

Station.	Call Signal.	Station.	Call Signal.	Station.	Call Signal.
S.S. Waihora	VMW	S.S. Clan Macmillan	XKV	S.S. Northumberland	ZBL
L.S. Singapore	VPW	S.S. Sumatra	XUV	S.S. Leitrim	ZBT
S.S. Dinoga	VXU	S.S. Tremeadow	XUJ	S.S. Haightown	ZDA
S.S. Dumosa	VXV	S.S. Canadian Pros- pector	XWL	S.S. Havre	ZEW
S.S. Dundula	VXW	S.S. Bellfield	YDZ	S.S. Briarwood	ZGD
S.S. Makarra	VXX	S.S. St. Dunstan	YEL	S.S. Seattle	ZJA
S.S. Macumba	VXY	S.S. Trevaylor	YGG	S.S. Ariosto	ZJB
S.S. Karuah	VZH	S.S. Tuscan Prince	YJG	S.S. Turbo	ZNA
S.S. Alacrity	VZI	S.S. Canastota	YSO	S.S. Barotse	ZPR
L.S. Morobe	VZK	S.S. Huntress	YVF	S.S. Kingsmere	ZRB
S.S. West Brook	WLI	S.S. Kumara	YWT	S.S. Trefusis	ZTW
S.S. Liberty	WCOO	S.S. Vardulia	YXS	S.S. Yonne	ZWV
S.S. West Humhaw	WZAE	S.S. City of Newcastle	YYU	S.S. Clan Macmaster	ZXX
S.S. City of Corinth	XEX	S.S. Anamba	ZAV	S.S. Matra	ZZD
S.S. Oтира	XFD	S.S. Abedesa	ZAZ	S.S. Massis	ZZE
S.S. Kaikouai	XJW	S.S. Devon	ZBJ	S.S. Grelwen	ZZI
S.S. Trevoise	XKD			S.S. Racia	ZZU

"SEA, LAND and AIR"

THE AUSTRALIAN NATIONAL MONTHLY

— OF —

TOPICAL INTEREST

Edited by S. E. TATHAM.

CONTENTS

(All Rights Reserved)

	Page.		Page.
Naval Review on Sydney Harbour	247	Electro-Magnetic Brakes for Aero-planes	282
The Northern Territory of Australia	251	Wireless in Fiji	284
Norfolk Island	254	Queer Tales and Legends of Australian Aborigines	285
Missing Steamer "Canastota"	257	Shipping Notes	289
New Zealand Affairs	259	Important News for Wireless Amateurs	293
Naval Appointments	260	Aviation in Australia	294
History of England	261	Motoring	298
Coastal Shipping Disasters	269	Wireless Institute of Australia	304
Bananas	275	List of Wireless Officers Attached to Vessels of the Australasian Mercantile Marine	312
Aerial Attacks on Warships	277	New York Times Radio Champion	314
Aerial Survey	278	Questions and Answers	316
Yachting and Wireless	280		
Here and There	281		

The Editor will be pleased to receive, for consideration, contributions on Aviation, Wireless, the Navy, Mercantile Marine or other subjects within the scope of *Sea, Land and Air*. All MSS., photographs, drawings, etc., submitted must bear the sender's name on back and be accompanied by postage stamps for return if unsuitable. Although every care will be taken of all contributions received, no responsibility* is accepted.

All business communications should be addressed to

THE MANAGER, THE WIRELESS PRESS, 97 CLARENCE STREET, SYDNEY.

All Editorial communications should be addressed to THE EDITOR, *Sea, Land and Air*, 97 CLARENCE STREET, SYDNEY.

Sole European Agents; THE WIRELESS PRESS, LTD., 12 AND 13 HENRIETTA STREET, LONDON, W.C. 2.

Sole Agents for United States of America: WIRELESS PRESS INC., 233 BROADWAY, NEW YORK. Singapore: KELLY & WALSH.

Mention *Sea, Land and Air* when communicating with Advertisers.

SUPER-SENSITIVE

"Brown" Radio Phones

Latest Improved Adjustable Reed and Diaphragm Types



LIGHT WEIGHT—10 ozs.

The most comfortable and most sensitive 'phones in the world

As used by the British Admiralty

Any resistance up to 8,000 OHMS from stock, up to 24,000 OHMS to special order

SOLE AUSTRALASIAN AGENTS:

AUSTRALECTRIC LIMITED

97 CLARENCE STREET, SYDNEY

Conquest

THE BRITISH MAGAZINE OF POPULAR SCIENCE

THE PUBLICATION that jumped to the front rank in a day **1/6 MONTHLY**

CONQUEST records, describes and explains all the great achievements of Modern Science, Invention and Industry. It takes its readers "behind the scenes," and shows them "how it is done."

CONQUEST is a magazine for the men and women who want to be well-informed and to be able to take an intelligent interest in the triumphs of human endeavour.

Every page as interesting as the most fascinating romance. A host of photographic and other illustrations render the contents still more attractive and clear.

THE MOST READABLE MAGAZINE
Subscription rate—20/- per annum, post free.

Send 1/9 for specimen copy to

THE WIRELESS PRESS.

97 CLARENCE STREET, SYDNEY.
422 Chancery Lane, Melbourne; Australasia Chambers, Wellington.

The Broken Hill Proprietary Company Limited

Mine Owners Iron and Steel Masters

Manufacturers of	
PIG IRON BLOOMS STRUCTURAL STEEL CHANNELS BEAMS TEES JOISTS RAILS FISHPLATES ETC.	INGOTS BILLETS ROUNDS FLATS SQUARES ANGLES Reinforcing Material from $\frac{1}{4}$ to $1\frac{1}{4}$ ins. SULPHATE OF AMMONIA ETC.

IRON AND STEEL WORKS - NEWCASTLE, N.S.W.
 IRONSTONE QUARRIES - - IRON KNOB, S.A.
 LIMESTONE QUARRIES - - DEVONPORT, TAS.
 SILVER LEAD MINE - - - BROKEN HILL, N.S.W.

BRANCHES:

LONDON - 3 Great Winchester St., E.C. 2
 SYDNEY - 28 O'Connell Street
 ADELAIDE - 75 King William Street

HEAD OFFICE:

**Equitable Building, Collins Street
MELBOURNE**

Cables and Telegrams: "Gambroon," Melbourne

Mention *Sea, Land and Air* when communicating with Advertisers.

SEA LAND AND AIR

AUSTRALIA'S
NATIONAL
MONTHLY

VOL. IV.

JULY 1, 1921.

No. 40.

