like account, education, mind, kiss, and wind are classified as "general," while the other 200—angle, bag, garden, pipe, skirt, ticket, worm, &c.—are "picturable." Likewise, there are 100 "general" adjectives: able, elastic, normal, young, &c., and 50 "opposites": dry, late, secret, white, and so forth.

One important grammatical change is the standardization of word order. For example, "I will put the record on the machine now" should read in only that way, with the subject first, the verb second and the predicate last. Beyond that, there are only seven rules to learn, such as that plurals are made by adding

" s," adverbs by adding " ly," and that degrees are indicated by the words " more " and " most."

Whether or not Basic will actually become a workable international language only the post-war world can tell. But, like all other such projects, opinion is divided sharply into two violent camps, with the arguments running like this :

Arguments for Basic

Proponents insist that as a world language Basic tops all other attempts because it stems from a tongue spoken by 200,000,000 people, has a background of spontaneous growth, and leads into a rich literature—none of which can be said for an artificial language like Esperanto. As the speech of the American melting-pot, regular English has bridged cultures, while Basic has spread over wide geographical areas (its greatest success has been in India, and even low pidgin has spread rapidly through the South Pacific and across Malaya). Other arguments : English can be made the easiest language for learners, and sloughing off endings for simplification doesn't mangle it as a Romance language would be mangled. Among its staunchest supporters are H. G. Wells, George Bernard Shaw, Julian Huxley, and Ivy Litvinoff.

Charges Against It

The bitterest charge against Basic—whose opponents come chiefly from the ranks of those who advocate another international language—is that it represents " cultural imperialism " (Winston Churchill said in his speech : " The empires of the future are the empires of the mind "). By this argument, Esperanto, or any of the other 325 projected universal tongues which do not have a base language, would be superior because they are not only impartial, but are broad enough to lend a brilliance of expression which its limited vocabulary denies to Basic. Churchill himself, like other English-speaking persons, would find the habit of leaving out words far more difficult than the learning of a new language.

With singular glee, its opponents like to point to the " clumsiness " of Basic. " The officer led his soldiers against the enemy, but the enemy stood firm " would, they said, read like this : " The person in military authority was the guide of his men in the army against the nation at war, but the not-friends stood solidly upright." But to this C. K. Ogden snapped back his own translation : " The lieutenant went in front of his men to the attack, but the other side did not give way."

What Basic English would do to the speech of the Master of Words is shown by this " translation " of a part of the Prime Minister's address at Harvard.

Churchillian English

I like to think of British and Americans moving about freely over each other's wide estates with hardly a sense of being foreigners to one another. But I do not see why we should not try to spread our common language even more widely throughout the globe and, without seeking selfish advantage over any, possess ourselves of this invaluable amenity and birthright . . . I am here to tell you that whatever form your system of world security may take, however the nations are grouped and ranged, whatever derogations are made from national sovereignty for the sake of the larger synthesis, nothing will work soundly or for long without the united effort of the British and American people. If we are together nothing is impossible. If we are divided, all will fail.

Basic English

I take pleasure in the thought of British and Americans going about freely one on the property of the other almost not conscious that they are of different countries. I do not see why we should not make the attempt at an even wider distribution of our common language over the earth, and, with no purpose to get the better of others, take up as our right the values that come from this move . . . I am here to say to you that whatever form or system of safe government for the earth you have, however nations are grouped and ranged

whatever authority is taken away from separate nations and their power cut down for the greater good of all, nothing will be done well or for long without the full force which will come from British and Americans working together united in their purpose. If we are together, anything is possible. In division, all will go down.

Parliamentary Committee

The Parliamentary correspondent of *The Times*, London, reported on September 8 that in his speech on receiving an honorary degree of Harvard University the Prime Minister mentioned that some months ago he " persuaded the British Cabinet to set up a Committee of Ministers to study and report upon basic English." The chairman of this Ministerial committee is Mr. Amery, Secretary of State for India, himself a distinguished linguist.

Other Ministers on the committee include Mr. R. A. Butler, President of the Board of Education ; Mr. Oliver Stanley, Secretary of State for the Colonies ; and Mr. Brendan Bracken, Minister of Information.

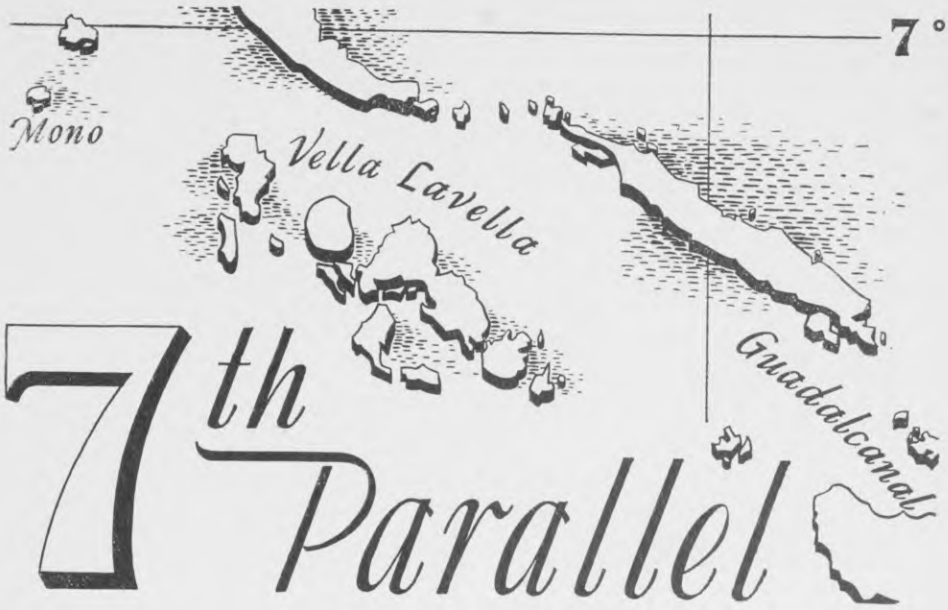
Since its appointment the committee has been collecting material and it will shortly hold its first meeting. While its procedure has not yet been decided, it is expected that the committee will be prepared to hear evidence from persons with special experience of the subject.

The committee's terms of reference are not known, but from the context of the Harvard speech the purpose would appear to be to inquire into the possibilities of extending the use of English as an international language. A similar idea was under consideration by the Government of that day just before the war began. Mr. Chamberlain, who was then Prime Minister, appointed in 1939 a committee of the Economic Advisory Council to examine methods of teaching simplified English to those who do not speak our language. This committee comprised a number of eminent educationists, and its chairman was Lord Ponsonby. The war broke out a month later, and the committee never met.

A main reason for the appointment of the former committee was that its findings might be of special value to the British Council in its work of spreading a knowledge of English in foreign countries. This work of the British Council has been continued and extended—particularly in South American countries—and it now includes the teaching of English to members of the allied services and civilian refugees in this country. The greater use of English as an auxiliary language was also envisaged in the recent recommendation of the Ministers of Education of the allied countries in Europe that English or French should be introduced into the higher forms of the elementary schools of their countries as a compulsory subject. Simplified English may also prove of great value in British colonial territories—with their population of more than 50,000,000—in developing the policy recently announced by Mr. Stanley for stimulating educational advance in preparation for responsible government. Methods of evolving a new technique of mass education in these territories to reduce illiteracy are now being investigated by the Colonial Office.

