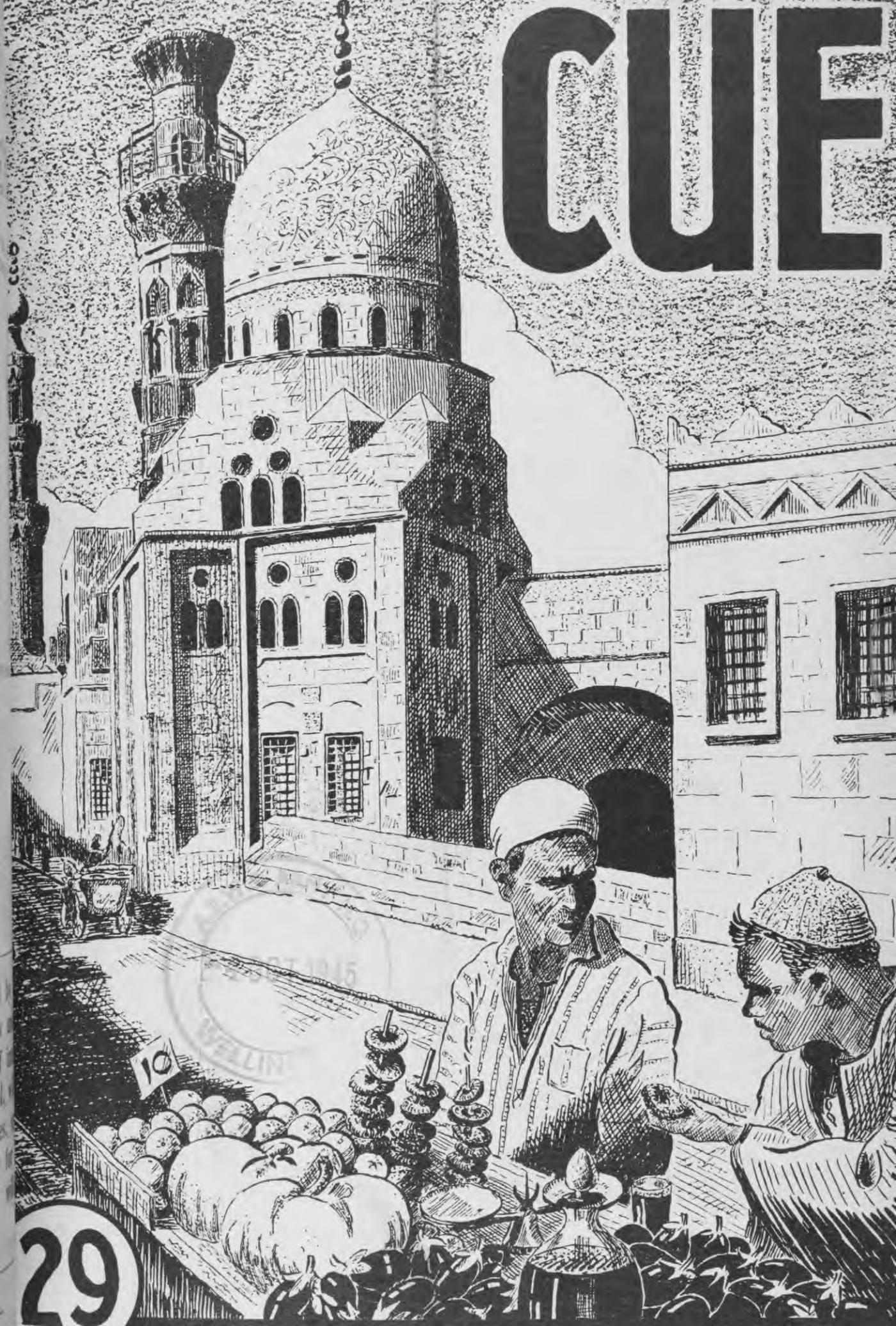


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"SALEEDA GEORGE"

ALMOST every member of 2 NZEF has spent some time in Cairo and has made the acquaintance of the Cairene—the ubiquitous George Wog and his family. In all probability, he has wandered down the Mouski, gazed at the Blue Mosque, climbed the Pyramids, inspected the Museum of Hygiene, spent some memorable moments at a cabaret, drunk numerous bottles of Stella, and perhaps had the vicarious thrills of a Birka picquet. He has picked up a smattering of Arabic, learnt a little of Egyptian ways, rubbed shoulders with peoples of almost every nationality, and gained the feeling that he has become almost overnight a cosmopolitan, almost a man of the world.

But few that are left in the Division today have achieved more than a fleeting acquaintanceship with Cairo and its people. Cairo is too vast, too old, and too cosmopolitan to know intimately in a few weeks or months. It is too steeped in the history not only of past centuries but of past civilisations. The great city has kept abreast of the times—it is as modern a city as could be found anywhere—but it has never entirely thrown off the cloak of the past—a cloak that is embellished with the gold and silver and precious jewels of historical events. For Cairo today still breathes of the greatness of its ancient kings, of Persia, Greece, and



Rome; and there still exist memories of the warring Arab and the Turk, the invading French and the British.

Unfortunately, the soldier is not given the same chances of appreciating this picturesque cloak as the leisured civilian tourist, for he sees too much of the dirty underclothing. But it is safe to say that most New Zealanders in Cairo have at one time or another felt the spell of the ancient civilisation of Egypt as captured for all time in the Pyramids, the Sphinx, and the ancient monuments. Cairo, which to most people is the equivalent of saying Egypt, is one of the storehouses of the world's art treasures and a link with civilisations that existed several thousand years ago. And yet the city did not come into existence in its present form until thirteen centuries ago when the Arabs conquered Egypt.

Egypt has a long record of greatness and of domination. Its history is divided into three distinct phases—Paleolithic up to 10,000 B.C., Neolithic up to 3500 B.C., and the Dynastic period up to 331 B.C. Even prior to the Dynastic period when the

Pharaohs ruled the land, the Egyptian had reached a fairly high degree of civilisation. They worshipped many gods and animals and believed steadfastly in a future existence, for which reason they buried with the body food, furniture, and weapons. Already the Egyptians of those days had shown

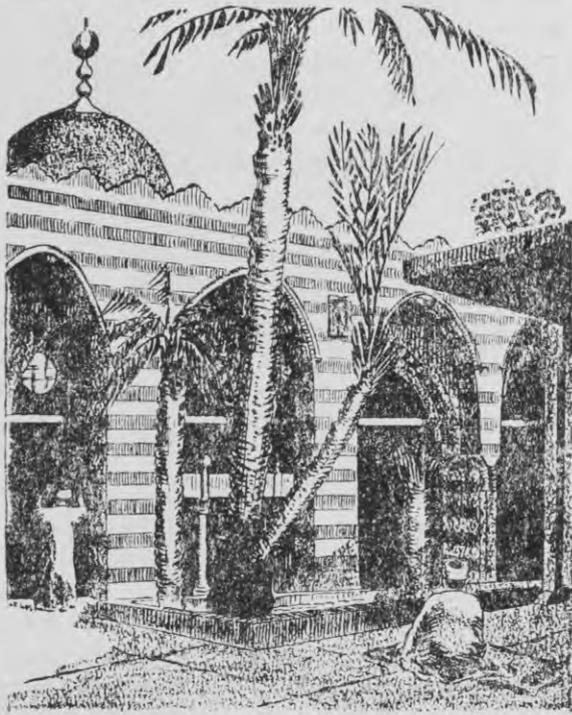
and a human head modelled on that of the reigning king is probably the most famous monument in the world.

It was in the Fourth Dynasty that the Priests of Ra exerted a powerful influence on the pharaohs, so much so that they forced the kings to insert "Ra" in their names. From that time onwards, each king of Egypt, including the Persians, Macedonians, and Romans, called himself "Son of Ra". The priests had their headquarters in the old Heliopolis, or Mataria as it is now known. It was at Heliopolis that Ubertsen I reconstructed a large temple and set up there a pair of red granite obelisks, one of which is still standing.

From 1700 B.C., the power of Egypt began to fade, although it was during this period that art and architecture flourished and Egyptian civilisation was at its height. In 525 B.C. the first of a long succession of successful invasions of the country began. The Persians were its first conquerors, and they ruled for 200 years, until displaced by Alexander the Great. Under Alexander, Egypt flourished and became the centre of culture and commerce of the civilised world. It was during this period that chemistry was born, later to be developed by the Arabs as a science to serve mankind.

The Greeks gave way to the Romans when Antony and Cleopatra's bid to conquer the known world was frustrated by Octavius. When the Roman Empire collapsed, Egypt became part of the Byzantine Empire, and was a stronghold of Christianity. In 641, the Arabs stepped in, and gradually Egypt became an Arab country. The Arab language and the Mohammedan religion were adopted. A small minority of the people remained Christians, and their descendants are the present day Copts.

There were three Mohammedan capitals of Egypt before Cairo was founded. The first was El-Fostat, to



Moslems at prayer in the courtyard of the Blue Mosque

great skill with their pottery and their drawing, a skill that has remained with them throughout succeeding ages.

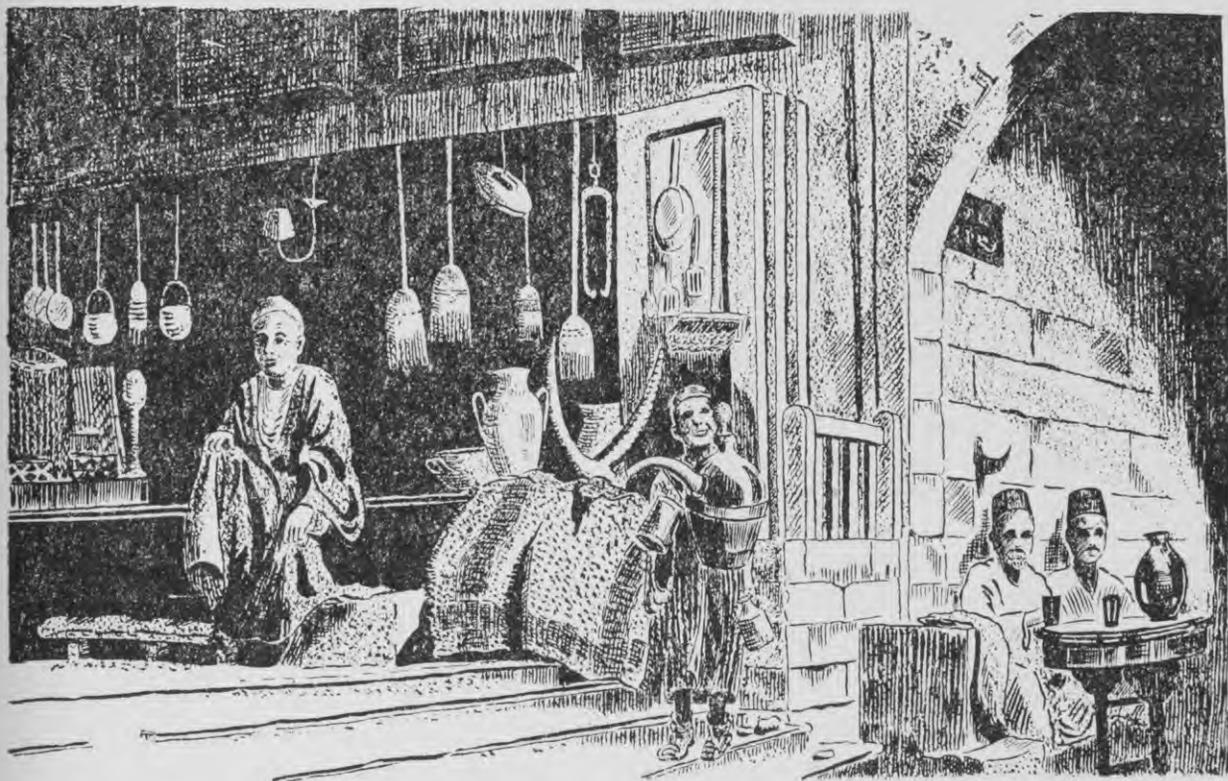
In the days of the Pharaohs, Egypt prospered. Its first king was Narmer, who later adopted the title of Mena. It was during the early Dynastic period that the ancient city of Aneb-hetch, later known as Memphis, was adopted as the capital of the country, and that Tcheser built his step pyramid at Sakkara near Memphis as a funeral monument, a form that was later perfected by Cheops, Chephren, and succeeding pharaohs. It was in the reign of Chephren that the Sphinx was completed. This huge figure of a recumbent lion with outstretched paws

the south of the present Cairo and known today, with the remains of its old fortress, as "Old Cairo". The second is now entirely desolate, and the third founded by Ahmed Ibn Tulun is partly included in the present Cairo and contains the great mosque named after its founder. He also built a great aqueduct, remains of which are still to be seen. When Gohar el-Kaid conquered the country in 969 for the Fatimite Khalif, he founded a new capital, El-Kahirah, "the Victorious", a name that has been corrupted to Cairo. He also founded the mosque, el Azhar, which was converted into a university and still remains the chief theological seminary of the Islamic world.