NAVAL REVIEW ON SYDNEY HARBOUR IMPRESSIVE SPECTACLE



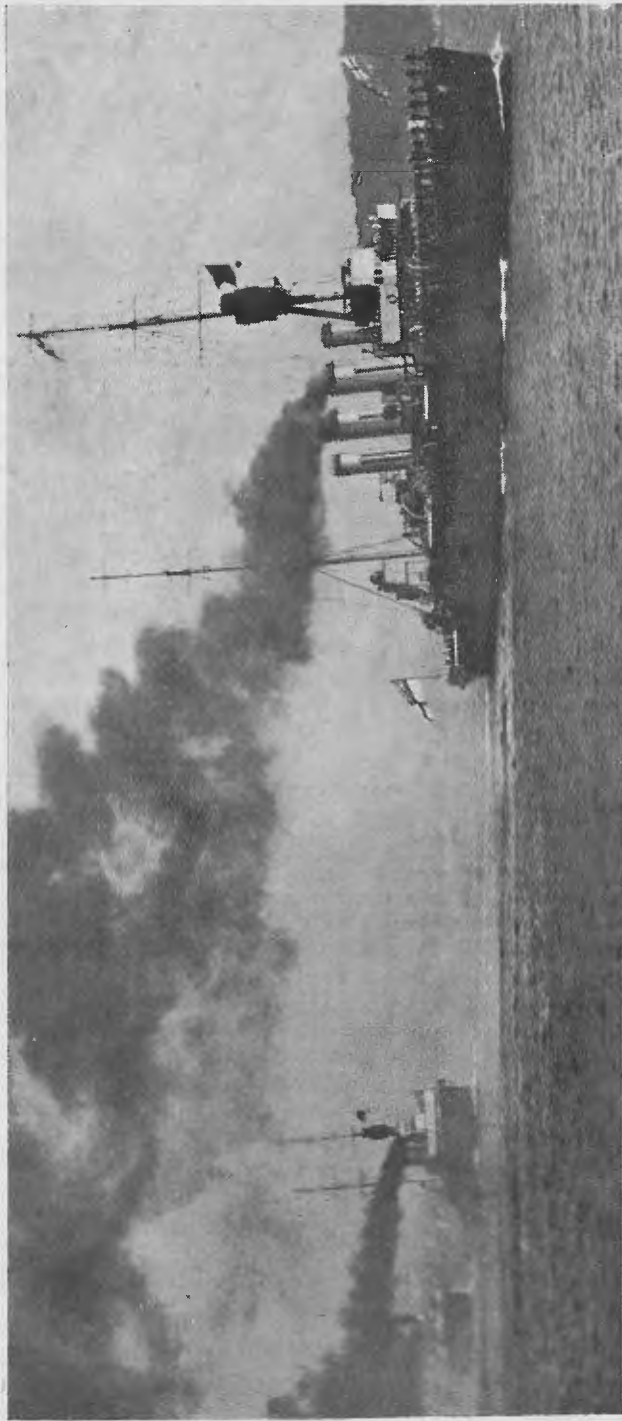
His Excellency the Governor-General Lord Forster, P.C., K.C.M.G., on the Bridge of H.M.A.S. "Marguerite" Reviewing H.M.A. Fleet. Behind His Excellency is Commodore Salisbury H. Simpson, D.S.O., R.N., of the "Marguerite."

Those who witnessed the departure of the Australian Fleet from Sydney on Saturday, June 18, will long remember the strikingly impressive spectacle.

Can it be wondered that as the significance of the occasion was realised one's mind went back to the time, over seven years ago, when some of those self-same ships crept silently away from the shelter of Sydney Harbour, to receive their baptism of fire in, to them, hitherto unknown waters. They were then untried, and in size and number were but small in comparison to the great navies of other countries, but their crews were strong in the qualities of patriotism, courage and resource, out of which the British Navy, from a very small beginning, has grown to its present magnificent might.

The record of the part which our ships played in the dreary, dangerous work of patrolling the mine-strewn waters of the North Sea, and maintaining the strict blockade of the sea pirates' lair in the Adriatic, may possibly not be fully realised, but its value cannot be denied. Then again, is there anyone whose blood does not surge more swiftly through his veins as he recalls the magnificent work of the cruiser *Sydney* in ridding the seas of the German raider *Emden*. It was not without sacrifice that our ships played their part in that great struggle and two of their number, the submarines *A.E.1* and *A.E.2* paid the grim toll of naval warfare.

This time the *Fleet* was leaving on a mission of peace, and their departure made



The Flagship H.M.A.S. "Melbourne" leading the Fleet down the Harbour in line ahead formation. Following are the "Brisbane," "Sydney" and the flotilla of destroyers led by H.M.A.S. "Anzac." Owing to the thick haze the destroyers are not visible in the above photograph taken from the "Marguerite," from which the Governor-General took the salute. Along the side of the "Melbourne" stands the ship's company, and up on the aeroplane platform is seen the armed guard with fixed bayonets, the whole presenting a very impressive spectacle.

a striking picture, with the ships looking spic and span in the morning sun, as in line ahead formation they passed down Sydney Harbour.

H.M.A.S. *Marguerite* quite early took up a position at the saluting base, opposite Shark Point. Here she dropped anchor, and half an hour later the Governor-General, accompanied by the Lieutenant-Governor (Sir William Cullen), Commodore H. McI. Edwards, Captain Lord Digby and Captain Traill, came on board. They were received by Commander Salisbury Simpson.

Lord Forster was attired in the uniform of a Commander-in-Chief of the Naval and Military Forces, while Captain Traill was dressed in full Highland regimentals.

The Governor-General and party had not long taken up a position on the bridge before the booming of guns announced the approach of the Fleet. The first to come into view was the flagship H.M.A.S. *Melbourne*, flying the broad pennant of Commodore Dumaresq, C.B., C.V.O., R.N. She was followed by the *Sydney*, *Brisbane* and flotilla of destroyers, the *Anzac*, *Success*, *Stalwart*, *Tattoo* and *Tasmania*. The last of the 19 guns was booming out a thunderous salute and throwing out little wisps of snow-white smoke under the clouds of black smoke which ascended from the *Melbourne's* funnels, as the flagship steamed slowly past the saluting base. As the echo died away the National Anthem, played by the bandsmen on the flagship, sounded across the water and the men, marshalled round the deck, responded instantly to the hearty hip-hip-hip, with three ringing cheers. Standing high up on the aeroplane platform of the *Melbourne* a small party of blue-jackets with fixed bayonets, added a final touch of impressiveness to the picture as the *Melbourne* faded slowly out of sight. As each of the cruisers passed, the same hearty cheers rang out across the still morning air, and the same impressive spectacle of the men standing, with hands clasped, around the deck was witnessed.