Progress in many Countries

Basic English, to which the new inquiry appears specially to relate, is a " pocket English " with a vocabulary of 850 words. Mr. Churchill mentioned that the first work on " basic "—otherwise British-American - Scientific - International - Commercial—English was written by Mr. Ivor Richards, now of Harvard University, and Mr. C. K. Ogden, of the Orthological Institute at Cambridge. It has made headway in many countries as a quick method of giving some facility of expression in English. There was recently published in this country a new translation of the New Testament into the 850 words of basic English, supplemented by only 150 additional words.



7th Parallel

By Sgt. E. W. Andrew

I WAS in camp in New Zealand when the newspapers announced that our troops had landed on Vella Lavella and, later, on Mono in the Treasury Group. After looking for these places on the little maps the newspapers published I decided they must be very small and unimportant. They didn't matter much to me, anyway, because I was going to the Middle East.

But then I was suddenly withdrawn from the Middle East reinforcement and detailed to travel as a photographer with an official party that was to inspect New Zealand troops throughout the Pacific area. So I began to think about those islands then; and what I thought of was those stories about coral reefs, swaying palms, tropic skies, and dusky maidens. I remembered, too, the terms which certain uncharitable people had used to describe our men in the Pacific—Coconut Bombers, Glamour Boys, Banana Pickers, and so on.

I soon found that the coral reefs are there all right, and the palm-trees, too; and I even managed to photograph an occasional dusky maiden. But what I hadn't thought about was the heat and the rain and mud and mosquitoes and the rest of the things contributing to the discomforts of life in the islands. These are the things I shall tell you about.

My first surprise was at Guadalcanal. As we flew along its coast I was astonished to find not a small island covered with palm trees, but a mountainous and heavily bushed island with small patches of open country that might have been grassed. It was a beautiful day and at 6,000 ft. up in the air we travelled in the greatest comfort

As we circled the landing-field I could see great activity everywhere. Roads almost obscured by dust from the heavy traffic ran in every direction between the rows of palms, and stores and equipment were in great piles under the trees. As we left the plane the heat was almost unbearable and the glare from the white coral landing strip made me thankful for dark glasses. I had to start work at once, and on this and subsequent days I worked in terrific heat. The slightest effort would make me wet through with perspiration.

I travelled from place to place in a jeep, always through heavy clouds of dust. It was impossible to keep clean, and I had little time for washing clothes. After I had had a bath in a bucket I was hotter than before. Going to bed meant taking off my clothes and lying down on the blankets, always after making sure that my mosquito net was firmly in place and that all the mosquitoes were outside. As a protection against malaria I was given half a little yellow pill each day of the week and a whole one on Sundays. At mess the food was tinned or dehydrated. We were lucky to see butter. Usually it was margarine or fat spread which I didn't like and so went without.

* * *

When a plane made of thin metal has been lying out in the Solomons sun for a time it becomes like an oven inside and the outside becomes too hot to touch. The only temptation to enter it is the thought of the coolness some thousands of feet above. At about 8,000 ft. the air inside the plane becomes pleasantly cool, and because of this the hops to Munda, Vella Lavella, and Mono were all too short.

* * *

Vella Lavella is a big island and, like Guadalcanal, mountainous and covered with dense jungle. New Zealand troops were here in strength and the work of building roads and establishing camps was making great headway. The camps were laid out with coral paths and were clean and tidy. Some of the paths had been lined with coconuts which had sprouted and grown three or four feet high. It looked as if a coconut dropped in the wrong place might become a tree almost overnight. One man had prepared a small garden and had acquired some dried beans from the cookhouse. In twenty-four hours these became plants an inch high, but from then on they grew tall and spindly and looked pale and unhappy. Like the gardener, it seemed, they didn't like Vella Lavella.

[E. W. Andrew Photo.

A New Zealand encampment on Vella Lavella.

[*Offjcial War Photo.*

Driver F. J. Mitchell, of Wyndham, Southland, digging in after the New-Zealanders had landed on Vella Lavella.

As we arrived on Mono a heavy shower of rain fell. The bush dripped, the half-made roads became streams, and water seemed to penetrate everywhere. When we walked our boots acquired thick coral soles from the paths, and when we drove the jeeps squelched through deep mudholes and slid over great roots. For nearly a fortnight our troops here had lived in the bush on iron rations, lying down to sleep on their ground-sheets and managing as best they could. Here was real jungle, dark and wet with few open spaces. Photographs without a flashlight were almost out of the question. The men were working hard to establish camps. Without shirts, they were covered in mud and filth. They had to hack their way through the bush, clearing paths, building bridges, felling trees, and removing roots and stumps. The jungle was so thick that a division could be concealed within a few hundred yards; yet the work of clearing it went on in terrific unrelenting heat.

I remember talking on Vella Lavella to a soldier who had something to say about conditions in the islands.

"It's this heat we don't like," he said, "and the rain and mud and mossies and other insects. We hate the sight of coconut-palms and the taste of dehydrated food, and we've nowhere to go if we get any leave. What we think about is good food and hot baths and iced beer back home. Tell any one who thinks we're enjoying this that any of us will gladly change places with him."

I certainly have no wish to see the Solomons again.

ARTISTS *in Uniform*

BY A KORERO STAFF WRITER

THE PICTURES accompanying this article are selected from the AEWS Art Exhibition "Artists in Uniform," which is expected to open in Wellington at the end of February. The works you see here have been chosen mainly because they will reproduce well on this kind of paper.

The suggestion to hold an exhibition was made in April last year, and the committee first met at AEWS headquarters in May. Its recommendations eventually found their way to units through routine orders. The results have been astonishing not so much the quality of the work, but the large number sent in—587 were submitted; 235 were accepted.

Purpose of Exhibition

The main purpose of AEWS in organizing this exhibition was to encourage men and women of the Services to draw and paint. That is why we didn't ask finally for war pictures. If a man found more interest in making pictures of neighbouring farm houses and villages than in making pictures of tanks and anti-aircraft posts, we were quite happy that it should be so. For us, the important thing was that we had succeeded in inciting him to make pictures.

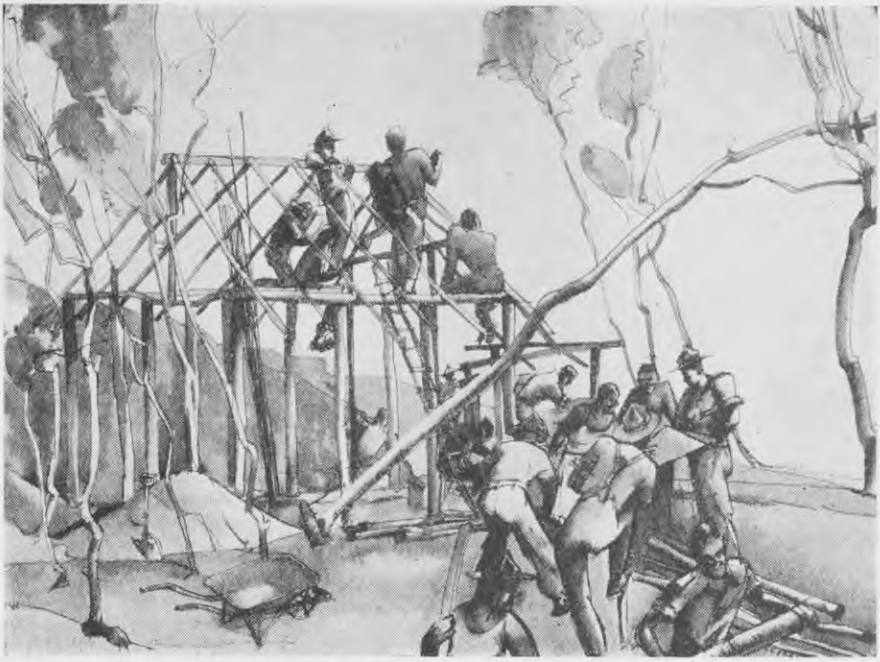
Nevertheless, we did hope and expect that some men and women would, in making their pictures, be chiefly concerned to send back reports of their surroundings and of the life they were living. We were not disappointed. This exhibition portrays in great variety and detail service life in New Zealand and the Pacific. The camera cannot replace the painter here, for the camera merely records. The painter does something more—he comments, however implicitly.