New Zealanders have often looked across from Maadi at the Citadel, but not all know that it was Saladin who built it when he fortified Cairo against the Crusaders. The army of Saladin's day consisted mainly of mercenaries

who were given the name of Mamelukes. They became so powerful that one of their number actually became ruler of the land and Mamelukes held power for 270 years. During their time bridges were built, canals were cut and many beautiful mosques were erected. The tomb mosque of Kait Bey on Roda Island and the Sultan Bar-kuk, with its two domes and two minarets, were products of this period. Incidentally, it was on Roda Island that, according to Arab legend, Pharaoh's daughter found Moses in the bulrushes.

The Turks, who conquered Egypt in 1517, had little influence on its progress, but Cairo became headline news in 1798 when Napoleon fought and won the Battle of the Pyramids, only to have his fleet destroyed a few days later near Alexandria by Nelson. When an English force landed in 1801 the French gave up their dreams of an Eastern empire, and the Turks again took over. When Turkey's grip on



A typical scene in the Mouski

Egypt loosened, Mohammed Ali, graduating from Governor of Cairo, became master of all Egypt, but he had to carry out two massacres of the Beys who disputed his authority. In the second mass murder, which took place in a narrow street between the middle gate of the Citadel and the Bab-el-Azab, only one of the 470 Mamelukes escaped. In 1824, Mohammed erected a palace inside the Citadel and commenced the building of the mosque that bears his name—that beautiful mosque, with its dome and two slender minarets, which is one of the architectural gems of Cairo. It was during Mohammed Ali's reign, too, that the foundation stone of the great Barrage, which took eighteen years to build, was laid. The government of Egypt was made hereditary in the family of Mohammed Ali in 1841, and King Farouk is his great-great-grand son.

The influence of the British and the French is very apparent in Cairo to-day. In 1879, the two countries established a condominium which lasted two years. When the French refused to help Britain quell a rising

in the following year British troops occupied Cairo and retained a garrison in the famous Kasr el Nil Barracks right up until 1936. In 1914, when Turkey displayed her friendship with Germany, Egypt became a British protectorate and Turkish suzerainty was terminated. Eight years later Great Britain proclaimed Egypt an independent sovereign state, thus terminating a long record of foreign domination for the ancient country.

Modern Cairo has been described a thousand times and a thousand times has it been called a city of contrasts. When the Battle for Egypt swayed backwards and forwards across the burning North African sands, and Cairo became the headquarters for thousands of Allied troops the contrasts were even more marked. But in spite of all the dirt and squalor, the innumerable smells and disgusting sights, Cairo even in wartime has an appeal all its own. It is so rich in colour, so unpredictable in its moods, so vivid in its contrasts, and so alluring and mysterious under an Egyptian moon. Tall, gleaming skyscrapers, shining limousines, the latest fashions in dress catch the eye at one moment; and then in the next the scene has changed and one is gazing at a fly-covered beggar, a haughty smelling camel, and dirty, verminous hovels, and shouting "Imshj yalla"! to filthy, roguish-eyed urchins touting for business.

Nowhere else in the world is there a city quite like Cairo and yet part of almost every city of the world exists within its boundaries. It is still the centre of the Arab world, still the Arabian Nights city of fabulous wealth and mysterious adventures, and still the hub of Middle East trade as it was in the picturesque days of the desert caravans. But in the various European residential areas are palatial Western homes, beautiful gardens and



"Mountaineering" at Ghiza

all the trappings of modern civilisation, and in the centre of the city is Gezira Island, one of the most famous playgrounds in the world. Contrasting strongly with the wealth of the Egyptian and the luxurious homes of the European residents are the dirty,



"Shoe-shine, George?"

squalid areas of the poor—narrow, winding streets, mud-brick and stone houses, smells, filth, and smells again. All the vice of the world lurks in Cairo's back streets; all the pleasures of the world are to be found within the city's boundaries.

Poor though he might be, George Wog seems happy in the life Allah has given him. In spite of his poverty and his ragged robes, he still finds plenty of scope for his natural joie-de-vivre and his age-old philosophy. He still likes to bargain and to gamble and he is a good sportsman in victory or defeat. Strange to say in these long years of war the New Zealand soldier

and George Wog have achieved a common understanding and a mutual regard. The Egyptians have not forgotten the Kiwis' dash from Syria to Mersa Matruh and their subsequent part in the Battle of Egypt.

No matter how many times a New Zealander has booted a wallad on his ghalabia, abused a Mouski merchant, sung his far from polite version of the country's national anthem, smashed up cabarets, or driven trucks with reckless disregard for native life and property, George Wog has come up smiling—a cunning, wicked smile, perhaps, but one with a tolerant, friendly appreciation of the New Zealand soldier. To the Wog, the Cairene of the streets and the markets, the cabarets and the gharries, the Kinci is a "good fellah".

The New Zealander on his part will never forget Cairo and its people—its descendants of the serfmen of the Pharaohs, of the Persians, the Greeks and the Romans, its Moslems and its Copts, its Greeks, Turks, French, Italians, and Armenians. Long after this war is ended he will hear again the eerie call of the Muadhdhin summoning the faithful to prayer; he will see again the picturesque feluccas on the Nile silhouetted against an Egyptian sky; and he will remember the teeming, exciting life of the great metropolis long after the memories of the sand, the flies, and the heat of the desert have faded. And back in his own country—that "very good, very clean, very hygiene" land of home—he may, perhaps, retain some of the ancient wisdom of Egypt and some of the philosophy of life that has made the Cairene contented with little. If it is not allowed to kill ambition and industry, there is a lot in that expressive Arabic word—*maleesh*.



LAST STRONGHOLD of FASCISM

LONG in a backwater of the overall European political scene, the question of Spain, last stronghold of Fascism, has lately become once more one of the focal points of international attention. Events in Spain during the past ten years, during which the country has experienced the full blast of revolution, civil war, internal disruption, devastation and the accompanying ordeal of starvation and poverty, have been obscured by the greater tragedy in Europe, which has also provided a smokescreen for the rise to power of General Franco and his Falangist followers.

Last of the Fascist dictators, General Franco recently encountered an unexpected snub when he informed his Falange (Fascist) followers that Spain would shortly be asked to restore the monarchy, vacated by King Alfonso in April, 1931. Within a few hours the Pretender to the Spanish throne, Don Juan, made an announcement that he would not accept the crown from Franco's hands because it "would thus inherit the legacy of the Franco regime". Franco, who has carried out a drastic overhaul of his Cabinet, also took the opportunity during his speech to the Falange of recalling Spain's "strict adherence to neutrality" during the European war. At the eleventh hour, with the re-moulding of Europe in progress in Berlin and with such questions as the future of Tangier in

the balance, Franco was making an effort to cover up the tracks of his earlier indiscretions.

Spain escaped involvement in the European war, in which, had she been a full-scale belligerent, she would certainly have been ranged on the side of the Axis. But the story of Spain in the past decade is one of abject misery, of intrigue and unrest, and of humiliation and poverty for those unfortunate enough not to have had Fascist leanings. Under the Franco regime, which had its birth in mutiny, and came to power in an orgy of fratricidal strife, Spain has endured sufferings almost as great as those of the countries which came one by one under the Axis heel in the early years of the present war.

The General Franco who now proclaims Spain's neutrality is the same Franco who earlier announced his desire for, and belief in, German victory, and who sent troops from his regular army to fight in Russia under German orders. Not wishing to push Spain into the arms of the Axis at a time when Allied fortunes were running low, Britain and France sent her supplies of coal, lubricating oil, petrol, cotton and other goods. Still Franco let it be known that he considered democracy was ended.

The Spanish monarchy ended fourteen years ago with the hasty departure from Madrid of King Alfonso, and

a republic was proclaimed. A dozen different governments held power before the fateful elections in 1936, which showed a surprising swing to the Left. The new Left Republican Government had been in office barely a month when the seeds of conspiracy for its overthrow were being sown not only among the generals in the army, but also in Rome and Berlin, where money and arms, planes and men were being promised. The situation rapidly deteriorated, and, with the assassination of a reactionary politician, Calvo Sotelo, the excuse the conspirators had been waiting for arrived. Six days later, on July 18, 1936, the army mutinied.

In Madrid and Barcelona, where the first impact of the civil war which followed was felt, practically unarmed populations rose in a body to defend the republic, and the generals' mutiny failed. It met with success in other parts of the country, but on such a small scale that the defeat of the uprising within a matter of weeks seemed certain. Then a new factor came into play. The Spanish Foreign Legion and Moorish troops were ferried across from Morocco in Axis aircraft, while German warships were used to transport and convoy the equipment of these formations. With Franco at their head, these troops began the northward march on Madrid, being opposed only by the poorly-armed and untrained Militia of the Republican Government.

The Anglo-French "non-intervention" policy prevented the Government from buying arms; Germany and Italy supplied Franco with both arms and troops. The whole world knows now that Hitler used Spain as the rehearsal ground for his later campaign of aggression in Europe and that Mussolini chose to lend his weight to the rebel cause in order to re-ignite the enthusiasm of Italy's poorer inhabitants, who were beginning to see the "glory" of the Abyssinian conquest fading into growing misery at home.

Franco's forces reached the gates of Madrid in November, 1936, led by Italian tanks and with German bombers overhead. At this stage a single squadron of Russian fighter aircraft entered the fray in support of the Republicans, and a few days later Russian tanks, though in very small numbers, appeared in the fighting, as well as the first of the five International Brigades that were to figure in the defence of Madrid. The siege of the capital dragged on into months and even years, and through it all the city was subjected to continuous bombardment from Franco's aircraft. In



the two years from August, 1936, to July, 1938, Madrid was bombed 151 times and Barcelona 93 times. Franco sent his planes in to bomb the populace of Madrid, soldier and civilian alike—Franco, who later, during the European war, was to demand through his newspapers in the name of humanity that the bombing of Germany should cease.

Valiant as was the Republican stand, it could not go on indefinitely. Franco

could obtain all the supplies he required; the Republicans, hampered by the non-intervention blockade, could get only an occasional cargo through by sea and nothing at all by land. Four Franco divisions, consisting for the most part of Italian troops, took Barcelona in the winter of 1938-39, and the northern armies of the Republic were forced across the frontier into France, where they were interned. The subsequent fall of Madrid, and with it the third of the territory of Spain still holding out, brought to an end a civil war which had cost a million Spanish lives in two and three-quarter years.