The early hour at which the Fleet departed prevented many people from witnessing the review. This is to be regretted, for the reason that the people of Sydney have frequently demonstrated their interest and enthusiasm in the movements of

the Fleet. They can never forget that, largely in its safekeeping rests the future of this fair young country, whose people are as yet a mere handful in control of one of the world's richest continents. With a coastline nearly three times as long as that of America, Australia's future safety unquestionably lies in naval defence. This is a fact which cannot be too strongly emphasised, and those who witnessed the departure of the fleet last month were able to appreciate how great must be its growth before we can rest secure in the knowledge that our coastline is effectively patrolled. On one point we need have no misgivings. In our young Australian manhood we have the material to man our ships, which is, after all, the most essential requirement to ensure a powerful, well disciplined Navy.

War Medals Presented.

When the last of the ships had passed the Governor-General descended from the bridge of the *Marguerite* to the quarter-deck, where he presented thirty British war medals to men—all of them Australian ratings.

Lord Forster's Appreciation.

The Governor-General, Lord Forster, expressed himself as highly pleased with the review and as evidence of his appreciation despatched the following message to the Commodore commanding the Fleet:

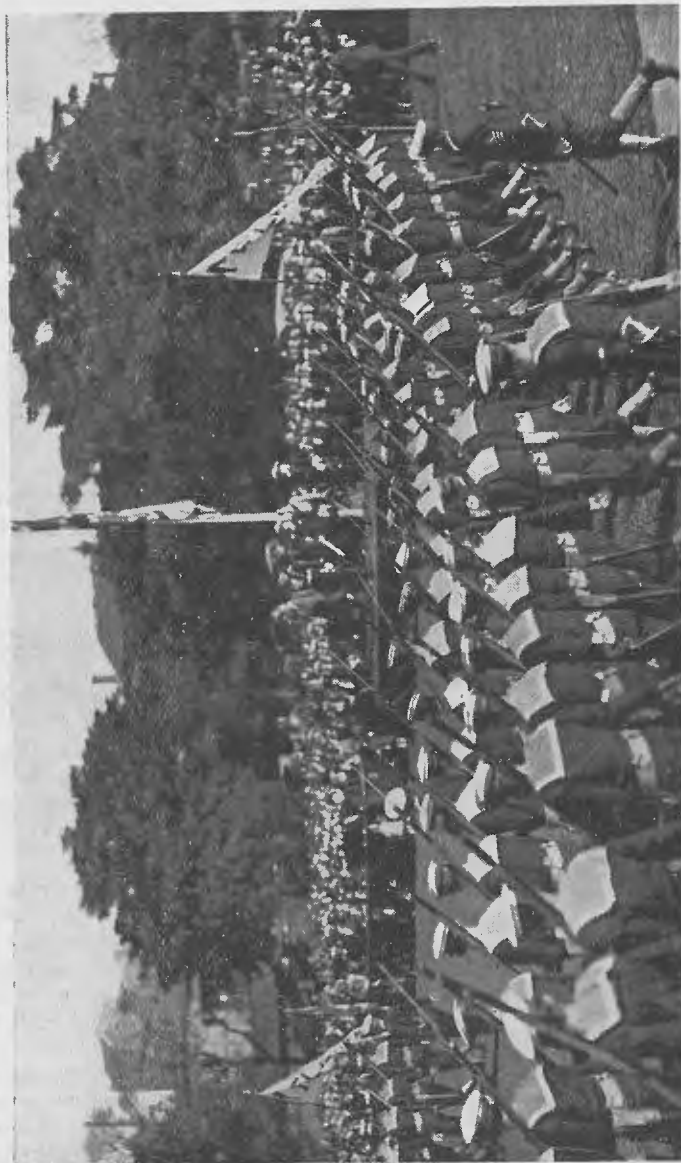
"I wish to express to you, the captain, officers, and ships' companies of H.M.A. Fleet, my appreciation of the smart appearance of the Fleet and the excellent station keeping on leaving harbour this morning. The main brace is to be spliced in H.M.A. ships under your command."

Commodore Dumaresq's reply was:

"May I beg to express how deeply I and all under my command appreciate the honour of your Excellency's presence on many Naval occasions this week. The main brace will be spliced in accordance with your Excellency's order."

Splicing the main brace, means in the language of the Navy, "shouting" for the men all round, and it is needless to add that the spirit of goodwill which such an order displays is keenly appreciated.

NAVAL REVIEW IN SYDNEY DOMAIN.



The March Past.

The Naval Review in the Sydney Domain on June 16, two days prior to the departure of the fleet, was a most brilliant function. His Excellency the Governor-General Lord Forster, P.C., K.C.M.G., who wore the uniform of Commander-in-Chief of the Australian Naval and Military Forces, reviewed about 600 officers and men. He was accompanied by the State Governor Sir Walter Davidson, K.C.M.G., and Commodore Dumaresq, C.B., C.V.O., R.N. His Excellency was delighted with the bearing of the men and youths, and subsequently despatched the following message to the Commodore commanding H.M.A. Fleet: "I shall be glad if you will convey to the commanding officer, officers, petty officers and men comprising the battalion and field battery at the review, my appreciation of their steadiness on parade and the precision with which the various movements were carried out."

THE NORTHERN TERRITORY OF AUSTRALIA

A TRIP FROM DARWIN TO THE KATHERINE RIVER

BY

HUDSON FYSH

THE weekly train for the Katherine River was due to leave Darwin at 8 a.m., for the first day's run of 160 miles to Pine Creek. The morning was typically hot and damp for Darwin in January, with low monsoonal clouds passing over the bay, heralding an early continuance of the summer downpour, which had deluged the town for the past week.

On this particular Wednesday the train was crowded; the first-class compartment overflowing with bushmen, station owners, and managers, who were on their way back to the interior after a trip to the luxurious South. Perhaps for years they would not even see Darwin again. Once the railhead of Katherine is reached, the bush claims its own, and envelops them for another period.

At last the guard waved his flag, the engine gave a long whistle, and, accompanied by cheers from friends left behind, which one vigorously replied to from the crowded carriage windows, the train drew out of the station. It was a merry party that waved good-bye to Darwin, as one, more thirsty than the rest, broached a case of refreshments which had been conveniently placed in the centre of the carriage corridor. Thirst is rather a liability to those who sojourn in the Territory, which is always unquenchable, and the result is invariably the same, whether one tries the experiment of its quenching in Darwin or Pine Creek with supplies from the hotel, or out in the Never-Never, with long draughts from a waterbag hung beneath some shady branch. However, the effort to conquer is never seriously given up; at least, not in Darwin, where the consumption of beer per head is by far the largest in the Commonwealth.