One of the best examples of this is the drawing of "Gargle Parade" at a WAAC camp reproduced here. If you saw a photograph of the same scene you would wonder why any one had troubled to take the photograph. But the drawing is both humorous and vivid. Years hence it will tell more about life in a WAAC camp than a whole album of photographs or many pages of descriptive writing.

Value of Pictures

It can be said of the exhibition as a whole that it conveys the serviceman's life and the places where he serves more vividly and instantaneously than either words or photographs can. When New Zealand war history comes to be written these pictures will put flesh on its bones.

When we organized this exhibition we had little idea what proportion of the pictures sent in would be good by ordinary artistic standards, the standards applied, say, in selecting pictures for the annual exhibition of the Canterbury Society of Arts. Nor were we greatly concerned over the question of quality. It remains to be said that the quality has been amazingly high, particularly when it is borne in mind that very few of the exhibitors are seasoned artists and that most of the pictures were painted in difficult conditions. Still fewer are by professional artists, because New Zealand society rarely gives a man enough support to enable him to write under "civil occupation" the word "artist."



Construction, by Sgt. L. A. Lipanovic.

Gargle Parade, by Bdr. E. F. Christie.

But remember when you go to this exhibition that the pictures have not been selected by the standards of an ordinary art show. Some of the pictures would not have been hung by New Zealand art societies. We let them past because, in spite of their crudities, the artist has managed to say something about service life. In the jargon of the films, his picture has a "documentary" value.

An interesting test of the quality of the best of these pictures is to compare them with the work shown in the exhibition of the work of British war artists which was shown in New Zealand in 1942. The British exhibition consisted of the work of official war artists; this exhibition is the work of amateurs—and of amateurs painting in such spare time as servicemen get. (Russel Clark is an exception; some of his pictures were done as an Army job.) Yet there is work in this exhibition—Norman Hutcheson, L. A. Lipanovic, M. Jillett, E. F. Christie are a few of the names that occur to one which would not have seemed out of place in the British exhibition.

Work has been submitted from the services in the Pacific and the Middle East as well as from servicemen in New Zealand. Later it is hoped that an exhibition will be held in which the Middle East will be more fully represented.

The proposal is that the exhibition should tour the larger towns, and if it is successful smaller towns should be included.

Natives Dancing, by Sgt. A. N. Goldwater.

Cathedral de Bourail, New Caledonia, by Sgt. L. M. Buick-Constable.

Palm Beach, Fiji, by Cpl. R.W. Starr.

INVASION OF EUROPE

Commanders of the Allied Forces

AFTER the recent conversations between President Roosevelt and Mr. Churchill it was announced that General Dwight D. Eisenhower, then Commander-in-Chief of the Allied forces in Italy, had been appointed Supreme Commander of the British and United States Expeditionary Forces organizing in Britain for the liberation of Europe. Other appointments announced were :—

Deputy Supreme Commander : Air Chief Marshal Sir Arthur Tedder.

Commander-in-Chief of the British group of armies under General Eisenhower : General Sir Bernard Montgomery.

Naval Commander - in - Chief under General Eisenhower : Admiral Sir Bertram Ramsay.

Air Commander-in-Chief under General Eisenhower : Air Marshall Leigh-Mallory.

Commander of the Strategic Bombing Force operating against Germany : Major-General Carl A. Spaatz.

Supreme Allied Commander in the Mediterranean theatres : General Sir Henry Maitland Wilson.

Deputy Supreme Commander in the Mediterranean and Commander of the U.S. forces in the Mediterranean : Lieutenant-General Jacob L. Devers.

Commander-in-Chief, Middle East : General Sir Bernard Paget.

Commander of the Allied Air Forces in the Mediterranean : Lieutenant-General Ira C. Eaker.

Commander-in-Chief of the Allied Armies in Italy : General Sir Harold Alexander.

Commander of the British 8th Army : Lieutenant-General Sir Oliver Leese.

General Eisenhower, now fifty-three, has been an officer in the United States Army for twenty-eight years. He went to West Point, the famous military training college, when he was twenty-one, and was commissioned as second lieutenant in 1915. Three months after the Japanese struck at the United States of America, General Eisenhower, then a Major-General, was appointed Chief of the War Plans Division of the American General Staff at Washington and later Assistant Chief of Staff in charge of the Operations Division. Here he would survey broadly the proposals for using

General Eisenhower.

Air Chief Marshal Tedder.

General Montgomery.

General Wilson.

General Paget.

General Alexander.

the resources of the United States and become acquainted with much of the detail.

In June, 1942, General Eisenhower went to London to take command of the U.S. forces then being assembled and trained in the United Kingdom. It was from this appointment that he was transferred to the Supreme Command of the Allied force which landed in North Africa in November, 1942, and went on with the 8th Army to take Sicily and land in southern Italy.

Air Chief Marshal Sir Arthur Tedder, General Eisenhower's deputy, and formerly Air Officer Commanding in Chief in the Mediterranean, has served in the army as well as the air force. Before he joined the Royal Flying Corps in 1916 he had already served in France as a subaltern of the Dorsetshire Regiment. Then, in 1928, he attended the Imperial Defence College. He also attended, in 1923–24, the Royal Naval Staff College; so, in addition to the opportunity which his own recent experience has given him to study the co-ordination of all services in warfare, he has had a training which should help him in his present command.

To Air Chief Marshal Tedder is given the credit for welding the R.A.F. battle forces into the army as a single striking force. You may remember General Montgomery's statement last month: "There used to be an accepted term 'Army Co-operation.' We never talk about this now. The Desert Air Force and the Eighth Army are one." Sir Arthur Tedder also introduced the functional division into tactical and strategic air forces, the first as flying artillery and the second to isolate the enemy on the battlefield from his supply bases. This division was so successful that it was later applied in Britain and India.

New attack methods for the tactical air force were also introduced by Sir Arthur Tedder. You will probably have read how pattern bombing enabled the R.A.F. in the Western Desert, by bombing simultaneously in formation, to ensure a hit on every 50 square yards of the target area. Against targets like moving tank formations this method gave a higher proportion of hits than precision bombing. Pattern bombing has also been used recently to pit flat ground with craters as cover for advancing infantry.