The Falangist regime in Spain has kept the political prisons full, and one of the causes of the country's poverty today is the enormous amount of money raised in taxation to pay for the army and the hordes of special police, prison officials and Falangists. On July 17, 1941, Franco made a speech in which he said: "The Allies have lost the war . . . the blood of our youth will join that of our comrades of the Axis." Russia had just been invaded, and that was the manner in which Franco announced the intention of his government to send to Russia the "volunteer" Blue Division—a force of fifteen thousand men which arrived in Russia in the late autumn of 1941.

Although at one time in British hands, Tangier has in modern times been controlled by an international administration in which the British, French and Spanish Governments shared. At the moment when the war appeared to be going against the Allies the Franco regime took over complete control of Tangier. With the European war off their hands, the Allies now have time to deal with this question, and four Powers—Britain, France, the United States, and Russia—are sending experts to confer on the steps to be taken in respect of the future control of the international zone. Another of Franco's chickens is about to come home to roost.

That the Spanish revolution of 1936-39 was in large measure part of the world totalitarian revolution seems certain. The civil war destroyed much of old Spain and killed five per cent. of her population of twenty-six millions. The Franco administration has succeeded in restoring only a small part of the damage, and the country is still struggling under the dual burden of starvation and oppression. It is not known whether any large body of the six hundred thousand loyalists Franco imprisoned after the civil war has been released, but it is known that the prisons are still full to overflowing. And the Falangists have the disturbing knowledge in their minds that at least half the people of Spain have Republican sympathies.

Beset with difficulties from within its domain and possibly even greater complications from without the Spanish regime can scarcely be numbered among the happiest in Europe today.



MIRACLES IN

DESCRPTIONS of the post-war world frequently sound like wondrous Wellsian visions, with all-plastic homes, motor cars, trains, and aeroplanes, with helicopters dropping down on to hotel roofs or the back lawn, with disease all but conquered and life prolonged, with television, electronics, jet propulsion, and a score of other modern marvels. It all seems too wonderful altogether, and yet strange to say much of it is already in existence or is about to come into our life. In this world of the future there is one material which is going to play a vital part. It is glass.

Probably the oldest plastic of all, glass is indispensable in the modern life and its uses are almost unlimited. In war, in science, in industry, in building, and, in fact, in almost every side of life it is making a vital contribution to progress. Little short of miracles have been produced from this age-old material.

Glass can be made sufficiently strong for building, it can be spun like silk into the most delicate fabrics, it can be sawn like wood, and it can be rolled like cotton wool. It can provide the well-dressed male with a neck-tie that will not stain, the fastidious housewife with draperies that will not burn or fade, and industry with glass wool for insulation, non-corrosive pipes, and jewels and gauges of highest quality. In the past man has owed much to glass; in the future his debt promises to be even greater.

Modern though glass appears, it has a history that dates back to the earliest Egyptian civilisation. In the tombs unearthed in the land of the Pharaohs have been found articles of glassware that date back to 1800 B.C. Pliny, the Roman historian, tells how Phoenicians invented glass by accident 5000 years ago, but his tale of melted sand, soda and limestone around a camp-fire, amusing though it is, is regarded as dubious folk-lore. It shows, however, that glass was already well known to the earlier civilisations, even though it was not until the beginning of the Christian era that glass-blowing was invented. With this discovery, the making of glass entered a new phase.

As the new trade spread through the civilised world, every country added something to its development. Greatest of all glass-making centres in Europe for many centuries was Venice, which still enjoys a just fame for its products. It was in 1291 that the city's glass-ovens were removed to the island of Murano, owing to the danger of fire, and from then on the secrets of the industry were so jealously guarded that penalties of death and torture awaited anyone who revealed them.

The sixteenth century was the great period of Venetian glass, a period that gave birth to those spirited, graceful, airy forms of vessel which are due solely to the glassblower's labour and which established for the city a reputation that was envied throughout the known world. Even though renegade

Venetian glassworkers carried their secrets to foreign lands and beautiful glassware was made in other Italian towns and in many European countries, it was not until the eighteenth century, when cut glass from Bohemia and Silesia came on the market, that the supremacy of Venice was seriously challenged. Since then most European countries have made their contributions to the industry, not the least valuable of which have come from England. More recently still, glass has been adapted to uses hitherto undreamed of, and since the days of London's famous Crystal Palace it has been regarded as one of the miracle materials of the modern age.

From what is glass made? Sand and soda would be a simple answer, but to be technical a typical glass carries 100 parts of sodium oxide, 67 parts of calcium oxide, and 452 parts of silicon dioxide. If the formula is changed or other ingredients added, different kinds of glass are obtained or a *fiasco*, a term that has come to us from the original Italian word for a bottle, results. (The word arose from the fact that if a glassmaker found he was using a bad mixture he would not risk making anything of a special nature and would make a *fiasco* or wine bottle instead. Hence our word meaning a failure). Modern methods have produced hundreds of different types of glass. One American firm makes about 35,000 different glass articles, varying from tiny jewels for instrument bearings to bricks for building.

Some of the methods of manufacture have changed considerably in recent years; others are centuries old. The glassblowers of early times dipped a hollow reed into melted glass and then blew a bubble into the required shape. Today, much the same method is employed. To make a crystal tumbler a glassblower thrusts the end of a thin iron pipe into the melted glass. A lump clings to the long rod and as it

cools it thickens. The expert knows exactly when the lump has cooled sufficiently for him to start blowing. Then with some well-judged puffs and several twists and turns, he transforms the shapeless lump of molten glass into the approximate form of a tumbler. When ready he inserts it into a mould, keeps on blowing, and rotates the glass to prevent mould joints appearing on the surface.

Finishing touches are performed by a chair-worker, who, without taking any measurements, can shape a group of glasses or vases so that no variation can be detected by the human eye. Then the "wetter-off" takes over and cracks off the tumbler from the parent



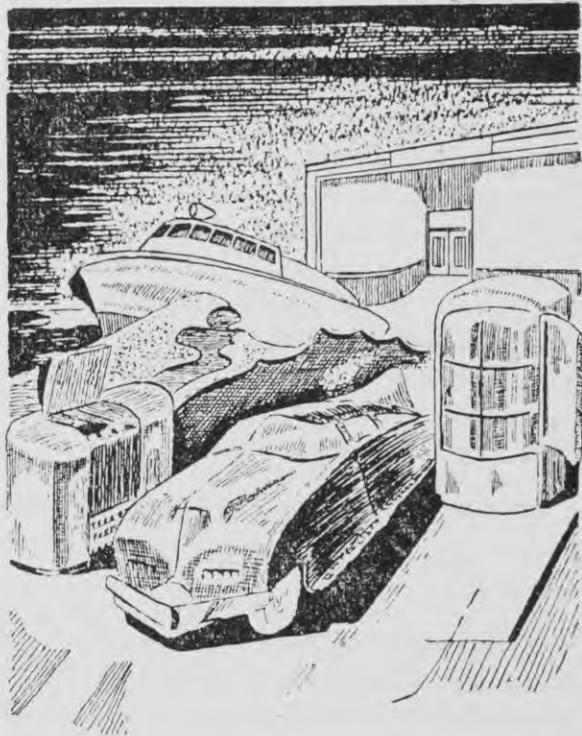
A plate of glass three-quarters of an inch thick can support the weight of an elephant with ease

iron. Usually in hand-made glassware a trace of where the iron was can be found on the finished article, in contrast to the mould markings of machine-made ware.

Machinery, of course, plays a big part in the manufacture of modern glassware. Intricate machines can now do precisely the same work as the blower and do it swiftly and endlessly. For example, electric light bulbs were once blown by hand; now automatic machines go through almost human motions and turn out complete bulbs so quickly that the eye cannot follow them. Other machines mould bottles; others again pour and press glass into moulds to form solid objects; and there are huge machines that draw window glass in continuous sheets from pots of glass or that cast great slabs that are later polished to plate glass.

Science has taken a hand in no uncertain a manner in the manufacture of glass. Textiles of glass are today being manufactured that are like silk in appearance but have far different properties. Fibres that are finer than silk thread are used, 4,000 miles of them to a pound of material. They are made by drawing molten glass through a platinum sieve. The almost invisible threads cool as they pour down and are subsequently plaited three together to form the fibre. Glass textiles are not only decorative but they are non-inflammable and will not stain. These fibres retain the electrical insulating properties of glass and can thus replace silk or cotton insulation on wires especially in motors where ordinary insulation will char at temperatures sometimes reached by overloading.

Then there is glass like cotton wool, formed when fine streams of molten glass are forced against a blast of steam. Heat insulating for houses, refrigerators, railway passenger and freight cars, ships, steam piping, and many other purposes can be carried out with glass wool, which is impervious to mildew, vermin, and fire. Of almost equal interest is the new foam glass which resembles cork, and can be sawn and handled in the same way



Glass offers new opportunities in engineering and design

as this now somewhat scarce material. It is formed when tiny bubbles of gas are permanently trapped in a solid foam of glass, which is so light that it is admirable for life preservers, life rafts, and cold storage insulation.

Plate glass and safety glass have been on the market for many years, but all the time improvements are being effected, especially in regard to the passage of ultra-violet rays and insulation. Building bricks are becoming more and more widely used. They are strong, very cheap, and light in weight, and are now being made in a variety of attractive colours. A new idea is that movable partitions can be made of interlocking glass bricks, without nails or mortar, so that the interior of homes and offices may be re-arranged at will.

Glass will be to the fore in the modern kitchen, too, for great strides have been made in glass that will stand great heat and sudden cooling.

Much of the pre-war "unbreakable" glass that was used for cooking would crack and shatter when exposed to a direct flame or when cooled too suddenly. Now a new "shrunk" glass has been produced which meets all industrial as well as kitchen requirements. It can be heated until it turns red and then can be dipped into icy water without a crack appearing. Soon a housewife will be able to have most

of her cooking utensils in glass, use a glass oven, unbreakable glass furniture, heat-absorbing glass which will cut down fuel bills, and glass radiators to heat her rooms.

The limits of development of glass have not yet been reached. The rejuvenated, age-old material will occupy a proud position in the exciting new era which is about to dawn.

CONTRACT BRIDGE

OPENING LEADS—This is a thorny subject and causes many headaches to those who lead largely by intuition and even more headaches to their partners. A bad opening lead can often give the contract to a declarer who otherwise faced certain defeat. It can also thoroughly mislead your partner.

There are two major considerations in choosing an opening lead. First it must give your partner maximum information. This is a point that must continually be remembered throughout the play of the hand, and it applies on the opening lead. Secondly it must not present the opponent with a trick he could not otherwise have won.

The first consideration explains why certain leads are conventional. They tell partner something about your hand. A lead of an honour indicates a sequence of some strength, *e.g.*, KQJ, or QJ10, or KQ10 or QJ9. It is customary to lead the top of a sequence unless it is the Ace. From AK, etc.,

lead K. Thus the lead of an honour usually denies possession of a higher honour. But where K is led and takes the trick then partner presumes that you hold the Ace. There is an exception to this rule where what is called an interior sequence is held, *e.g.*, KJ 109. The correct lead here is J not K.

Summarised, the lead of an honour in a suit not bid by partner assures possession of the next lower honour, and denies the next higher except in AK combinations. In the last case the lead of an Ace would not indicate the K, but the winning of the trick by the K does show the Ace. It follows from this rule that the lead of an Ace denies the possession of K. The only exception is when holding AK bare. You then lead Ace followed by K, and your partner knows that as soon as he is in he can safely lead that suit for you to ruff.

Next issue further opening leads will be dealt with.



Wales was their Waterloo!

7 HERE is a substantial body of support for the contention advanced in some quarters that New Zealand Rugby football between the two wars reached its lowest ebb in the five years immediately preceding the second outbreak. Whether or not that is so, it opens up an interesting point: will the resumption of full-dress football a season or two hence find the standard better or worse than it was before the war?