Two and a half miles out the railway workshops were passed. The last of Darwin is left behind, and the forest entered. For mile after mile the track was over undulating country, clothed with unlimited forest trees of various species. Here and

there are seen hanging from some lofty branch, festoons of brilliant red mistletoe, giving a touch of colour to the sombre surroundings, while a delightful break in the sea of timber is made by the crossing of some creek, fringed with lofty bamboo, ponderous palms, and matted with patches of creeper-entwined jungle.

At length, the "40-mile" is reached, and the train pulls up at the fine permanent lagoon, which is set in pretty surroundings of palm and jungle, to take in water for the engine. A pile of tin ore stands alongside the line, ready for transmission to Darwin on the return journey. Here and there along the track, at different sidings, we see these piles of ore, which represent the hard-won earnings from the different small workings in the district.

After passing over the iron bridge at Adelaide River the train pulls up at the siding, and advantage is taken to have some lunch fortunately brought from Darwin, and to have a short walk round. Along the banks of the river are several promising gardens, where a supply of fruit and vegetables are growing, some of which finds its way to Darwin by Friday's train.

The river was running strongly at the time of our visit, in the wet season, but gets very low towards the middle of the dry period. At present a dam is being thrown across the stream for water conservation purposes. Many a Territory river which, in the wet season, presents the sight of a fine, full-flowing stream, towards the end of the winter is nothing more than a dry river bed, with chains of unconnected lagoons. The yearly rainfall in this district is over 60 inches, but unhappily it all falls during the five summer months, while there are five months during which no rain at all falls. Meanwhile the tropical sun blazes down, drying everything up, till the landscape is one of dull grey forest and waving white grass, as dry as tinder. Then the rains come again and

effect a remarkable transformation; in fact it does not seem the same country, so complete is the change.

The coastal belt is not so suitable for stock raising as the interior. Such a phenomenal rainfall in the warm tropical climate produces a quick growth of long, rank grass. The tall spear-head variety grows from seven to twelve feet high, and, in places, covers the whole landscape, while only small patches of shorter grass are seen here and there. No doubt further stocking would have beneficial effects, but the trouble is that the country will carry very little during the dry months of the year, and this makes light stocking a necessity. A greater portion of the grasses in this part of the coastal belt are more or less rank, and the country is what stockmen term "sour"; the stock simply wandering about in grass up to their heads, trying to find something to eat which they will relish. However, there are some good patches of soil, particularly along the northern rivers, where the production of many tropical products would be assured of success, provided that suitable labour was obtainable. At present little is done even in the direction of gardening. Even the Chinaman has been discouraged, and at present a market is lacking for any extensive production.

Leaving Adelaide River, we soon pass the river plains; they are treeless grass-covered flats, set with occasional giant ant-hills, and small clumps of palms. Some distance further down the river from where the railway crosses, the plains open out into large and perfectly level open spaces, covered with a tangled and luxuriant mass of tall grass and matted herbage.

In the summer months these plains are more in the nature of huge swamps, over which myriads of wild fowl circle when disturbed. They also form the feeding grounds for many a herd of roaming buffalo which can be seen dotted over the plain, safe from the rifle of the hunter, in the fastness of bog and marsh. Several stops are made to drop the mail at small sidings. Insignificant mining is being worked out from many of these stopping places, but nothing of any magnitude is attempted. Soon we begin to run through more hilly country and approach the siding of Burrundee. Standing out on the observation platform one has a good view of the country traversed. The hills

which a month ago were clothed in dry, yellow grass, with brown patches of shingle and rock showing here and there, have now changed their mantle to one of brilliant green. Now a creek is passed which is set in steep, looming banks, fringed with paper-bark, and fresh-water mangrove trees. Meandering on, it passes through a grassy glade, studded with clumps of bamboo. On one side the glade stretches away to the timber in the distance. Large red-brown kangaroos dash through the long grass, and on up the hillside they turn and sit up watching the train, curiosity having overcome their fear.

Pine Creek.

Towards evening the train runs into the little mining township of Pine Creek, and we make our way over to the State Hotel, which is remarkably comfortable, considering that we are fast running out of civilisation. The manager's wife welcomes us at the door, pointing out our rooms, also the shower, which is well patronised after the hot journey from Darwin. Pine Creek has the last hotel which is to be found on the Darwin side of the interior, and tonight the vast army of "dead marines" which rest in a quiet spot in the hotel yard, will be considerably added to. Two of us withdrew from the revelry, and took a walk around the town, and also paid a brief visit over the hill to China-town. All around Pine Creek are to be seen little mounds which show where the gold seekers have been busy. Even the main street has been prospected, while the rocky hill behind the town, with its mounds, cuts, and shafts crowding the hillside—but now all deserted—bear silent testimony to days when the gold fever ran high and Pine Creek was a prosperous mining township. Now, practically all that is left of a once busy population, is a handful of Chinamen and a few white prospectors and stockmen from the surrounding district. A few small gold washings exist, the nearest one being the "Enterprise." We walked up the hill to look at the shaft, the overhead gear of which could be seen standing out against the skyline. The Government have taken over the mine, and are at present engaged in proving it. Results up to the present are said to be satisfactory. Many gold shows, all abandoned, exist in the district, more often the miners having worked out the surface or abandoned the

claim when water was struck. No capital seems to be available for the working of a real mine, which results in the present scratched over appearance of the field, nor is capital likely to be attracted while the present prohibitive labour conditions, both in cost and production, exist. Cheap labour seems to be the only hope of reviving mining and opening up some of the many rich mineral areas which undoubtedly exist in different parts of the Territory. Gold, wolfram, tin, copper, besides other metals exist in quantities which were at one time regarded as payable, within easy radius of the railway line. Much more could be mentioned about these fine shows which have been held up solely by transport and labour difficulties.

After visiting the "Enterprise," we descended the other side of the rocky hill, by a narrow and winding track and at length came to China-town. The town consists of a number of hovels built of iron sheets and flattened-out kerosine tins, held together with rough-hewn timber from the adjacent bush. The overflow from a nearby spring trickles across the road, on each side of which are the township dwellings. Night has now fallen and as we make our way up the dusty street, several skinny-looking mongrels run out at us barking, while close-by an old Chinaman strums a banjo for the benefit of a group of celestials squatting in the shadows of a low verandah. At the far end of the street stands the Joss House. Two dragon-shaped forms, rudely cut out of tin, guard the doorway, while within, dimly lit up by the flickering light, is seen the gaudily-painted figure of the Joss. As we pass on, the pungent odour of burnt incense floats out through the open doorway and we are glad to be away from the town with its baffling mixture of unpleasant smells.