Again, Air Chief Marshal Tedder invented the "cab rank," which newspaper correspondents in Italy have recently been writing about. Fighter-bombers patrol the battlefield for twenty minutes each, attacking targets specified by the Army below on gridded maps. Air Chief Marshal Tedder exploited the quality of British aircraft in other ways, such as using the Hurricane as a tank-buster and apparently he will have new

scope for his inventiveness in Britain since, according to newspaper reports, for the final smashing of the Luftwaffe " the R.A.F. will have new fighters and bombers which will assert once and for all the superiority of British design."

General Sir Bernard Montgomery, who commands the British group of armies under General Eisenhower, became known to the world as the commander of the 8th Army, whose drive from El Alamein to southern Italy is described in another article in this issue. He is fifty-six years old.

Admiral Sir Bertram Ramsay, the naval Commander-in-Chief under General Eisenhower, organized the landing in North Africa and was decorated for his part in planning the operations for the landing in Sicily. He is sixty.

Air Marshal Leigh-Mallory, Air Commander-in-Chief under General Eisenhower, was the chief of the R.A.F. Fighter Command. He organized the air operations during the Dieppe raid.

Major-General Carl Spaatz, who commands the strategic bombing force under General Eisenhower, is fifty-one. He served with distinction with the American Air Force in the last war, and on America's entry into this war he was Chief of the Air Staff. He was sent to England to command the U.S. Air Force in Europe, and from there to North Africa to command the Allied air forces.

General Sir Henry Maitland Wilson, whose Middle East Command has been extended to that of Commander-in-Chief in the Mediterranean theatres, is sixty-two. His war service goes back to South Africa. Active commands he has held in this war have been in Egypt, 1939; Cyrenaica, 1941; Greece, 1941; Allied forces in Palestine and Trans-jordan and later Syria, 1941; General Officer Commanding the 9th Army in Palestine and Syria, 1941; the 10th Army in Persia in 1942; and the Middle East from February of last year.

Major-General Spaatz.

General Wilson's deputy, Lieutenant-General Jacob L. Devers, who has commanded the United States forces in Britain since last May, will lead the American forces in the eastern Mediterranean.

General Sir Bernard Paget, Commander-in-Chief, Middle East, was commandant of the Staff College, Camberley, when the war broke out, and in 1940 he became Chief of the General Staff, Home Forces. In 1941 he was appointed Commander-in-Chief, South-eastern Command, and when later in the year General Sir Alan Brooke became Chief of the Imperial General Staff, General Paget succeeded him as Commander-in-Chief of the Home Forces.

Lieutenant-General Ira C. Eaker, who will lead the Allied air forces in the Mediterranean, was formerly chief of the United States 8th Army Air Force in Britain.

General Sir Harold Alexander, who succeeds General Eisenhower in command of the Allied armies in Italy, is fifty-two. When the war broke out he was a Major-General and little known outside the service. Most people heard of him for the first time when he was given the task of organizing the last defences at Dunkirk. In March, 1942, he succeeded Lieutenant-General Hutton in command of the forces in Burma, and the retreat he was compelled to conduct has been described as a brilliant operation. His appointment as Commander-in-Chief, Middle East, was made after Rommel's push to El Alamein, and when the Eighth Army had driven the Germans out of Libya he became commander, under General Eisenhower, of the Allied armies converging on the Germans in Tunisia.

Lieutenant-General Sir Oliver Leese, the new commander of the Eighth Army, commanded the 30th Corps with General Montgomery from El Alamein until his appointment as successor to General Montgomery.

GLARE A THING OF THE PAST?

Polaroid may become post-war commonplace

From *Salt* Australian Army Education Journal

AT HARVARD University, U.S.A., in 1929, there was a shock-hair piercing - eyed twenty - year - old student named Edwin Land. He was always remaining late after class for discussions with his physics instructor. Their discussions centred around a light polarizer that Land had conceived as a boy in a rough home laboratory. The instructor influenced the University authorities to set Land up in a special laboratory.

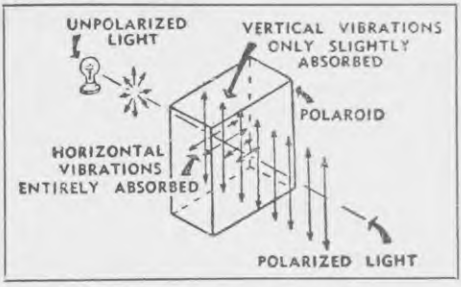
Land didn't take the trouble to graduate from the University. With Land's polarizer as a basis, the two men set out to manufacture a cellophane-like substance which they called polaroid. There are clear signs that, after the war, polaroid is going to play a considerable part in our daily lives.

Polaroid eliminates glare and thus intensifies colour. This has brought about the greatest advance in the improvement of human sight since the invention of spectacles. To-day it is used not only in those sun-glasses which are so hard to obtain, but also in microscopes, telescopes, and other optical instruments, in reading-lamps, in X-rays, in cameras, as windows in motor headlights, and in three-dimensional movies.

This substance is manufactured in sheets three-thousandths of an inch in thickness. It is both flexible and transparent. Composed of needle-like crystals (several thousand billions to the square inch), its peculiar quality is due to the fact that all the crystals lie parallel. Polaroid polarizes light waves—that is, it gives them a definite direction as they sieve through it.

Normal light hits the eye from every direction. In passing through the polaroid crystals the light ray is broken up. The effect the parallel crystals of polaroid have on light which passes through them may be more clearly understood by picturing a ray of light as a round metal bar and the polaroid sheet as a slot that flattens the bar into a ribbon when the bar is drawn through.

The effect of the process is amazing to the layman. Looking through a sheet of polaroid you see a new world. The every-day milk-bottle through polaroid will be ringed with rainbow-coloured stripes where the glass has been improperly annealed. A few caffein crystals through a polaroided microscope will look like a hothouse flower garden. Polaroid reveals defects in silk stockings or sausage-skins. It enables jewellers to tell the good stone from the artificial—at a glance. Your skin takes on new colour and texture—it makes the softest skin resemble a rugged part of the Owen Stanleys.



After the war no deep-sea fisherman will be complete without a pair of polaroid spectacles. They eliminate blinding glare from the surface and allow the eye to see deeply into water. Cameras equipped with polaroid can photograph a submerged submarine. It enables airmen to see the enemy plane hiding in the sun.

One of the most widespread future uses for polaroid will be in diminishing the glare of motor-car headlights. In proportion to mileage, the death-rate in night driving is almost three times that of daylight driving. The majority of these accidents are due to bad head-

lighting. The headlight danger can be overcome by adjusting polaroid sheets over headlights and in front of the driver's eyes. The lights come through only as two flat, luminous purple discs, but enough illumination is allowed so that, even behind the lamps, the details of the car's hood and fenders, people in the front seat, and even the license plate, can be seen. There is no glare.

Polaroid technicians have produced experimental three-dimensional movies in colour. To achieve the full effect, the audience must wear polaroid spectacles. Should these experiments be successful, they should enormously popularize the use of these eye-saving spectacles.

As a substitute for window-glass, polaroid may have a big future in post-war housing. Polaroid windows do not need shades or shutters. By sliding one sheet over another it is possible to control the amount of light passing through it—or to block out light completely.

Polaroid is likely to make living easier in many ways—not only in those that are realized to-day, but in many more. Land and his associates have not allowed success to deter them from further research and experimentation. They, and others, are continually finding new uses for this unique substance.