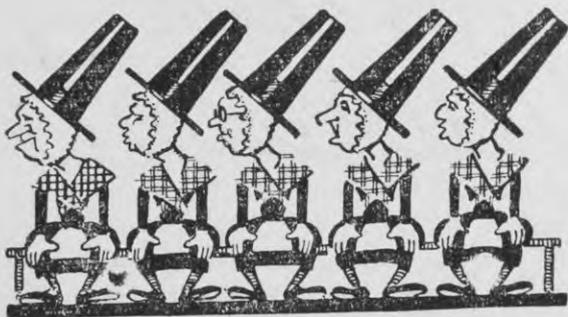
The question is not as empty or as futile as it may appear on the surface. No one can recall the boom period of Rugby that followed in the wake of the last war without looking to the years ahead with a good deal of relish. There were a lot of rough edges about New Zealand pre-war Rugby that obviously needed ironing out and more than one department of the game that fairly screamed for improvement. Will those defects still be there after the war, or will the new crop of players provide the mould in which the coming order of things can be shaped?

It is no use dodging the facts. New Zealand Rugby in the late thirties was definitely weak, or at best mediocre, in several respects. As far as team formations were concerned, this weakness was probably most noticeable in the five-eighth line, while there were also other positions in the field, including the scrum, where no players of really international class shone out. There is always a tendency in New Zealand to rate Rugby standards by that of the 1924 All Black team, which remarkable combination was in the

happy position of being able to fill every position on the field to perfection. The 1924 team represented the peak of New Zealand Rugby achievement following the last war, and the undoubted quality of its structure lends weight to the belief that this war may introduce a similar revival in the country's football fortunes.

Nobody awakened to the fact that things had been slipping until the much-discussed 1935 All Blacks visited Great Britain, although it was for the Springbok team which subsequently romped through the Dominion to make it plain beyond all shadow of doubt that it was time for New Zealand Rugby to put its house in order. True, the All Blacks had been beaten by Australia in a Test match in 1934, but that reverse was not seriously accepted as a warning signal, and it was not until the tour of the 1935 team in the Old Country that heads began to be scratched.

One has to be fair to J. E. Manchester's team and stress that from the outset it had to face many difficulties. Not the least of these was the adoption, at the insistence of the English Union, of the three-man front row, after New Zealand had always followed the 2-3-2 and wing-forward scrum formation. During the tour the All Blacks resorted mostly to the 3-4-1 style, which very often did not work out against big packs using the 3-2-3 formation, and their hooking and general scrummaging suffered as a result. In the main, the hard row which the team had to hoe may be put down to this factor, although



"Now then, Wales"

naturally there were other influences as well—notably, the uncertainty of their mid-field play (to which the relative lack of outstanding inside backs contributed) and, of course, the appreciable improvement which the standard of British football had undergone since the Home authorities began building up on the foundations laid by the 1930 team in New Zealand. In 1924, with McGregor and Nicholls at five-eighths and Cooke, Steel, and Svenson in the three-quarter line, the All Blacks had shown British Rugby followers the value of a swift, penetrative back line; in 1935 the British showed that not only had they learned the lesson, but that New Zealand had forgotten it, or at all events failed to develop the idea.

The tourists played twenty-eight strenuous matches in the British Isles and won twenty-four of them. Three were lost and one, against Ulster, drawn. It is considered that the team was lucky not to have been beaten in other matches, notably at the hands of Oxford, who were defeated by ten points to nine after the full-back, G. D. Gilbert, had brought off a spectacular and much-needed conversion in the dying stages of the match. But equally may it be said that they were perhaps a little unlucky to lose the match with Wales, who gained a last-minute opportunist try to snatch victory from the New Zealanders by thirteen points to twelve.

The first of the All Blacks' three defeats came quite early in the tour, in the fifth match against Swansea, who won by eleven points to three. Badly let down by the inability of the forwards to adapt themselves to the 3-4-1 scrum or to turn the formation itself to the needs of the game, which was played on a wet ground, the New Zealand backs never got a chance to get going, and the team as a whole was outplayed by the Welsh club side. As with the 1905 team, the 1935 All Blacks found Wales their Waterloo.

The tourists staved off defeat week after week through the rest of the tour until, nearing the end of their itinerary, they were beaten by both Wales and England. They had collected the scalps of Scotland (eighteen points to eight) and Ireland (seventeen points



"That's better, Wales"

to nine) in the first two internationals, but despite this English critics had forecast that they would find Wales a much harder nut to crack, as indeed events proved. Although the All Blacks won twice as many scrums as the Welshmen the backs could make little headway against the sturdy tackling of the Welsh centres, and the home backs, led by Cliff Jones, C. Davey and W. Wooller, made the most of every scoring opportunity.

By the time the day dawned for the final international, that against England, the New Zealanders were feeling the effects of injuries and staleness.

That is not an attempt to belittle the victory which the Englishmen gained in so clear-cut fashion (the final score was thirteen points to nil in their favour), for they would probably have won on the day in any event. Everything went right for the home team, who were complete masters on both attack and defence, and the speed of Prince Obolensky, on the wing, coupled with the all-round brilliance of B. C. Gadney and P. Cranmer, set the seal on any chances the All Blacks might have had. For most of the second spell the visitors were penned up in their own half, and in the final stages their chief concern appeared not to be to snatch victory but to place a few points on the board. As an instance of this the full-back, Gilbert, had a shot at goal from a penalty when a punt and follow-up by the forwards might have been expected.

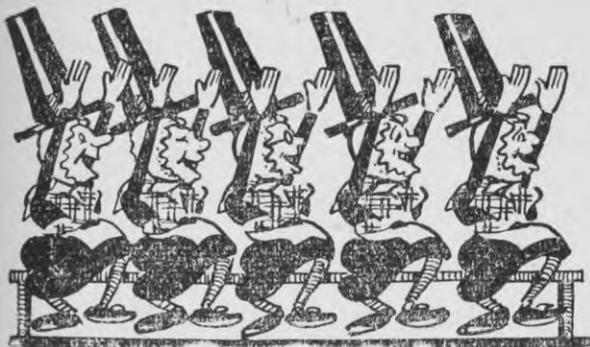
In addition to the defeats at the hands of Swansea, Wales and England, the New Zealanders had one or two narrow escapes, including their three-all draw with Ulster and their wins over Edinburgh and Glasgow, Combined Services and Oxford University, the respective scores being nine-eight, six-five and ten-nine. Also, they were kept fully occupied in beating Northumberland and Durham by ten points to six and South of Scotland by eleven points to eight. Their biggest score of the tour was the thirty-five points they ran up against Devon and Cornwall

in the opening match, and in the full itinerary they scored 431 points against the 180 of the opposing teams.

The team was unlucky in the matter of injuries. Early in the tour colds and mild influenza put seven players out of action, while J. R. Page was injured in his second match and only made three appearances during the tour. T. H. C. Caughey and C. J. Oliver sustained leg injuries at critical stages and the team's crack hooker, W. E. Hadley, had the misfortune to fracture his jaw in the first match, although he was able to resume playing in time for the internationals. D. S. Dalton, who played in only eight matches, W. R. Collins (seven matches), J. E. Hore, R. R. King, G. F. Hart, A. Mahoney and J. L. Griffiths were other players whose services were not always available through their being on the injured list.

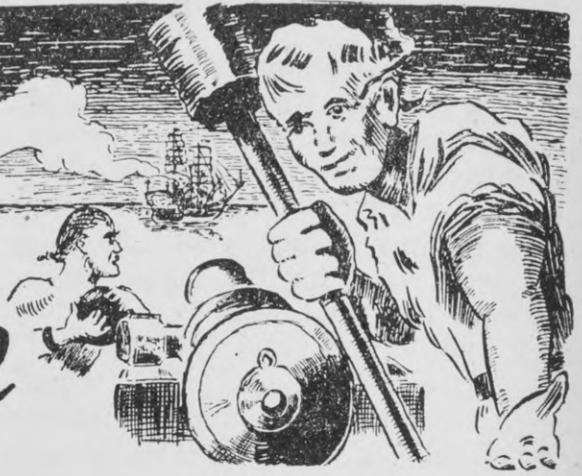
Even allowing for the difference that the presence of Page may have made and for the fact that Caughey was at times a brilliant substitute, the tour showed conclusively that New Zealand could not fill the inside back positions with the dash and sound defensive qualities needed. Nor had the defect been remedied by the time the South Africans arrived in 1937—with what dire consequences the record of that tour shows only too clearly.

Maybe the "three-men-up" scrumming formation can be turned to advantage in the long run, for New Zealand should never run short of the big, fast, toiling forwards needed to cope with an opposing pack which is on the job. But first let us have two or three first-class inside backs to give the attack the sting it requires to match and even master the opposition. Not until then will New Zealand be able to meet the Rugby elect of South Africa and Britain with an even chance of success.



"Hurrah for Wales"

C'est la Guerre



For England and Saint George!

*Once more unto the breach, dear friends, once more;
Or close the wall up with our English dead!
Dishonour not your mothers; now attest
That those whom you call'd fathers did beget you!
Be copy now to men of grosser blood,
And teach them how to war!—And you, good yeomen,
Whose limbs were made in England, show us here
The mettle of your pasture; let us swear
That you are worth your breeding: which I doubt not;
For there is none of you so mean and base,
That hath not noble lustre in your eyes.
I see you stand like greyhounds in the slips,
Straining upon the start. The game's afoot:
Follow your spirit; and upon this charge
Cry—God for Harry! England! and Saint George!*

—Shakespeare: *King Henry V, III, 1.*

According to Huxley

Orgies, whether sexual, religious, sporting or political, provide that periodical excitement which most of us are too insensitive to feel except under violent stimulation. Hence such public stimulations as gladiatorial games, bull fights, boxing matches, gambling; hence patriotic demonstrations, hymns of hate, mass meetings and parades; hence saturnalia, carnivals, firsts of May, fourths and fourteenth of July.

—Aldous Huxley.

Wars are to be undertaken in order that it may be possible to live in peace without molestation.

—Cicero: *De Officiis.*

They Popemoff—Nap and Adolf

*The Emperor Nap he would set off
On a summer excursion to Moscow;
The fields were green and the sky was blue,
Morbleu! Parbleu!
What a splendid excursion to Moscow!
The Russians they stuck close to him
All on the road to Moscow—
And Showvaloff he shovell'd them off,
And Markoff he mark'd them off,
And Krosnoff he cross'd them off,
And Touchkoff he touch'd them off,
And Boroskoff he bored them off,
And Kutousoff he cut them off,
And Parenzoff he pared them off,
And Worronzoff he worried them off,
And Doctoroff he doctor'd them off,
And Rodinoff he flogg'd them off,
And, last of all, an Admiral came,
A terrible man with a terrible name,
A name which you all know by sight very well,
But which no one can speak, and no one can spell.*

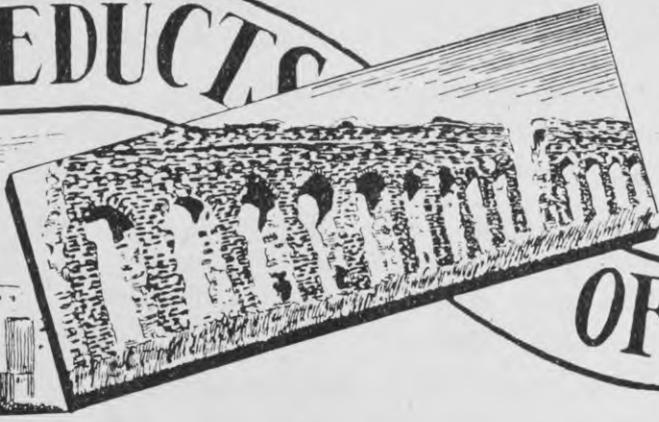
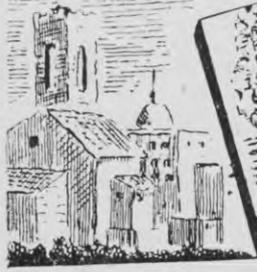
—Robert Southey: from *the March to Moscow*.