Katherine River.

The next morning at eight, the train journey is resumed. Little change in the undulating country is seen; but we are fast running out of the coastal belt and tropical vegetation area. The clumps of bamboo and palm are missed, while the huge green leaves of the tropical cabbage gum are no longer to be seen. After passing several uninteresting sidings, the whistle blows and we know that Emungalan—which is the railhead station—has been sighted. Running through country strewn with jagged limestone outcrops the

station is reached. All is bustle as the carriages quickly empty themselves and their late occupants mingle with the crowd of stockmen on the station platform. Small groups of horses with reins trailing on the ground are seen standing around, while others already saddled and packed are idly waiting, hitched in the shade of some straggling gum near by. Many of the newcomers, who were clad in the garb of the stockman—elastic-sided boots, spurs, open-necked shirts and battered broad-rimmed felt hat—had already found their waiting horses and were busily engaged in "packing-up." Others stood exchanging southern news with old pals, while some strolled over to the local "boarding-house" for lunch. So the party breaks up, and before the day is out the members of it are on the way toward their destinations. One man was making towards the Roper River, another for Hodgson Downs, 170 miles away; while a third was bound for the West Australian border, and hoped to be back in two months' time, after covering a total distance of 700 miles by buggy and pack horse. The Booraloola mailman also started out on his 500-mile journey.

The Territory is certainly a country of great distances. One speaks of travelling 500 miles on horseback without conveying anything out of the ordinary. The difficulty and cost of transporting stores and materials over these vast distances can easily be imagined. Owing to the absence of roads and bridges, all traffic is held up during the wet summer months, in fact in the northern part of the Territory it is a matter of "sit down" for everyone while the "wet" is on. About April, when the "dry" starts, is a time of general activity. All those who have been away, return to their stations, and cattle and horses are mustered. Branding and marking are in full swing, while the drovers start off with the cattle on their long trips to Queensland or South Australia. We are now at the railhead of the Territory's little piece of line, and on the threshold of better pastoral country. As one leaves Katherine and travels southwards along the overland telegraph line, the country is all suitable for stock raising, and when Sturt's Plain, another 150 miles further south, is reached, excellent pastoral country, with a good rainfall is met with. It is a country full of promise, and will form a wonderful new asset to Australia when communication has been provided.

NORFOLK ISLAND

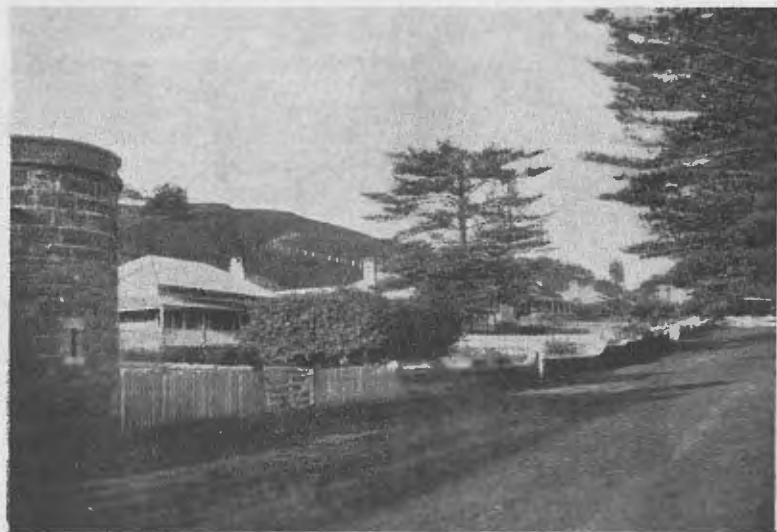
AN HISTORICAL SKETCH

BY
FRANK REID.

The Norfolk Island pine has found its way to most countries of the world; but to those who admire its stateliness, does it occur to ask "Where is Norfolk Island, and of what character are its people?" That fact may be as interesting as fiction, the following brief sketch will testify.

Geographically, Norfolk Island lies about nine hundred miles from Sydney. It is five miles long, three across, and possesses an area of over seventeen square miles, bounded by precipitous cliffs,

themselves at once to the soil, with results which answered the highest expectations. At several critical junctures afterwards, the main settlement at Botany Bay was saved from starvation by the arrival of supplies of wheat, potatoes, and other produce from the little island. From time to time fresh batches of convicts were sent out from Australia, until in 1793 the population numbered 1,008. In that year the produce amounted to 2,000 bushels of wheat, fifty tons of potatoes, and considerable quantities of other crops. In 1803 an



A Road on Norfolk Island.

against which endless breakers roll. The soil is rich and undulating, bearing plants of many varieties and groups of the magnificent pines known all over the world.

Captain Cook discovered the island one hundred and forty-six years ago, and a week after the occupation of the settlement at Botany Bay in 1788, a contingent of the convicts landed there was despatched thither. This contingent made a very small party, the total being nine male and six female convicts, together with nine officers. These first settlers addressed

order from the Home Office directed the settlement to be broken up. Most of the residents were emancipists, or persons who had fulfilled their term of punishment, and it was officially considered that they would make good settlers on the main land of Australia or Tasmania. They were offered land in either of these places equal to that which they owned on the island; but so reluctant were they to leave the scenes of happy years that pressure had to be applied, and it was not until 1806 that the island was vacated.

For twenty years the island now ran to waste. Looking back from to-day, one sees how egregious was the blunder which drove the emancipists from what they had made a home. Many of them did well in Tasmania and Australia afterwards; but many returned to evil ways, and that which was a garden in the wild seas, became once more a place of desolation and decay. In 1826 the island was made a settlement for prisoners condemned to penal servitude in New South Wales. Prisoners condemned in Great Britain were sent to New South Wales, and to satisfy an official regulation of the time, those condemned in New South Wales were thus sent to Norfolk Island. The eighteen succeeding years made a terrible chapter of

assize in the same year. The little island, which had had eighteen years of such peace and happiness that men longed to make it their lasting home and from which they were only removed by absolute official pressure, became in these later eighteen years a plague-spot of human degradation, where the wildest and blackest passions brooded. And in the first period, as in the second, the material officialism operated upon was of convict pattern, leaving it to be seen how important a part system plays in the punishment and management of criminals.