The story of Land's success is an unusual one in that, unlike most inventors, he has maintained control of his invention and shared in a large part of the profits from it. Much of Polaroid Corporation's success is due to his recognition of the value of a large research staff. Every year a large part of the Corporation's profits are earmarked for experimentation. Land's expert physicists and laboratory workers are continually investigating new uses for polarization, and are every year enlarging the demand for the new substance. Land and his carefully chosen associates have set an example to big business of what can be accomplished when inventive genius is closely allied to sound commercial planning.

AIR COMMUNIQUE

In this article, written at an advanced Mediterranean Air base in October last year, Kenneth L. Dixon tells how War News is born.

THE BIRTH of a brief communique from an advanced air base is an amazing operation.

When this was written—in October last year—North African Air Force communiques were made up in a crude wooden hut hastily flung up in the midst of a clump of mimosa trees. Combining the operations headquarters of the NAAF and the Mediterranean Air Command, this advance post has to figure on all aerial blows fired from this theatre.

It is evening. Planes are landing in scores of fields in North Africa, Sicily, and Italy. Their day's fighting done, the pilots check in their various squadron wings and groups to tell their story. Those points in turn report to the three Commands—Bomber, Air Support, and Coastal.

From these commands reports like brief newspaper bulletins are flashed to the command post at the advanced base, first telling of the planes' return, the score and the success of the day's operations.

Later in the evening more details follow. Finally, at night, each command checks in—by radio or telephone—a complete summary of the day's operations, listing in detail the various errands, the score of victories and defeats, the numbers of enemy planes knocked down, and the numbers of Allied planes and men failing to return.

Inside one blacked-out hut the light burns through the night. A combined operational summary, condensing all reports, is being prepared under the direction of the NAAF officer in charge of despatches.

In the morning one of the Generals checks the summary. Military intelligence men use the more complete reports to keep their picture of the operations up to date.

Then the censor writes the communique. A pilot himself, he must decide how much of the summary can be released without affecting military security. A communique is born.

EIGHTH ARMY

It is less than fifteen months since the Eighth Army, after repulsing attacks on the night of November 1–2, 1942, launched a strong offensive on a 4,000-yards front west of El Alamein. This was the beginning of the final advance which enabled G.H.Q. to announce, on the evening of November 4, that "the Axis forces in the Western Desert, after twelve days and nights of ceaseless attacks by our land and sea forces, are now in full retreat."

THIS BREAK-THROUGH remains the most spectacular achievement of the Eighth Army while commanded by General Sir Bernard Montgomery, who is now commander of the British group of armies under General Eisenhower, Supreme Commander of the British and United States forces in the west for the liberation of Europe, but the Eighth Army has taken a leading part in every important phase of the Mediterranean war since then. The New Zealand forces in the Middle East were a part of the Eighth Army in its drive from El Alamein through Tripolitania and Tunisia. They were not with the Army when it landed in Sicily and southern Italy, but they have since rejoined it and are assisting in the drive up the Italian Adriatic coast.

Telling the story of the Eighth Army's advance, the military correspondent of the *Sydney Morning Herald* remarked that military history could produce few cases of such spectacular and continuously successful progress under so varied circumstances. In the space of a single year General Montgomery's men had to fight under almost every conceivable set of conditions, except those of a tropical jungle.

Losses and other factors have led to inevitable changes and replacements. The Ninth Australian Division, which played so big a part in cracking the El Alamein Line, had not, for example, the satisfaction of participating in the victorious advance, owing to its recall home. But the 51st Highland Division, which was re-formed after the Battle of France, and joined the Eighth Army shortly before El Alamein, where, in Mr. Churchill's words, it "bore the brunt" of much of the fighting, has been in the forefront of every major engagement since. The 50th (Northumbrian) Division, the 44th (Home Counties) Division, and the Fourth Indian Division have similarly gone through the whole campaign, as have also certain armoured units.

After their defeat at El Alamein, Rommel's twelve divisions were driven rapidly westwards. By November 11, following the capture of Sidi Barrani

To Officers and Men of Eighth Army

SPECIAL MESSAGE

1. The enemy is now attempting to break through our positions in order to reach CAIRO, SUEZ, and ALEXANDRIA, and to drive us from EGYPT.

2. The Eighth Army bars the way. It carries a great responsibility, and the whole future of the war will depend on how we carry out our task.

3. We will fight the enemy where we now stand; there will be NO WITHDRAWAL and NO SURRENDER.

Every officer and man must continue to do his duty as long as he has breath in his body.

If each one of us does his duty, we cannot fail; the opportunity will then occur to take the offensive ourselves and to destroy once and for all the enemy forces now in EGYPT.

4. Into battle then, with stout hearts and with the determination to do our duty.

And may God give us the victory.

B. L. Montgomery,
Lieutenant-General.

by the 60th Rifles, forward elements of the Eighth Army had bitten deep into Cyrenaica on the heels of the fleeing Afrika Korps. General Pienaar's South Africans marched into Tobruk on November 13, and avenged Rommel's capture of the Second South African Division there some months previously. In three weeks the Eighth Army had pushed onwards for 300 miles, and, although slowed up by winter rains, occupied Benghasi on November 20.

After a regrouping in front of El Agheila, where Rommel had prepared a trap, but wisely decided in the event not to stand and fight, progress along the Tripolitanian coastal road was resumed. The first fortnight in January was given up to new preparations for an assault against the Wadi Zemzem positions, launched on January 15. Success here opened the way to Tripoli, which General Montgomery entered on the morning of January 23, after pushing the enemy back 1,350 miles in eighty days.

From this moment the story of the Eighth Army merges with that of the British and American forces advancing from Algeria in the battle for Tunisia, General Sir Harold Alexander, now commander of the Allied forces in Italy, assuming command of both converging army groups. Armoured cars of General Montgomery's advance guard crossed from Libya into Tunisia six days after the fall of Tripoli, and the Eighth Army prepared to force the Mareth Line.

Once again its leader began that period of careful consolidation without which he has never attacked. Rommel's counter-offensive early in March was beaten back, and on the night of March 20–21, the Eighth Army launched a full-scale assault on the Mareth Line from Medenine to the sea. A bridgehead was established after thirty-six hours of "fighting more intense than anything in the Battle of Egypt," and the Mareth Line was ultimately broken, after an immortal stand by the 50th (Northumbrian) Division against the whole weight of the Fifteenth Panzers.

A savage fight was necessary before the Seaforths and the Camerons carried the Wadi Akarit positions at the point of the bayonet, and made possible the junction with the Amercan 2nd Corps on April 7, midway between Gafsa and Gabes. Troops from the Home Counties showed up especially well in this phase of the fighting towards Sfax, which fell on the morning of April 10, after an advance of 75 miles from the Wadi Akarit in four days. It was here that General Montgomery issued his famous Order of the Day, "Forward to Tunis and drive the enemy into the sea!" but heavy fighting was to take place before the Enfidaville Line was smashed.