Common Sense—Or Is It?

The principles of the art of war are in themselves extremely simple and quite within the reach of sound common sense. Even though they require more special knowledge in tactics than in strategy, this knowledge is of such small scope that it does not compare with any other subject in extent and variety. Extensive knowledge and deep learning are by no means necessary, nor are extraordinary intellectual faculties. If, in addition to experienced judgment, a special mental quality is required, it would be cunning or shrewdness. For a long time the contrary has been maintained, either because of false veneration for the subject or because of the vanity of the authors who have written about it . . . The conduct of war itself is without doubt very difficult. But the difficulty is not that erudition and great genius are necessary to understand the basic principles of warfare. These principles are within the reach of any well-organised mind . . . Even the application of these principles on maps or on paper presents no difficulty, and to have devised a good plan of operations is no great masterpiece. The great difficulty is this: to remain faithful throughout to the principles we have laid down for ourselves.

—General Carl von Clausewitz.

AQUEDUCTS



OF ITALY

BESIDES free "bread and games", the citizens of Rome in the days of the emperors expected baths to be provided by their rulers—also without charge. As the corn for the free bread was ground by water power, the items of bread and baths alone called for a tremendous quantity of water in the city. The need was met by conveying water from various sources, several of them more than fifty miles away, into the city by means of aqueducts, remains of which still exist.

Rome has always been a well-watered city. Even 2,000 years ago the supply *per capita* of water was as generous as that in many modern cities. Historians have estimated that in the first century A.D. the total water delivered by the aqueducts was about 130,000,000 gallons a day.

Before the time of Christ nine aqueducts had been built to bring water to Rome. The first was constructed in 312 B.C. by Appius Claudius Caecus, the constructor of the Appian Way. His aqueduct, known as the *Appia*, formed a covered tunnel for most of the ten miles of its length. The water was drawn from a source to the east of Rome. Subsequent aqueducts brought water from rivers, lakes and springs near the city. The longest, the *Marcia*, was built in 145 B.C., and was fifty-eight and a-half miles in length. An even fall had to be kept in the channels, which were

supported by arches when they crossed valleys and dips in the ground. At one point near the city walls three aqueducts were formed one above the other on the same line of arches.

A great proportion of the length of these aqueducts was covered, and the actual waterway was of masonry. One, built in 127 B.C., included a quantity of concrete in its construction. The shape and size of the conduits varied, some of them being eight feet high and four or five feet wide. A three-mile tunnel through a mountain, carrying water from the Anio River, shortened the route of one of the later aqueducts.

Before the end of the first century A.D., the aqueducts came under the control of Sextus Julius Frontinus. "Will anybody compare the idle Pyramids, or those other useless though much renowned structures of the Greeks with these many indispensable aqueducts?" once said Frontinus, forerunner of the modern Public Works engineer. In Rome's water system, he found that numerous "rackets" were being worked. The aqueducts were being surreptitiously bled en route by owners of adjacent properties. At the city the water was measured into distributing tanks by a few bronze meter orifices of large capacity, and distributed out again by a large number of small orifices to the various purchasers. The watermen, by making the inlet orifices larger than

the nominal diameter and the outlet orifices smaller, were enabled to balance the quantities received and distributed while having a considerable actual surplus which they sold on their own account. Many of the citizens also were not averse to tapping the state mains supplying the public institutions and fountains.

During the Dark Ages most of the aqueducts supplying Rome fell into decay, but some of them have been incorporated in later schemes. The most impressive remains are the stretches of arches which still stand, indicating in monumental fashion the vast extent of the ancient structures provided for the conveyance of the high level supply across the last broad depression of the *campagna* to the city.

The system of bringing water into the city by means of aqueducts had its disadvantages during a siege, as the attackers generally stopped the supply by cutting the aqueducts. This happened to Rome in the sixth century A.D., when the city was besieged by the Gothic king, Vitiges. It is recorded that "great discontent was aroused among the commons of Rome when the cutting of the aqueducts by the enemy deprived them of their baths, and stopped the water mills for grinding corn. Their two great privileges, free baths and free corn, were taken from them". Belisarius, the Roman defender, succeeded in using the current of the Tiber for grinding corn, placing mills in the river, where they continued to be a feature of the river scene until quite recent times.

Aqueducts figure largely in the life and history of most towns in Italy. The one great disadvantage of living at Ravenna, then a large naval base, in the time of the Emperor Augustus, was the scarcity of water for drinking purposes. Martial writes:

*I'd rather at Ravenna have a
cistern than a vine,
Since I could sell my water
there much better than my
wine;*

and again:

*That landlord at Ravenna is
plainly but a cheat,
I paid for wine and water, but
he served wine to me neat.*

This weakness was overcome by Trajan, who built an aqueduct nearly twenty miles long, which was restored and repaired several times in the next few centuries. This aqueduct, of which some arches remain in the bed of the Ronco, seems to have run, following the course of the river, from near Forli, where there still remains a village called *S. Maria in Acquedotto*, to Ravenna.

A "circular letter" sent out by order of King Theodoric (circa 500) to farmers gives instructions for the maintenance of the Ravenna aqueduct. "The Aqueducts are an object of our special care. We desire you at once to root up all the shrubs growing in the Signine channel, which before long will become big trees scarcely to be hewn down with an axe and which interfere with the purity of water in the Aqueduct of Ravenna. Vegetation is the peaceful overthrower of buildings, the battering-ram which brings them to the ground, though the trumpets never sound for siege. Now we shall have Baths again that we may look upon with pleasure; water which will cleanse not stain; water after using which we shall not require to wash ourselves again; drinking water too, such as the mere sight of it will not take away all appetite for food."

The Fontana Aqueduct, which brought water from Serino to Naples, has played an important part in the history of the latter town. The same Belisarius who defended Rome against the Goths laid siege to Naples, then

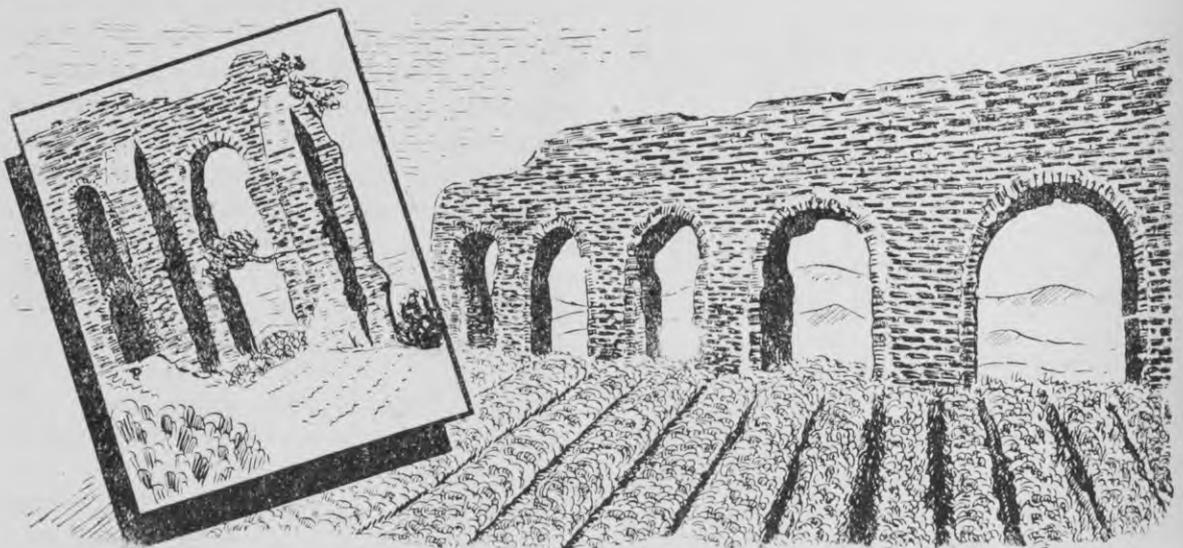
Aqueducts of Italy

a Gothic stronghold, in 536. No doubt remembering the discomforts he had suffered in Rome when the water supply was cut off, he lost no time in doing the same to the defenders of Naples. The Goths, however, held on until Belisarius began to despair of success. He was on the point of raising the siege when an Isaurian soldier discovered a possible means of entering the city through the northern wall by means of the dry aqueduct. A storming party penetrated through it into an empty reservoir in the heart of the city and, rushing to the ramparts, joined hands with those who were waiting with scaling ladders. The city was soon in the hands of the Byzantines. A few red arches, known as the *Ponti Rossi*, a little below the Palace of Capodimonte, are the remains of the aqueduct that caused the fall of the city.

Nor was this the last time Naples was stormed *via* the aqueducts of the city. Alfonso, King of Aragon and Sicily, ejected the Frenchman, Rene of Anjou, in 1442. Alfonso effected an entrance through an aqueduct, but not the Aqueduct of Fontana. This was the "della Bolla", which brought the water from Monte Somma, and entered through the eastern wall.

Modern Italy furnishes one of the most remarkable water supply systems of the world in the Apulian aqueduct which conveys water from the moist western slopes of the Apennines to an area of 8,000 square miles of semi-arid territory in the south-eastern corner of Italy. Water is delivered to a population of nearly four million in 266 communities by a system of 841 miles of main and branch pipes and 550 miles of distribution pipes. The aqueduct took nine years to build, and was completed in 1915. The districts served previously had no water supply, and their dryness may be judged from the fact that often water had to be brought by train from Naples.

The intake of the Apulian aqueduct is at the perennial Caposile springs, so that, as in the case of the aqueducts of ancient Rome, a storage reservoir is not required. The main conduit, which has a capacity of about 110,000,000 imperial gallons a day, is carried through the ridge of the Apennines in a nine and a-half mile tunnel, and extends westward and southward for 152 miles, terminating at Taranto. Altogether some sixty-seven miles of the conduit were formed in tunnel, a typical cross-section having a horseshoe shape eight feet nine inches wide and nine feet five inches high.



Minturnae Aqueduct and (inset) Aqua Claudia, Rome

The Div. Was Never Like This.

**SIMKINS
SLIPS
AGAIN!**



I *T was no use, no use at all. Herbert Simkins could not get used to being home. The army spirit was too deeply ingrained in him. He thrilled again at the thought of parades, route marches, and the slit trench. He had enjoyed watching the other chaps marching and parading—gave him a feeling of superiority—and he had heard a lot about the front line from the rear so to speak. As sanitary corporal he had been in a position to do so, none better really. At times he felt very strongly the call of his bucket and mop, his shovel and hammer. He even felt a sneaking regard for the serjeant-major. He was not such a bad old buzzard at a distance—11,000 miles at least.*

"Breakfast will be ready in five minutes, Herbert," he heard his mother call, and he crawled reluctantly out of bed, a gaunt figure in his singlet. For a moment he wondered where the ablution stand was and then he remembered the garden tap. Whistling merrily, he took his towel and soap and wandered outside. The water was clear and not freezingly cold. He hung his singlet on a convenient rose bush and began to soap himself luxuriously. He was washing his knees when something made him look at the neighbour's house. Strewth! he said to himself. These New Zealand women were no better than the Ites the way they stared.