In 1844 the island was declared to be no longer a dependency of New South Wales, and was by letters-patent annexed to Tasmania; but nine years afterwards,



View from top of Norfolk Island.

crime and its expiation. The island became the terror of civilisation. Death was preferable to living there. Dr. Ullathorpe, Roman Catholic Vicar of New South Wales, and afterwards Bishop of Birmingham, England, went to the island in 1834, in the course of duty. A mutiny had broken out, in which nine of the insurgents were killed and twenty-nine were condemned to die. Of the twenty-nine, eleven were executed. "The twenty-nine men," Dr. Ullathorpe writes, "were confined in three cells. I read the names of eleven who were to die. Each thanked God." The cruelties practised here made demons of men. Men drew lots to see who would kill the other. Judge Burton attended to one hundred and thirty capital cases at one

on the cessation of transportation to Tasmania, the straggle of inhabitants was withdrawn, and once more the home of the great pines was given up to desolation. On this occasion, however, it was quickly revisited. About the time the small band of convicts was sent from Botany Bay to Norfolk Island to experiment for a habitation, the *Bounty*, an armed ship under the command of Captain William Bligh, quitted Otaheite with a cargo of breadfruit trees, and a mutiny occurring on board, fell into the hands of the daring outlaws. The captain and eighteen men were put into an open boat and sent adrift. The *Bounty* was afterwards burned, and several of the mutineers were arrested and executed; but nine who had escaped,

settled on Pitcairn Island, where twenty years after, their descendants were discovered, now grown to a population of 198—96 males and 102 females. On Tasmania withdrawing her subjects from Norfolk Island, arrangements were made for transferring the offsprings of the mutineers from Pitcairn Island thither; and in three years the transfer was completed, the dependency under these new conditions being again placed under the Governor of New South Wales, with instructions that the people were to be allowed to develop after their own ideals. Governor Denison displayed special interest in the starting of them on sound lines, while fulfilling to the letter his instructions, which, to the average mind of sixty years ago, must have seemed dangerously experimental. The franchise was given to all persons of twenty-one years of age and with ability to read and write. Education was made compulsory under a fine of sixpence a day, the accumulated fines going towards the remuneration of the schoolmaster, who was guaranteed a minimum of ten shillings poll-tax per child per annum. It was forbidden to manufacture intoxicating drinks except for medicinal purposes; and if it were attempted to introduce them by sea, they were to be seized and poured into the harbour.

Seemingly, these measures of political and social government suited well the circumstances of the island and the temperament of the people, for with slight changes, progress has been the rule. Originally, married and single were given a certain number of acres; but now the unmarried receive only twelve and a half acres, while

the married receive twenty-five, and with both, conditions are laid down demanding, under pain of forfeiture, annual improvements up to certain values. In addition to the population proper, there reside on the island a couple of hundred natives from adjacent parts connected with the Melanesian Mission, but the affairs of the island are conducted without any regard to them. The chief magistrate is provided with two counsellors to advise him, and there is a jury of seven elders, over twenty-five years of age, to deliberate and pronounce upon the guilt or innocence of accused persons. Some years back a New South Wales Judge was commissioned to go to the island to hear two cases of exceptional gravity. The Judge found on that occasion that the permanent force of the island consisted of one policeman, and that no gaol existed. Having to sentence a girl to a term of nine months' imprisonment, he was accordingly obliged to order her to serve the sentence in a private household, where it was agreed she would be kept constantly employed and locked up securely every night.

Such is this remarkable little island in the South Seas. There are no destitute there; none is out of work or hungry. Every acre of their little domain is put to use. Cereals and fruits of all sorts flourish luxuriantly. The excitements of the outside world rarely intrude. The islanders occasionally complain of this latter matter, and to meet their desires, the Imperial authorities arranged several years back that a boat should call at least four times a year.



MISSING STEAMER CANASTOTA

The steamer *Canastota*, 4,900 tons gross, of the United States and Australasian Steamship Line, left Sydney on June 13 en route to New York, via Wellington, New Zealand, in command of Captain A. G. Lockie, and in the ordinary course of events should have arrived in Wellington on June 18, but up to the time of going to press the vessel has not reached port nor even been seen or heard of since she left Sydney.

The *Canastota* carried a crew of eleven British officers and thirty-eight Chinese, her cargo consisting of 200 tons of general Australian and 50,000 cases of benzine.

Department also notified the masters of all vessels passing near the track of the missing steamer to maintain a strict watch, it being the general opinion at the time that some slight mishap had befallen her. The New Zealand Government despatched the warship *Chatham* to search for the overdue vessel, and the news of her mysterious disappearance was wireless broadcast around the Pacific. The Navy Board in Melbourne likewise sent instructions by wireless to all ships at sea to keep a sharp look-out and to Naval ships to keep watch for any wireless messages.

As day after day passed and no tidings



The missing steamer "Canastota," considerably overdue on a voyage from Sydney (N.S.W.) to Wellington (N.Z.).

The steamer was equipped with wireless, but no messages were received from her after she left Sydney. This, however, caused no alarm, but her failure to reach New Zealand on the due date aroused speculation as to the cause of the silence and delay. When several days passed and no tidings were received, the Sydney agent, Mr. George Parkes, became anxious, and utilised every possible means of obtaining news of her whereabouts. The captains of all intercolonial steamers which left Sydney for New Zealand, or vice-versa, a few days after the *Canastota* was first reported missing, undertook to keep a sharp look-out on the trip across. The Navigation

of the *Canastota* were received, a gloomy view was taken of the matter. Owing to the inflammable nature of the cargo, one theory regarding her mysterious disappearance is that she accidentally caught fire and was blown up.

About the time that the vessel left Sydney heavy seas and strong gales were prevailing between Australia and New Zealand and it is quite possible that the vessel's wireless aerials may have been blown away and thus prevented her from communicating with land or other ships. However it is extraordinary that the whereabouts of the *Canastota* should be such a complete mystery.

The *Canastota* is a British ship and during the war was engaged for about three years carrying munitions and food-stuffs from the United States to England. Since the war she has been a regular trader to Australia. Captain A. G. Lockie, her master, is well known in shipping circles both in Sydney and New Zealand, and is looked upon by those who are capable of judging as a master in whom every confidence could be placed. Amongst the wharf hands in Sydney, both he and his officers were highly popular, and general regret was expressed when the news of the *Canastota's* disappearance first became known. There were no passengers on board.

The fourth engineer (Mr. W. J. Halberte) is a young man only recently out of his apprenticeship. He served his time

with a Sydney firm, and was making his first trip in this vessel. The third engineer (Mr. A. J. Reid) also joined the ship at Sydney.

The list of officers is as follows:

Captain A. G. Lockie (master), of New Zealand.

A. T. Sang, chief officer (Scotland).

K. Wardrobe, second officer (Hull).

G. Crichton, third officer (Glasgow).

Wm. Peel, chief engineer (Gateshead, Scotland).