The nature of the coastal gap and the massing of strong German forces in front of the Eighth Army prevented it from reaching Tunis in the vanguard, but in the wider strategical picture the German expectation that the main attack would come from General Montgomery, enabled General Alexander to make dispositions which facilitated the occupation of Tunis and Bizerta. Even so, the surrender of the 15th Panzers was made to their old adversaries of the 7th Armoured Division, and the Eighth Army played a prominent part until the last day's fighting in the Cape Bon Peninsula on May 12. Since the crossing of the Tunisian border, the Army had suffered 11,500 casualties.

The Eighth Army's next exploit was to participate in the initial invasion of Sicily. On July 10 the desert-trained troops undertook a new type of operation by landing from the sea and swiftly occupying Syracuse. This time the Eighth Army included not only the Northumbrian and Highland divisions, but the British 5th Division and nine Canadian regiments. After rapidly pushing on to the Monte Lauro massif overlooking the plain of Catania they encountered the crack Hermann Goering and Fifteenth Panzer divisions above Augusta. Bitter fighting slowed up progress towards Catania, and the town did not fall until August 5. The task of the Eighth Army was to hold and extend the Catalanian hinge against the best German troops while other Allied forces swept across the northern part of the island. On August 9 General Montgomery's men linked up with the American

Seventh Army, and proceeded to force the difficult coastal road. The Eighth Army was near Taormina when the fall of Randazzo made an enemy retreat into the north-eastern tip of the island inevitable, and it was only eight miles south of Messina when the American Third Division hammered a way into the town on August 16. Some idea of the heavy fighting in the thirty-seven days of the Sicilian campaign may be gauged from the fact that the British and Canadians had 31,158 casualties.

After resting and consolidating his forces, General Montgomery informed his troops on the night of September 2 that, "To the Eighth Army has been given the great honour of being the first troops of the Allied armies to land on the mainland of the Continent of Europe." The same night the veterans of the desert moved across the Straits to the Calabrian peninsula.

Seven days later other Eighth Army units landed at Taranto and swept over the heel of Italy. In the face of little opposition, they hastened to link up with General Clark's hard pressed Fifth Army at Salerno, while other detachments took the east coast route to the Foggia plain.

By storming Potenza on September 22 the Eighth Army was able to change the entire situation on the right flank of the Fifth Army, while the occupation of Foggia six days later made possible a continuous line across the peninsula.

General Montgomery had given Berlin as the final destination of his troops, and, in his message on May 14, on the conclusion of the African campaign, said simply: "Together, you and I, we will see this thing through to the end." But Mr. Churchill, as usual, has spoken the ultimate word. Speaking at Tripoli in February, he told the veterans: "It will be a great honour to be able to say in the years to come, 'I marched and fought with the Eighth Army.'"

●

This boat, abandoned by the Japanese, proved invaluable in enabling New Zealand patrols in Vella Lavella to cross a deep river.

CARS

Design after the War

A leading American industrial engineer, quoted by EMMET CROZIER in this article from the New York Herald Tribune, says the post-war motor-car will not be radically different in appearance and performance from the 1942 models. But it will probably be lighter, stronger and roomier, and the engine may be in the rear.

WAR BROUGHT a curious breathing spell to the automobile. In a period and an atmosphere which has produced amazing progress in aviation, development of the automobile has perforce stood still. Like that childhood game in which the players on signal suddenly assumed statue-like attitudes of arrested motion, the passenger automobile industry froze a few months after the attack on Pearl Harbour and has remained in the awkward and unaccustomed attitude of suspended animation.

When the war's end breaks this spell of immobility we know that production will be resumed as quickly as possible on 1942 models and that all the new cars produced during the six months to a year after the war will be the familiar models of two years ago.

Meanwhile, the whole motor industry will be in a ferment of activity, designing, testing, building mock-ups, and preparing sales campaigns for the post-war automobile which the American public expects and for which its cheque-book will be ready.

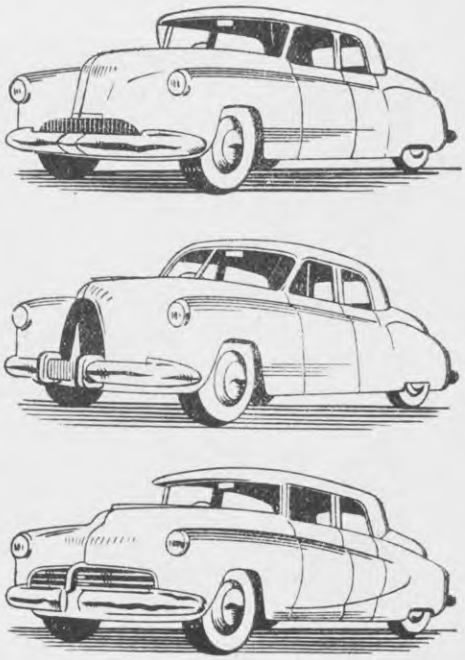
Raymond F. Loewy, noted industrial engineer who is credited with developing the streamline in modern industrial design and one of the first to apply its principles to the automobile, has made some preliminary studies for the post-war car. Discussing it, he begins with the observation that there probably will be no dramatic, glamorous departure from the automobile we have known.

It Will Be Superior

The post-war car, Mr. Loewy says, will not have folding wings to take it soaring through the air over detours or traffic jams; it will not be able to swim lakes or paddle across rivers. In appearance and in performance the post-war automobile will not be radically different from the 1942 model—a fairly good car—but in a number of respects it will be definitely superior.

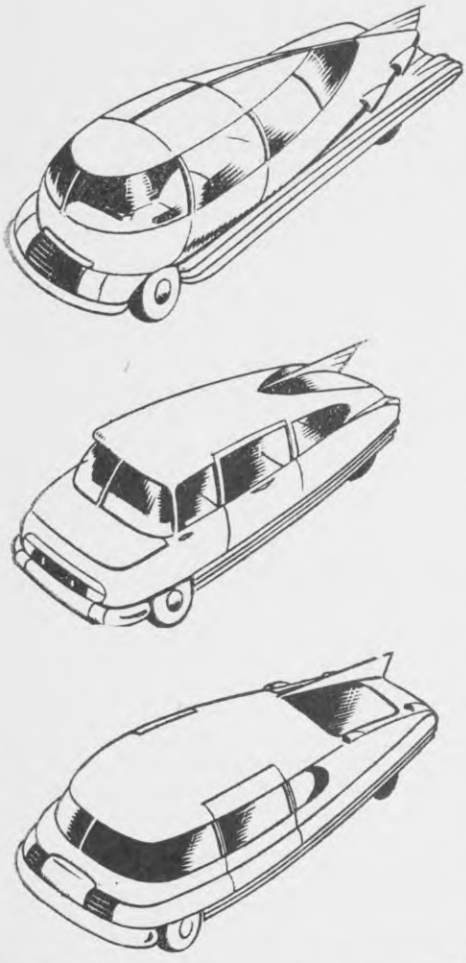
The post-war car will be lighter without sacrificing strength. The average 1942 car of popular make weighs 2,950 lbs.; the post-war automobile should weigh 2,000 to 2,400 lb. Considerable weight can be saved through the use of aluminium, magnesium, and light alloys. Hood panels and door panels will be made of lighter materials, and a further reduction is needed in the unsprung weight of the car.

Visibility will be greatly improved in post-war designs. Driver and passengers—but especially the driver—will be able to see more of the road ahead and



the traffic problems developing on both sides of the road, as well as in the rear. Smaller hood, redesign of the windshield, adjustable seat for driver and larger areas of transparency in the sides and rear of the car will increase the visibility from a third up to a half, Mr. Loewy estimates.