Shaking a soapy fist at them, he shouted "Via! Via!" But except for a moment's pretence that they were sweeping and dusting the porch they

did not "via". "Imshi yalla!" he screamed at them. And then he heard his mother calling to him. What she said convinced him that there was a bathroom in the house and that he should use it. He felt a little reluctant to do so; the *bint* in the blue smock wasn't too stinking at all. Draping the towel around him, he went inside and dressed.

"Ready in two minutes," his mother called, and he snatched up his dixies and mug and raced to the kitchen door. "Pop" wouldn't be half annoyed, he thought as he leant against the door post. It wouldn't do the old man any harm to be second in the queue for a change. Besides, he felt like a "double-up" this morning.

"Aren't you coming, Herbert?" his father called from within and Herbert knew he'd been sold again. He entered to find the family in full operation on the porridge. He settled into a chair, parked his dixies on the floor and became very busy. The porridge had been singed a little and there were a few lumps in it, but Simkins was hungry. The second course was scrambled eggs. His mother beamed at him as she passed him a big plateful.

"It's *real* egg powder," she said proudly. "Not like the eggs you got in the army, I'm sure."

"No, Mum," Herbert said resignedly, watching the trusty spoon bounce off the rubbery pile. "We never got parsley in ours."

"How the army changes a boy," his mother said regretfully a few moments later. "You know Herbert, you'll have

to learn to use a butter knife and not to stir your tea with your knife-handle. And," she exclaimed with something akin to horror in her voice, "don't throw your cigarette butts on the floor like that."

Simkins looked down suddenly at the two butts. He certainly hadn't stubbed them out. "Sorry, Mum," he



"Well I never, Mabel!"

apologised and wiped his boot over them, squashing them out effectively into a wet brown streak. The tiled and stone floors of those Italian *casas* were to blame for this. He was so occupied with these thoughts and in noticing that there was only marmalade for his toast that he missed his mother's agonised look.

"What are you going to do this morning, son?" Mrs. Simkins asked bravely.

"Tidy up my kit," Herbert replied. "There may be things I can hock without getting any K.D.'s from the Q.M. *wallad*."

"Oh, I see," replied his mother vaguely. She couldn't cope with the army language. Perhaps, it was just as well she couldn't understand all

the words anyway, she reflected. "I'll slip into town and do a little shopping. You'll not mind, dear?"

Simkins assured her he wouldn't, and then collected his dishes and wandered over to the sink.

"I'll wash those," his mother said urgently.

"*Non importe*," Herbert replied, allowing the tap to race over his dishes and splash over everything around, including Herbert Simkins.

"What did you say?" his father asked sharply.

"Just that I had the plug in and it's flooding hot," said Simkins with great presence of mind.

"Oh," said his parent coldly.

Simkins spent the morning profitably. He sorted his gear into three heaps—one for handing in, one for washing, one for—not handing in. When he had finished he looked at the washing and thought he couldn't let his mother do it. He couldn't be bothered doing it himself either. And then he had a brainwave—at least he chose to think it as that. He hurried out to the pantry and scanned the shelves.

A moment later, whistling an army classic, Simkins was walking down the path with his eyes on the house on the opposite side of the street. He had liked the look of the *signorina* he had seen with the *signora*. Quite reminded him of Trieste it did. He hoped she liked chocolate. He wondered which door he should go to, but decided that for a corporal with three beautiful ribbons and five service chevrons it would not be altogether dignified to go to the back entrance. He rang the bell enthusiastically.

"Buon giorno—I mean, good morning," he greeted the middle-aged woman who opened the door. Just his luck it wasn't the *bint*, he thought.

"Good morning," she replied almost inquiringly.

"You wash for me—*lavare per soldato*?" he asked.

The woman looked at him in growing wonderment mixed with concern.

"*Molte lavare,*" Simkins reiterated. He pointed to the little stack of articles on top of his dirty clothes. "*Molte carne, molte sapone,*" he added, but still the woman merely gaped. These damned Ities couldn't understand their own beastly language. And then it dawned on him. She wasn't an Ite at all, and he hastened to rectify his error. Habit died hard.

"Sorry, Madam," he said in his best Trieste voice. "Would you like to do some washing for me—you or the *signorina*, I mean, your daughter? It's worth quite a few tins of *munga*, I mean food, to you. And sap—soap, too. Good soap—not Wog muck."

"Well, I nevaïr," said the woman.

"No harm in beginning now then," Simkins put in brightly. "And your daughter, I bet she did a lot for the Americanos—what with that figure and all."

"What cheek! what utter cheek!" the woman almost screamed at him before banging the door. Simkins was glad he had turned his face away or his nose would certainly have got mixed up in the door. He thought of going round the back in the hope that the *bint* would be more accommodating, but perhaps she might be like her mother. Most unfriendly woman, not at all like his *signora* near Monfalcone. Now she not only did his washing, but—

Simkins found his reminiscences cut short by an abrupt encounter with his mother.

"What on earth are you doing with all that dirty washing and three tins of tongues?" she asked.

Simkins embarked on a lurid description of the incident and his mother listened grimly, trying to sort out the meaning of the English, foreign and other language. When at last she did understand, she told her Herbert all about it.

"*Maleesh! Sans faire rien! Non importe!*" he put in at every opportunity, but it was like trying to stop the RSM when he got going. Dear, kind, honey-tongued serjeant-major, he thought, as he listened to his mother . . .

Lunch had not been a highly successful meal and he was glad he had a medical examination in the afternoon. It would be quite like the army again. He sniggered at the thought of having his particulars taken down again. He wondered who he'd meet there and what the doctor would say this time. He hadn't been at all polite on the boat, nor at Trieste . . .

"I always say it's us chaps who do the dirty work," Simkins told the bar at large, pointing to his infantry patches.

"*Aiwa,*" said the only other soldier at the bar. "*You certainly did.*"

Simkins didn't altogether like the emphasis on the pronoun, but the other



"You wash for me?"

chap had an ASC patch up, so it seemed safe.

"It was the same in the desert as it was in Italy," Herbert went on confidently. "The PBI did all the spade-work."

"Ain't," said the other soldier, while the half-dozen at the bar nodded in confirmation. "You certainly did."

Again Simkins looked hard at the speaker, but he couldn't make anything of the face in the shadow of the wall.

"I remember at Alamein," he went on. "Thanks; don't mind if I do," he said, pushing his glass forward. "Well, at Alamein who got all the——dirt there? I ask you?"

"You did," said the soldier.

"What do you mean *I* did?" asked Simkins suspiciously.

"Why, Corp., I used to drive the swill truck at Maadi when you were on permanent sanitary fatigue. Don't you remember me?"

Simkins spluttered. Talk about swill quite spoilt the taste of the beer, but all the same he was not going to be put off the glass the civvie had shouted him. Not everyone could be in the front line and he had always done a good job for morale. No one could say that he hadn't helped the boys get

their rumours. He was a good Taranaki son. But all the same it was unfair to strike this in his own home town. He might even come round to having to pay for his beer. He picked up his beret and stalked to the door.

"Buona sera and grazie," he said just to show how good his Italian was.

As he walked home to his parents' house on the outside of the town, a breeze was blowing off the Taranaki pastures bringing a typically Taranaki aroma with it. He breathed it in luxuriously and for a moment imagined he was back in the army. The dust made him sneeze, used to it though he was. As he trudged past Gur. Twigg's place he saw the artilleryman carefully arranging the mosquito nets over the family's beds on the lawn, all six of them.

"Bringing 'em up the right way," Twigg shouted to Herbert happily.

"Si," said the corporal gazing over the fence. The little Twiggs were lined up at the back door waiting for their meal. The cellar door where Twigg had installed a keg of beer and a few bottles of wine bore a large out-of-bounds sign, there were a couple of *vivas* to Members of Parliament across the front wall, and there was even a sacking enclosure on the side lawn.

"It brings back memories," Twigg sighed. "It can never be quite the same, though. The Div. was never really quite like this," he added regretfully.

"No," agreed Simkins. "Not really."

"Come and get it or I'll throw it out," came a great shout from the kitchen. "Come and get it or I'll . . ."

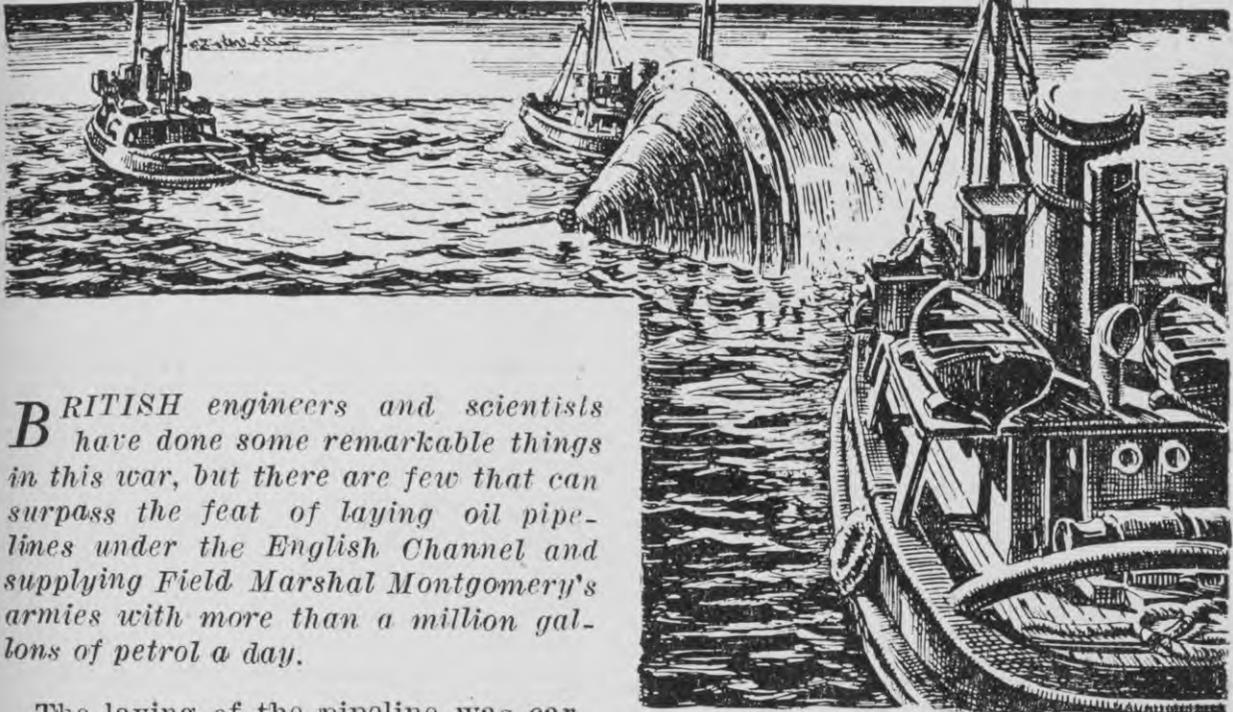
"See you *badin*," Twigg shouted as he raced for the house. "That's the cook and she might do what she threatens. She's taken this too seriously."

Simkins walked on resignedly. No, he thought, the Div. was never like this.



Bringing them up the Div. way

PETROL *from* PLUTO



BRITISH engineers and scientists have done some remarkable things in this war, but there are few that can surpass the feat of laying oil pipelines under the English Channel and supplying Field Marshal Montgomery's armies with more than a million gallons of petrol a day.

The laying of the pipeline was carried out under the eyes of the Germans and in the most difficult and dangerous circumstances. It solved a major supply problem for the British Army just as the "Mulberry" harbours helped greatly in the landing of general military stores in the critical period after D-day. It is probable that in the days of peace the idea may be used on a wider scale.

"Operation Pluto"—Pipeline under the ocean—was first thought of in April, 1942, during a demonstration of flamethrowers for Lord Louis Mountbatten, who was then Chief of Combined Operations. At the end of the demonstration, the Minister in charge of the Petroleum Warfare Department asked Lord Mountbatten if there was anything more that could be done on the petroleum side to assist in the continental operations which were then being planned. The reply was: "Yes. Can you lay an oil pipeline across the Channel?"