D. Syrsmas, second engineer.

A. J. Reid, third engineer (Sydney).

W. J. Halberte, fourth engineer (Sydney).

W. Reid, fifth engineer (Liverpool).

D. Trimmer, deck engineer (Australia).

J. Nicholson, wireless operator (Scotswood, England).



A New Handley-Page.

One learns that an entirely new Handley-Page machine will shortly make its appearance at Cricklewood. It is a monoplane with a wooden plane with the H.P. slot wing of the type called by the Heathen the "Rhinopteros" or "money wing."

It is fitted with a 350-h.p. Rolls-Royce engine and will carry ten or twelve passengers. Doubtless it is being hurried along in order to replace the relics of a bygone age which now revel in the name of air liners on the Handley-Page portion of the London-Paris, 1921, air route.

It is expected that the "Rhinopteros" (as it will surely be christened) will be on test within a month or six weeks.

Mass Production of Ford Stories.

Ford stories are as plentiful as ever. At a Manchester place of entertainment a few nights ago the following were served up by an American cow-boy, who was performing tricks with a lasso and reeling off yarns at the same time:

A pedestrian crossing the street in Manchester narrowly escaped being knocked down by a Ford car, which was brought up just time to avoid the collision. The irate pedestrian exclaimed:

"Why don't you carry a horn?" "They don't fit horns to the Ford car," came the reply, "it's too much like the devil without fitting horns."

The cowboy made two misses at a certain trick he was attempting. Essaying a third effort, he said: "If I don't do this trick this time I'll give every lady a box of chocolates or a Ford car. I know they'd rather have the chocolates than be stung by a rattler."

Goliath's Flight.

A Farman Goliath, carrying 2,250 kilos (2½ tons), has covered the circuit Paris, Orleans, Rouen, Saint Inglevert, Metz; Dijon, Paris, three times round, making 4,500 kilometres (2,800 miles) in 34 hours. The test, the *Times* states, was made in trials instituted by the Under-Secretary for Aviation for the encouragement of commercial flying.

Paris-London Air Post.

From Monday, May 2, the number of postal air services from Paris to London was increased from one to three services daily. The times of departure and arrival are as follow:

Departure from	Arrival in
Paris.	London.
9.15 a.m.	Noon.
12.30 p.m.	3.15 p.m.
4.30 p.m.	6.15 p.m.

Beginning from the same date the special surcharge on postal matter sent by air was reduced from 75 centimes to 50 centimes for every 20 grammes or part of 20 grammes.

NEW ZEALAND AFFAIRS

BY

HENRY BATESON (Our Special New Zealand Correspondent)

During recent months the question of Naval defence, not only of New Zealand but of the Empire as a whole, has been considered by the New Zealand Returned Soldiers' Association, and what may be regarded as something in the nature of an extraordinary pronouncement has now been made. The returned soldiers, through their national organisation, have declared in favour of a strong Imperial Navy. They have expressed the opinion that the principle embodied in the League of Nations is sound, but that at the present time and under present conditions the British Empire cannot afford to be inferior in Naval strength to any other Power. The most interesting, if not the most important, feature of their decision is the proposal that the interest from the Canteen Funds—which is the property of the New Zealand Expeditionary Force, should be used to promote public recognition of the vital importance of Naval defence. This fund, taken as a whole, amounts to about £80,000.

The Dominion Conference of the New Zealand Returned Soldiers' Association held recently at Dunedin, adopted the following resolution by ninety votes to three. This represents the full voting strength of the Conference—ninety-three voted—and only one delegate with three votes, opposed the motion. The resolution expressed the opinion that a certain sum from the funds should be devoted to the cost of compiling and publishing regimental histories, and then reads:

"(1) That although the Conference is of the opinion that the peace of the world is ideally kept by national and international agreements based on a balance of power, and although it does not approve of armed preparations for other than defensive purposes, it yet believes in the necessity for the proper defence of the British Empire and its free institutions, and, in particular, in the paramount need for adequate Naval defence.

"(2) That since the population of Great Britain contributes on an average an annual amount of over £2 per head to the support of the British Navy, while the New Zealand contribution is only about 5s. per head per annum, this Conference is of the opinion that New Zealand should forthwith assume its due share of the burden.

"(3) That since it is not clear that the League of Nations is yet capable of assuming responsibility for, and enforcing the principles of justice among the nations, this conference views with profound misgivings the decline of British Naval power below a one-Power standard, and urges the Government to use every effort to secure the adoption of a one-Power standard as an irreducible minimum.

"(4) That as an earnest of its sense of the urgent need for public recognition and satisfaction of the requirements of the Naval defence, this Conference begs to recommend to the Canteen Funds Disposal Board that the interest from the fund should be applied to such objects as may best secure such public recognition and satisfaction provided, however, that the moneys shall not be applied in substitution of any Government liability."

The Conference formally placed on record its emphatic support of the League of Nations, and elected the following committee to consider the best means of carrying out the above recommendations: Sir Andrew Russell, Messrs. E. W. Inder, R. B. Bell, R. J. Jacobs, D. S. Smith, D. J. B. Seymour, W. E. Leadley, T. W. McDonald, and the Hon. W. Downie Stewart.

In the discussion on the resolution several proposals were made with regard to the best means of carrying out the Conference's objects. Some delegates suggested the Sea Scout movement should be fostered, others that Naval scholarships should be formed and a further suggestion that the money should be devoted to the upkeep of a submarine was made.

H.M.S. Chatham.

H.M.S. *Chatham* has been on a tour of the South Island ports of the Dominion, and shortly leaves Wellington for Auckland and other northern ports. The response to the call for recruits for New Zealand's training scheme has proved very satisfactory, and a preliminary training course has been commenced on H.M.S. *Philomel*. From the *Philomel* the boys will go to the *Chatham* to qualify for higher ratings, and will then pass on to other ships and training centres for higher torpedo, gunnery and engine-room ratings. The idea, however, is to keep the boys in home waters as long as possible.

Minister to Visit Samoa.

The Minister of External Affairs (Hon. E. P. Lee) is shortly to visit Samoa in order to learn at first hand the problems of administration which need attention, and to survey the work of the civil administration, which has been in operation for two years. He will be accompanied by Mr. J. D. Gray, the Under-Secretary of External Affairs.

Steamers Laying Up.

Trade in the shipping world is very slack. Many of the large Home liners coming out to the Dominion are in ballast and this means that there is very little cargo at the main ports for transhipment to the smaller coastal ports. The coastal trade is therefore suffering and, as a result, several vessels are finding it hard to obtain

cargoes at all, while others are making trips with half and quarter loads. The intercolonial trade is also in a very depressed condition, and the larger vessels are entering the coal trade in increasing numbers. The Union S.S. Company has twelve passenger and four cargo boats laid up.