Where the present driver's seat is adjustable (on some models) forward and backward to accommodate long and shorter legs, the new car seats may be adjustable for height. This can be done with a device similar to the elevator in a barber's chair.



The post-war car will probably look more like those shown on the opposite page than those above.

Engines may be in Rear

Perhaps the most important changes now engaging the attention of automobile designers are those relating to the engine. Mr. Loewy foresees the possibility of transferring the power plant from its present place under the hood to the rear, where its propulsive force can be communicated directly to the rear axle.

This is not a new idea. The Czech Tatra and the German Mercedes Benz have developed fairly successful automobiles with rear-end power plants, and the French Citroen and American-built Cord hooked the engine to front-wheel drive. But these cars were more expensive and were not so rugged or dependable in operation.

Remote-control equipment developed for the operation of ball turrets of Flying Fortresses and other electrical devices perfected for aircraft operation can be applied to rear-end engine control in the post-war automobile.

Mr. Loewy also contemplates a more efficient engine installation, which would enable a garage mechanic to remove the power plant in ten minutes or less by unscrewing six or eight bolts, and substituting a service engine for temporary use while the old one is being overhauled, tested, and repaired. Present service techniques take the automobile out of use even for minor repairs, and the owner's insistence upon speed in the work frequently makes thorough inspection and careful craftsmanship impossible.

In body design, Mr. Loewy is ready with some arresting new ideas.

Roomier Bodies

His sketches show slightly larger and roomier bodies for the post-war automobile, with the greater width in the front seat. One Loewy suggestion is that the purchaser have the option of a number of seating arrangements: One grouping, designed for a large family, would seat four in front, two in the

rear ; for a man and his wife the same front space could be utilized for two commodious, heavily upholstered seats with comfortable arm rests. The wider, rounded prows, shorter hoods and bodies tapering toward a narrow rear would conform more closely to the streamlined ideal of the egg than the present models.

According to Mr. Loewy, transparent plastics may be used for side and rear windows where there is relatively little abrasion, but shatter-proof glass, less easily scratched and marred, will continue to be preferred material for windshields.

Mr. Loewy, whose studies for post-war development include helicopters, passenger planes, new railroad equipment, trans-Atlantic and bay steamers and buses, believes the automobile of the future probably will cost more than present models, but will be more economical in fuel consumption and more efficient generally.

Engineers' Views

His views coincide generally with those of A. T. Colwell, vice-president of Thompson Products, Inc., of Cleveland, who recently completed a technical survey of post-war automotive engineering. Mr. Colwell found the consensus to be :—

1. That the future trend of automobile design will be toward economy rather than performance, because of greater emphasis on petroleum conservation, increased general taxation, inflation, higher fuel costs and probably higher automobile costs.

2. That the very large automobile is on the wane—the buyers of higher-priced cars have been heavily affected by taxation.

3. That present comfort, safety, performance, and size of the medium-sized car should not be sacrificed any more than necessary.

4. That the very small European car is not foreseen, unless absolutely forced by economic conditions, and would not be acceptable to the American public.

5. That automobiles must be produced with fewer man-hours.

Mr. Colwell's study indicated that only about 10 per cent. of this nation's total high-octane fuel capacity—now wholly devoted to military needs—will be used by aviation after the war. The excess capacity will be available for automobiles if it can be economically utilized.

Contribute to Korero

All men and women of the forces are invited to contribute to *Korero* articles, sketches, photographs, or black-and-white drawings. No written contribution should be more than 1,500 words. Ideas for articles and drawings will also be welcomed. The address is D.A.E.W.S., Army H.Q., Wellington. Mark the envelope *Korero* in one corner.

Education officers and Unit Education officers are asked to make sure that *Korero* circulates. Don't let copies accumulate on orderly room shelves and in drawers.

ENCYCLOPAEDIA, A LONG-TIME NEWSPAPER

By DOROTHY KAHN, in the *Christian Science Monitor*

WHEN A "society of gentlemen" in Scotland, just 175 years ago, published a set of three leather-bound books "to diffuse the knowledge of science" they little realized what they were starting. For how could they have foretold that after a century and three-quarters of continuous growth their encyclopædia, developed into a 35,000,000-word library, would celebrate its 175th birthday by being given for publication to a university in the United States (a nation which did not yet exist), and that the donor would be an American mail-order house?

The "Encyclopædia Britannica" has come through its adventures with ever-growing prestige. Now its new owner, the University of Chicago, hopes to accelerate its gradual improvement.

There won't be any radical change in policy in the management of the Encyclopædia, however. People who buy it seem to like it just as it is, big words and all. The policy of inviting the world's most eminent scholars to contribute articles will be continued, although perhaps there will be a trifle less emphasis on famous names. On the whole, however, the new board of trustees is eager to retain the present editorial and promotional set-up which its members think is proving its worth in the quality of the publication.

The only change of importance is that the university faculty will become the official advisory staff of the Encyclopædia, supervising the continuous revision which the set of books undergoes. Walter Yust, former newspaperman who has edited the Encyclopædia with distinction for a decade, will continue to boss the job. William Benton, vice-president of the university and chairman of the Britannica board, is only too glad to have Mr. Yust stay on. At the same time, Mr. Yust, an open-minded, enthusiastic person who goes out of his way to get criticism, welcomes the university as a councillor. He thinks the union of the Britannica and the university a happy one, since Chicago from its earliest days pioneered in extension courses for those beyond its campus.

Mr. Yust does not, however, minimize the value of the Encyclopædia's sojourn with the mail-order company. He feels it owes its present sound financial condition to a Sears, Roebuck, and Co. official, E. H. Powell, who now has given up that business to become President of the Encyclopædia Britannica. It was Mr. Powell's bright idea to give away sets of the learned publication to persons who "stumped the experts" on the radio programme, "Information, Please," thus helping to make its name a friendly word. What's more, Mr. Powell ended a publication policy that had caused the owners of the Britannica plenty of worry all down the years. This was the policy of putting out completely revised editions at widely separated intervals. For experience showed that when a new edition was in preparation—and it took ten years or so to do the job—no one wanted to buy new sets. "We'll wait till the new edition is out," was the general attitude. Meantime, with sales at a standstill, the company had to spend about $2,000,000 for the revision. None could stand it. Mr. Powell changed all this. There are no more spectacular new editions. Instead, about 10 per cent. of the work is revised each year. At the end of a decade, a complete revision has been accomplished—and there has been no interruption of business. The editorial staff, too, has been able to work more calmly.

It was during one of these periodic crises that Sears acquired the Encyclopædia. During the first World War

Sears put a "handy edition" of the work into their catalogue as a saleable article of merchandise. Julius Rosenwald, president of Sears, and a man deeply interested in promoting education, thus got acquainted with the Encyclopædia publishing business. When, in 1920, the company then owning Britannica went bankrupt and the plates were threatened with destruction, Mr. Rosenwald persuaded his company to put $1,000,000 into the business and save it. Eventually Sears invested $2,500,000 in the Encyclopædia. For the last five years it has made money for the company and proved itself a sound investment.

Notwithstanding that fact, Sears didn't want to maintain the responsibility of publishing so scholarly a work. The president of Sears calls the relationship "anomalous and accidental." After all, Sears' business is selling farm implements and radios and clothing and such things. So, even though the prestige of the publication among scholars had grown under mail-order-house management, the board of that organization offered it to the University of Chicago as a gift.