The problem of supplying an invasion force with unlimited supplies of petrol was a tremendous one. The

delivery of bulk supplies of petroleum normally requires special harbour, dock and storage facilities. What was wanted was a more simple way of carrying petrol to the beaches and having it always available. A method that would reduce the target area and be less vulnerable to enemy action would be of great advantage to the invading forces. And so the problem was handed over to the experts. Their answer was that a pipeline across the Channel was impossible.

But the idea was not allowed to drop. Mr. A. C. Hartley, chief engineer of the Anglo-Iranian Oil Company, suggested that it might be possible to make a pipeline somewhat like a submarine electric power cable, without the cores and insulation, and to lay this across the Channel. Experimental piping was made and trial lengths were laid in the Thames from a cable ship. The experiments were entirely successful and permission was granted for work to be continued on the project.

It was decided to lay a pipeline across the Bristol Channel where the currents and general conditions were similar to those ruling in the English Channel. Two thirty-mile lengths of piping were ordered, and in December, 1942, a cable was laid across the Channel between Swansea and Bfracombe. Once again the experiment was entirely successful. But there were other difficulties to be overcome before a pipeline could be laid between England and France right under the Nazis' noses.

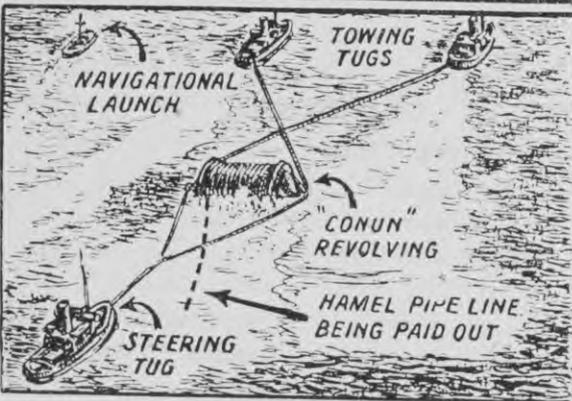
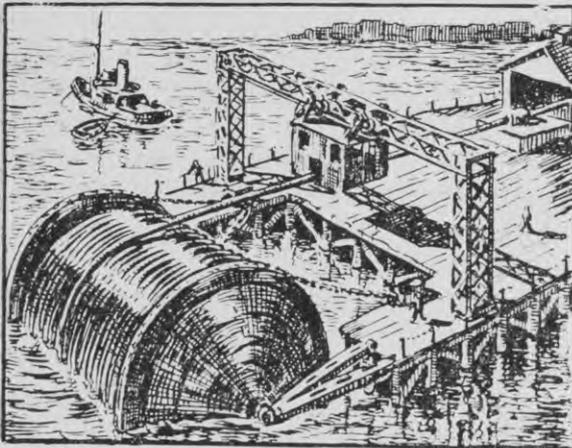
A more flexible type of piping was required, one that could be conveniently laid. Through the efforts of the chief engineers of the Burma Oil Company and the Iraq Petroleum Company, a pipe was made which fulfilled all requirements. It was found that twenty feet lengths of three-inch steel piping could be welded automatically into any required length and

wound on to a drum like cotton on a cotton reel. Providing the drum was at least thirty feet in diameter, the piping could be unwound more or less straight. The Admiralty then took a hand and designed *H.M.S. Persephone*, a barge which was converted into one of the strangest craft afloat. On the ship's deck was installed a huge wheel rotating on trunnions and capable of carrying many miles of piping and of paying it out into the sea.

From the *Persephone* arose a second idea—a floating drum which could carry the full length of piping required for a Channel crossing. Tests were carried out until a drum was evolved that could be towed like a large bobbin, paying out piping as it went. The floating drums, which were christened *Conundrums*, were moored in deep water so that 4,000-foot lengths of piping might be welded into a continuous length of thirty or more miles and wound neatly on the drums as they were rotated.

It is difficult to imagine the size of these drums, even when the measurements are provided. A *Conundrum* is ninety feet long and more than fifty feet in diameter and can carry seventy miles of pipeline. It weighs about the same as a destroyer.

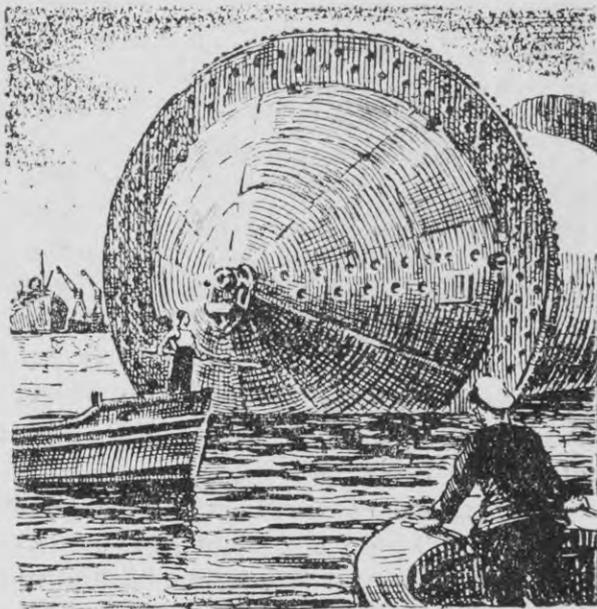
With the completion of the tests, the next step was to co-ordinate the whole scheme and form an organisation to operate it. The Petroleum War Department was presented with the new undertaking and Force Pluto was formed. The new unit consisted of a number of vessels varying from 10,000-ton ships to motor boats, with a total personnel of 100 officers and 1,000 men. Six *Conundrums* were built, new pipelines were run from the British supply system to take petrol to the coast, and special high-pressure pumping stations were cleverly camouflaged in an old fort, a modern amusement park, and a row of seaside cottages.



Above: winding on the flexible pipe
Below: A "Conundrum" being towed across the Channel

A few weeks after D-day, as soon as the mines had been swept from the approaches to the tip of the Cherbourg peninsula, Operation Pluto went into action. Several lines were established, and in no time petrol was being pumped from Britain to Normandy. Later, when Allied armies were sweeping into Belgium and Holland, the need for quick supplies of petrol in great bulk called for the laying of pipes nearer to the advancing troops. As soon as Boulogne was captured pipelines were laid, and, in the weeks that followed, Pluto's operations expanded rapidly until petrol was flowing along the pipelines from Boulogne to Antwerp, to Eindhoven, to Emmerich, and soon a million gallons a day were being pumped from the Mersey to the Rhine.

The Germans were quite unaware of what Pluto was up to, and they did not consider the harmless-looking *Conundrums* worth their attention. As secret weapons they looked far from impressive as they ploughed through the Channel in the wake of fussing tugs. Pluto's work was by no means easy, for it was often carried out under adverse weather conditions and in



A close view of a "Conundrum"

strong spring tides. But by VE-day over 500 miles of pipeline had been laid and millions of gallons of fuel were made available by this ingenious method for the victorious British armies speeding into Germany. Operations Pluto not only contributed in no small way to a speedy victory, but showed a new method of supply which might be of considerable use in the days of peace.

It's A Way They Have In The Navy

Sailors have queer nicknames for their ships, queer friendly names that pass on from generation to generation. Nelson's famous *Agamemnon*, the ship he loved more than any other, was known to the sailor of the day as "Aggie". Here are a few of the nicknames given to famous British ships:—

Anson, Annie.

Amphitrite, 'Am and Tripe.

Achilles, Egg Shells.

Ark Royal, The Ark.

Chatham, Tiddley Chats.

Furious, Furibox.

Formidable, Formy.

Hermione, Ermy—one.

Hecate, He-Cat.

Howe, Any ——— How.

Iron Duke, Tin Duck.

Indefatigable, Indefat.

King George V, K.G. Five.

Magnificent, Maggie.

Mersey, Misery.

Queen Elizabeth, Big Lizzie.

Royal Sovereign, Tiddley Quid.

Venerable, Archdeacon.

Warspite, Stodger.

Weston-Super-Mare, Aggie-on-a-Horse.

SCIENCE HOLDS *the ACES.*

IT is a paradox of war that nations locked in mortal combat are virtual allies in the unceasing, relentless battle with a common enemy—disease. For the very good reason that disease can win or lose battles and campaigns—history is dotted with instances—a warring State must meet it with every scientific weapon at its disposal.

And so it has been in the Second World War. The past five years have produced tremendous advances in the field of medicine and surgery, chiefly because the needs of armies and civilian populations alike have demanded new and better methods of handling countless thousands of sick and wounded. An eye had to be kept, too, to the possibility of epidemics or even plagues both during the war and in the period of disorganisation and readjustment immediately following. The coming of peace in Europe has brought a rich harvest of new drugs, new surgical techniques and new organisations which will go a long way towards establishing and maintaining a healthy and virile community of nations and at the same time pave the way for even greater discoveries to come.

There have been reports of the presence of typhus at this moment in various parts of Europe, Asia and Africa. Just what the consequences could be if control were to break down and the dread disease spread is appalling to contemplate. One merely has to call to mind the twenty-five million cases of typhus that followed war and



revolution in Russia and the widespread loss of life and devastation in Poland after the last war to realise just how important is the struggle being waged day and night against disease in its every shape and form.

In comparatively recent memory is the great influenza pandemic which swept across the world in three successive waves in the wake of the last war, beginning with a sudden outburst in May and June of 1918, flaring up again in September and October of the same year, and re-appearing in March, 1919. The first wave appears to have broken out almost simultaneously among the nations on the Western Front, spreading to the Central Powers and attaining full fury early in July in Germany, Austria, Sweden, Norway, Denmark, Switzerland and Holland. The first wave was not of a world-wide character (though cases appeared in New Zealand in August), but the second wave spread throughout Europe, America, Asia, and Africa, and was accompanied by a high death rate. The third wave resembled the first, which coincided with the arrival of the first drafts of American troops in Europe. The infection found the necessary incubation places in the

crowded troopships and gained ample opportunity for its spread in the concentration areas and billets of Europe.

The louse-borne disease of typhus has to be combated in the first instance by cleanliness. Armies in the field are continually in contact with the disease, no less in a country like Italy than elsewhere, and of necessity great advances have been made during the present war in organising resistance to it. Not only have there been improvements in the treatment of the disease itself, but new vaccines have been invented which are fairly successful as prophylactics, and extensive research work both in Great Britain and the United States has stepped up the war against typhus to a remarkable degree. Nevertheless, the weight of evidence throughout has been in the direction of showing conclusively that the only true safeguard against typhus is delousing, as without lice epidemics of the disease are impossible.

One of the greatest worries of the commander in the field is the incidence among his troops of venereal disease, and here again science has made tremendous strides under the pressure of wartime conditions. The treatments used in this war are such that the majority of cases can be treated as "out-patients", and indeed many men can treat themselves without being moved from the battle zone, provided they are sufficiently well educated to realise their responsibilities. The sulphonamide drugs, which can be used both as a prophylactic and as a treatment, provide admirable weapons against gonorrhoea but are not effective against syphilis, in the combating of which arsenical compounds which have been used for many years are still called upon, although a certain amount of success has been achieved by combining the drugs with a course of hyperthermy—the raising of the patient's temperature high enough to destroy the bacteria causing the disease. There is strong evidence for the

belief that the results of the American experimentation in a "one-day cure for syphilis" by a combination of chemotherapeutic drugs and artificially induced fever have brought science to the threshold of the final conquest of venereal disease; certainly, wartime experience has revolutionised the ability of the medical world to tackle the problem in peacetime.