Now the university finds itself owner and publisher of the "Encyclopædia Britannica Year Book," the "Britannica Junior," and the "Britannica World Atlas." At the same time it has acquired a business with some 600 door-to-door salesmen, a publishing staff of 35, and with some 3,500 editorial contributors—leading scholars of the world.

But it has acquired something more than a paying business. It has accepted a grave responsibility as the compiler of knowledge for the English-speaking peoples. The Britannica is not now, and never has been, English. The three gentlemen who originated it were Scots and were thinking, no doubt, of the Empire when they called it Britannica. Now there are distributing companies in England, Canada, and in South Africa. Before the war about one-third of the sales were in the dominions, two-thirds in the United States.

The publishers of the fourteenth edition recognized its international scope when they dedicated it to "two heads of the English-speaking peoples," Franklin D. Roosevelt and His Majesty George VI.

The editorial staff has an elaborate system of checking, double-checking, and rechecking to keep the work accurate. Scholars, experts in their fields, read what other scholars have contributed and do not hesitate to criticize. The editor strives for accuracy and impartiality, but world events have a way of upsetting his efforts. Of course, some articles never go out of date. Mr. Yust doesn't have to worry about the timeliness of Macaulay's famous article on Samuel Johnson, written for the Encyclopædia. That is literature. Nor does Professor Albert Einstein's article on his own theory of space-time, which he wrote for Britannica, need editing.

On the other hand, authors of historical and economic articles who may be leaders in their fields can go out of date. The eminent economist who wrote an article in the prosperous 'twenties, saying there would be no more depressions, was a big name in his field, but his statement caused the publishers some embarrassment, when they came across it during the difficult days after the crash of '29.

Because time does change men's ideas and knowledge, sometimes rapidly, the publishers see to it that every article is read critically once every five years, by some one who knows the subject thoroughly. They would rather catch outmoded statements and errors themselves than wait for some vigilant reader to write in. Criticism, however, is always welcomed. When Mary Beard, historian and feminist, complained to the editor that women didn't get their share of biographies, Mr. Yust checked up and found she was right. Of the 13,000 biographies in the work, less than 800 were of women. Mr. Yust immediately invited Mrs. Beard to direct his staff in determining which feminine notables had been omitted and should be included in future printings.

Some corrections are of minute errors. A Chinese scholar wrote in the other day to note that the apostrophe in a certain Chinese proper name faced the wrong way.

"The correction will cost 78 cents," said Mr. Yust. He thinks it worth it.

A research staff of the Britannica is kept busy reading current news to select matter for the Year Book. The annual, in turn, is sifted for material to go into the Encyclopædia.

"We think of the Encyclopædia as a long-time newspaper," says Mr. Yust.

Through its 175 years of experience, the editing techniques of the Encyclopædia have been developed to a high degree of efficiency. William Smelley, the first editor, frankly did a scissors and paste-pot job. Except for the beautiful line drawings and engravings of Andrew Bell, one of the early owners, there was nothing original in the three volumes. Mr. Smelley gave credit to a long list of authors from whom he had 'borrowed" his information.

Now, with 3,500 contributors, editing is a complicated matter. To make sure that the facts in the thousands of articles are not contradictory, a system of cross-indexing has been devised which would delight an efficiency expert. Although Mr. Yust himself has never read the whole Encyclopædia, with his card index he can answer just about any question about anything in the set. Thanks to the cards, when a fact is changed in one article it can be quickly corrected in every other one which may use it.

●

THE MOUNTAIN PASSES IN ITALY

THE LOFTY alpine passes over the roof of Europe with their snows and tunnels, are the Germans' only means of heavy communication through the Alpine Wall which stands at their backs in Italy.

Some are the bastions of Switzerland and its superb, democratic neutrality. Through these, only economic supplies pass from Germany to Italy as befits a strict and legal neutrality.

Over others lie the historic routes of conquerors in their invasions of Italy. Through these same passes the invader, no longer a conqueror, inevitably returns.

All the principal rail-lines between Italy, France, Switzerland, Austria, and Yugoslavia are double tracked. Only a few lines of secondary importance, like the Centovalli, and the Bernina lines between Italy and Switzerland, are single. There are six well-known railway-lines—the Riviera, the Mont Cenis between Italy and France, the Simplon and the St. Gotthard between Italy and Switzerland, the Brenner and the Sudbahn between Italy and Austria and Yugoslavia.

In addition to these are the lesser-known lines which still are able to take a good deal of traffic, and have a very real military importance in the strategy of the days ahead. These are the Breil (or Colle di Tenda) line between Turin and Nice, the San Candido (Innichen), the Tarvisio (Tarvis), and the Karawanken line, all between Italy and Austria, with the last two going also to Yugoslavia. Finally, a line from Fiume to Yugoslavia.

There is also some confusion about the roads crossing the Alps. Some of them lead as high as 8,000 ft., and many think they are inaccessible in winter-time, but they are kept open the whole year round, including the most important of all, now, the Brenner Road (4,200 ft.). Some of these roads follow the main railway-lines. Others, which in normal times are kept open the whole year round are—Pass Du Mont Genevre (6,100 ft.), the Maddalena or Argentera Pass (6,600 ft.), both between France and Italy; the Maloia Pass (6,000 ft.), in Switzerland, but starting on the Italian side; the Spluegen Pass (7,000 ft.) between Switzerland and Italy, usually open in winter-time for transit of sleds only, but not difficult to keep completely open; the Resia Pass (5,000 ft.), and the Finstermunz Pass, which follow each other a very short distance on the same road and provide a communication between the Austrian and the Italian

Tyrol, also the Mont Croce or Plocken Pass (4,500 ft.), which serves as a link between Carintia on the Austrian side and the Veneto on the Italian side.

Finally, at the eastern slopes of the Alps, we have a few roads leading to lesser altitudes than the others, but providing communication between Yugoslavia and the parts Italy annexed after the last war. The most important are the roads between Tolmino (near the famous Caporetto, where Italy suffered a defeat in 1917) and Ljubljana in Yugoslivia, and a few other roads leading from Trieste into Yugoslavia. All these roads are open the whole year round. Another little link is a small railway-line starting from Dobbiaco, which is the next station after San Candido and going down to Pieve di Cadore and finally to Belluno.

Key to map (d.t., double track railway, s.t., single track) : 1, Riviera, d.t. ; 2, Breil ; 3, Maddetena Pass ; 4, Mont Genevre Pass ; 5, Mont Cenis, d.t. ; 6, Frejus Pass ; 7, St. Bernard Pass ; 8, Simpton, d.t. ; 9, Centovalli, s.t. ; 10, St. Gotthard, d.t. ; 11, Spluegen Pass ; 12, Bernina, s.t. ; 13, Maloia Pass ; 14, Resia and Finstermunz Pass ; 15, Brenner Pass, d.t. ; 16, Dobbiaco-Belluno ; 17, San Candido ; 18, Mont Croce or Ploctmen Pass ; 19, Tarvisio ; 20, Karawanken road and railway from Trieste to Austria and Yugoslavia ; 21, Road, Tolmina to Ljubljana.

E. V. PAUL, Government Printer, Wellington