Probably no disease is aided by wartime conditions to a greater degree than tuberculosis, which receives new opportunities for its spread in war factories, air raid shelters and other crowded areas and in the increased physical and nervous strain imposed



British hospital at Scutari during the Crimean War

upon whole populations. One of the greatest strides against tuberculosis yet taken is the mass-radiography of groups of people, which has yielded excellent results in Britain during the past few years. By the speedy and efficient X-raying of the chests of hundreds of people at a time many unsuspected cases of infection have been tracked down, thus bringing them

under control before untold harm could be done, and at the same time providing for an earlier and less trying course of treatment for the individuals concerned. Always when a group of people has been examined a small but important percentage has been found to require treatment, and, while radiography in itself will not cure tuberculosis, the post-war possibilities, when numbers of previously unsuspected cases can be taken out of the crowds of everyday life and made harmless to themselves and others, may readily be realised. In the battle against the tubercle bacillus, as in the case of practically every other disease, the whole trend of modern medical thought is to go far outside the sick-room and the pharmacy and to tackle the disease by way of studying not only the individual, but even the whole of society.

Responsible historians have named malaria as one of the major causes of the decline of the Roman civilisation. In the present war, the global nature of which has brought troops of many countries in contact with the malaria-carrying mosquito, the disease has had to be fought vigorously and unremittingly not only in the Pacific and the Far East, but in Europe and Africa as well. Japan's conquest of the Netherlands East Indies, which deprived the Allies of most of the world supply of quinine, made the problem acute from the outset, and in

addition it was known that Germany before the outbreak of war had produced a secret formula for a synthetic quinine substitute.

It was late when the danger was seen in Britain, but British chemists set to work to discover the formula of the German product and succeeded in finding the substitute known as atabrine—but it was being manufactured in only small quantities by the time the supply of natural quinine was sealed off. Fortunately, the United States came to the rescue with mass-production methods, and the drug, which came to be known as mepacrine, quickly became standard treatment in the British armed forces. When nations are no longer at war it is certain that anti-malarial drugs will be put to good use in ridding such countries as India, Burma, Africa, China, and the Pacific archipelagos of this terrible menace to society.

Opportunities provided by the war for study, research and the perfecting of new treatments should result in far-reaching advances in the medical world when peace has been finally restored. There is cause for sober satisfaction in the thought that the one good thing about a war to enforce the unconditional surrender of aggressor nations should be that it has prepared the way for achieving science's ultimate goal—the unconditional surrender of disease.

The Things They Think Of

Latest ideas from the science world:

A synthetic resin glue for wood which sets at room temperature.

* * * *

A machine that prints railway tickets as they are ordered.

* * * *

Floor wax that can be sprayed on large floor areas, leaving a high-gloss, non-slip finish without buffing.

A new chemical compound that "heightens the speed of intellectual processes"—and is a good "hang-over" cure.

* * * *

A method of treating lettuce seed with weak solutions of thiourea to make possible germinations at temperatures as high as 85 to 90 degrees.



farms

THANKS TO NEPTUNE



ON a warm, sunny morning in February, 1931, the business area of Napier, New Zealand, rocked in the throes of one of the most violent earthquakes in the Dominion's history. Whole blocks of buildings were laid low in a matter of a few seconds and great fires were started which completed the destruction. Hours later nothing was left of the town but an appalling heap of smouldering ruins.

Nature has her own way of compensating for her caprices. Sometimes the compensation is munificent, sometimes it is small. In this case she tossed into the laps of the people of Napier a wide tract of land not previously on the map—much after the manner of a mother who spanks her child and then hands it a jam tart to smooth its ruffled feelings. That was the area still known to Napier people by its original name of the Ahuriri Lagoon.

Before 1931 graceful, white-sailed yachts, launches, motor boats and gaily-painted canoes rode the placid waters of the lagoon, which stretched away westwards from the boundary of Napier to the Poraita hills beyond. Then came the earthquake, thrusting the town and its environs an average of seven feet higher than it had been before—and the shallow lagoon basin was left, literally speaking, high and dry. In the few convulsive seconds of

the upheaval an area of close on eight thousand acres had been added to the 'quake-torn face of the district.

Not that Nature completed the reclamation of the lagoon—that was to be done later, by the hand of man, when the possibilities of the new area impressed themselves on the Napier Harbour Board, to whom the unexpected legacy had fallen, and the Government, casting around for suitable unfertile lands to bring into profitable employment. Today crops sway in the sea breeze and sheep and cattle graze quietly on what fifteen years ago was ocean bed. Where pleasure craft once reigned supreme and weekend picnickers gathered in pleasant freedom from workaday cares, modern farming science has stepped in to develop and sweeten the soil of the former sea bed, and to lay out farm lands which seem likely—for highly satisfactory results have already been achieved—to prove the productivity of the area beyond question. Some day, possibly in a year or two, it will be broken up into farm holdings and offered to soldier settlers under rehabilitation plans, but that step will not be taken until the present developmental programme has been completed.

The breaking in of the lagoon lands has afforded an interesting study in farming experimentation. Leasing the lagoon from the Harbour Board at a peppercorn rental, the Government first attended to the task of completing its reclamation and drainage, for which purpose three hundred and fifty miles of drains were hollowed out, and a large pumping station installed. On the western border big stop-banks were thrown up, forming a catchment area against the hills to trap water running off the Poraite slopes and lead it down a main outfall channel to the sea. In order to wash the land free of the salt content it had accumulated during centuries beneath the sea artesian wells were bored to assist the annual Napier district rainfall of twenty-five inches or so, and these are now paying additional dividends by providing the necessary irrigation for the pasture and crop lands.

Tests after a few years showed that the salt content was steadily declining and that the soil was becoming sweeter and more fertile year by year. And so Government experts began experimental cropping. Oats, barley, lucerne and leguminous crops were tried; other areas were sown in grass. At first the results all through were by no means dazzling, but they were certainly encouraging, and the scope of the experimentation was accordingly broadened. In the meantime it had been found that asparagus thrived in the lagoon soils, and a sizeable area was laid out which is today producing asparagus of remarkable quality. Still

later, when the grass lands had become sufficiently established, stock was introduced—gingerly at first, but in increasing numbers as the new pastures became more lush. Now they carry thousands of sheep, including a large flock of breeding ewes, and a substantial head of cattle. A small area has been put down, with satisfactory results, in fruit plantations, while miles of shelter belts planted to give the area the protection it needs are making strong progress.

Wartime shortages in both manpower and fertilisers have hampered the whole experiment but have not halted it, and when conditions return to normal the project will be speeded up. As yet barely four thousand acres have been developed of the land enclosed by the stop-banks, but had it not been for the war it is reasonably certain that the whole of the five and a-half thousand acres embraced in the Government's original scheme would by now have been developed. When the developmental phase has been completed it is proposed to subdivide the lagoon into small holdings of up to fifty acres each, for opening up either as farms or as market gardens.

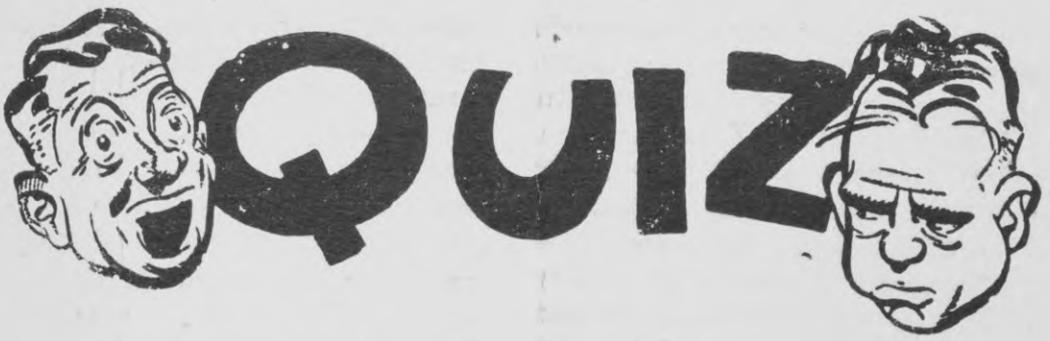
Progress will be watched with interest in the next few years, during which the results of the experimental programme will become manifest. The day should not be far off when a new settlement will spring up of families gaining a livelihood from soil over which Neptune once held undisputed domain.

Strange But True

Frau Gusta Wasserlauf of Hamburg kept her mouth full of water for a week to keep from nagging her husband.

"R.Azor the Barber"—sign above a barber's shop in Bolivar, Pennsylvania.

The trans-continental railway in Australia which links Sydney and Perth, runs for 330 miles across a stretch of South Australia's semi-desert, the Nullarbor Plain, in a dead straight line.



QUIZ

1. In what city is the Alhambra?
2. What famous writer was born when Halley's Comet appeared last century, and died the next time it was seen?
3. Which are the five greatest wheat-producing countries in the world?
4. Was Shakespeare ever poet laureate?
5. If you asked your baker for a quarter loaf, would he give you one weighing two, two and a-half, three and a-half, four, or four and a-quarter pounds?
6. England and New Zealand have played twelve cricket matches. How many has New Zealand won?
7. A new word has come into use in aviation language. It is "gunk", and the sound of it should tell you that it is (a) a device used in navigation; (b) a new type of gremlin; (c) exhaust outlet for jet-propelled planes; (d) a glue used in place of rivets.
8. When a bridge was first built across the Niagara Falls, was the first rope taken across by rocket gun, boat, swimmer, balloon or kite?
9. Who said: "What shall we do with this bauble? Here, take it away." To whom or what was the speaker referring?
10. Which is the capital of Bulgaria—Bucharest or Budapest?
11. Which was the last New Zealand school to win the coveted Earl Roberts Trophy for shooting amongst Empire schools? (a) Nelson College; (b) Scots College, Wellington; (c) Auckland Grammar School; (d) King's College, Auckland; (e) St. Bede's College, Christchurch; (f) Borstal Institute.
12. What is a wapiti, and of what country is it a native?
13. Which of the following have succeeded in swimming the English Channel? (a) B. C. Freyberg; (b) Mercedes Gleitz; (c) Lily Coplestone; (d) E. H. Temme; (e) Johnny Weismuller.
14. In what year did New Zealand silver coins first go into circulation: (a) 1901; (b) 1910; (c) 1919; (d) 1928; (e) 1933?
15. The name of "Opai" Asher might not mean a great deal to our generation, but it did in our fathers' time. For what was he famous? (a) Rugby; (b) Swimming; (c) Golf; (d) Soccer; (e) Boxing; (f) Cricket.
16. What great All Black frequently wore a hat when playing?

(Answers on Back Cover)

ANSWERS TO QUIZ

1. Granada, in Spain.
2. Mark Twain (Samuel L. Clemens) ; born 1835, died 1910.
3. U.S.S.R., U.S.A., China, India, France (this order is based on figures for 1941-42).
4. No. Samuel Daniel held the position in Shakespeare's time.
5. A four-pound loaf.
6. None. England has won three, and nine have been drawn.
7. A glue used to replace rivets.
8. By kite.
9. Cromwell, when speaking of the mace of Parliament.
10. Neither. Sofia is the capital of Bulgaria.
11. Scots College, Wellington, in 1938.
12. A species of red deer which lives in North America.
13. Mercedes Gleitz and E. H. Temme. Temme an Englishman is the only person to swim the Channel from England to France and also from France to England.
14. 1933.
15. Rugby. He is considered to be one of the greatest backs New Zealand has produced.
16. W. J. Wallace.



CUE is a fortnightly bulletin compiled by HQ NZERS. It is for use within 2 NZEF only and its purpose is to provide data and information of interest to NZ troops. Topical subjects, NZ and local, will be regularly covered and contributions of articles, verse, sketches, etc., will be welcomed. Suggestions for the inclusion of information in popular demand will be met wherever possible.