Aviation Matters.

Mr. H. H. Shaw, of Hamilton, has the honour of being the first man in New Zealand to possess an aeroplane for private pleasure. The plane, a single-seater, is an Austin *Whipper*.

At the beginning of last month an *Avro* plane was forced to land in the harbour at Dunedin. Neither the pilot (Mr. J. S. Mercer) nor his passengers were injured, but the plane suffered slight damage.

NAVAL APPOINTMENTS

The following Naval appointments are announced:—Commander: Francis H. Brabant to *Cerberus*, additional, whilst on passage to United Kingdom for reversion to Royal Navy, June 11. Lieutenant: Eric G. B. de Mowbray and Lionel C. Grimwade, both to *Cerberus*, additional, whilst on passage to United Kingdom for reversion to Royal Navy, June 15; Harry L. Howden to *Penguin*, for torpedo-boat destroyers in reserve, June 12 (appointment to *Penguin*, part complement, cancelled); Victor A. T. Ramage to *Penguin*, part complement, June 12; Frederick G. H. Bolt to *Cerberus*, to await passage to United Kingdom, June 17. Sub-lieutenant: Ian C. R. Macdonald, Arthur K. Baxendell, Arthur R. Hollingworth, all to *Penguin*, to await passage to United Kingdom, June 17; Alan P. Cousin and Cecil C. Baldwin to *Cerberus*, to await passage to United Kingdom, June 17. Acting sub-lieutenant: Herbert J. Barling to *Tattoo*, John Abbott to *Success*, Sydney T. M. Gower to *Tasmania*, Robert B. A. Hunt to *Stalwart*, Geoffrey G. Carter to *Anzac*, Donald P. Wines to *Marguerite*, all to date June 15. Engineer lieutenant-commander: Oscar A. Ireland to *Penguin*, additional, for *Adelaide*, June 9.

Auxiliary Services.

Commander: Leighton S. Bracegirdle, D.S.O., to *Penguin*, additional, to act as district naval officer, New South Wales, June 10. Lieutenant-commander: Harold L. Quick to *Cerberus*, additional, as chief staff officer to the Director of Naval Reserves and Naval Reserves Mobilisation, June 10. Lieutenant: John White to *Cerberus*, additional, to act as District Naval Officer, South Australia. Commissioned instructor: George S. Greer to *Penguin*, additional, for duty as assistant to the District Naval Officer, Queensland, July 1. Warrant officer: Francis C. Type to *Cerberus*, additional, for duty as assistant to District Naval Officer, Victoria; George Stewart to *Cerberus*, additional, for duty as assistant to District Naval Officer, South Australia; Spencer P. Austin to *Cerberus*, additional, for duty as assistant to District Naval Officer, Western Australia, all to date July 1, 1921. Jacob F. Warner to *Penguin*, additional, as assistant to Sub-district Naval Officer, Sydney, June 30, and to be temporarily lent *Penguin* for torpedo-boat destroyers in reserve.

Promotion.

Sub-Lieutenant Arthur J. Tate, to be lieutenant, to date June 1, 1921.

HISTORY OF ENGLAND

THE HOUSE OF YORK

BY
ERNEST A. S. WATT

Edward IV. (1461-1483).

The accession of Edward forms a landmark in history. For some time Parliament had been steadily gaining ground and gradually encroaching upon the power and prerogative of the Crown, but now comes a sharp reaction, and under the so-called New Monarchy, we see the Crown again assuming almost absolute power. Nor are the reasons for this sudden change difficult to discover, for so far the greater barons had been the only effective check upon the power of the King, and at the date of Edward's accession their ranks had been so decimated, as a result of the civil war following upon the long struggle with France, as to render them comparatively innocuous. Above this, too, stands the fact that the nation, after the long period of misery and suffering which the two wars had entailed, yearned above all for peace and good government, and, finding all it sought for in the New Monarchy, was content to leave its destinies unre-servedly in the hands of the King.

It is interesting at this stage to look back for a moment, and note how the power of Parliament had step by step increased. In the earlier reigns the King had exacted what taxes he considered necessary, and so long as his demands were moderate and the country reasonably well governed, the nation was satisfied to leave all problems of finance to the determination of the Royal will. The wars with France, the inevitable consequence of Henry II.'s vast possessions within the boundaries of that kingdom, naturally entailed heavier taxation, but it was not until Englishmen found themselves harshly taxed and badly governed that trouble began.

We have seen both Henry I. and Henry II., in order to curry favour with their subjects, voluntarily issue Charters of Liberties, and have witnessed the historic spectacle at Runnymede, where King John was forcibly compelled to accept the Great Charter, thereby renounc-

ing his inherent right of taxation, save with Parliament's approval and consent. The Magna Charta remained, for many centuries more or less a dead letter; but, in theory at least, from 1215 onward, taxation became the especial business of Parliament, and when the King asked for subsidies, it became the custom for Parliament to demand a *quid pro quo*, and eventually to make the grant on the express condition that certain grievances should be redressed.

We have seen Simon de Montfort and Edward I. summon to Parliament, representatives of the great cities and boroughs, also of the knights of the shire, thus inaugurating the representation of the third estate. The part played by the Commons was at first a humble one, but the important point is that their representatives did not fail to attend, as did those of the clergy, whom Edward I. also summoned, in vain. During the reign of Edward III. the two Houses first met separately, the Commons having their own place of meeting in the Chapter House of the Abbey of Westminster.

It must not be imagined that Parliament had become *ipso facto* the supreme legislative body. Law-making had hitherto been the special privilege of the Crown. Kings had made laws with the "counsel and advice" of the Witenagemot or the Magnum Concilium, but all that the House of Commons was at first empowered to do was to petition the Crown—to recommend, in other words, what forms legislation should take. The King, acting in conjunction with the Upper House, might or might not, accept the advice thus offered. If he did the proposal became law, being "enacted by the Crown with the counsel and advice of the lords, spiritual and temporal." Sometimes, however, statutes came into existence which were neither petitioned for by the Commons nor assented to by the Lords, and we more than once find the Commons protesting against such enactments as being an abuse of the

Royal prerogative. The power of Parliament became, of course, greatly enhanced by the Lancastrians' usurpation of the throne, for the title of the new dynasty being essentially a Parliamentary one, Parliament was enabled *ipso facto*, to secure a real share in the government of the country. Henry IV. found himself compelled to submit to Parliament's nomination of his Council and even to accept the Commons' claim to scrutinise and audit the national accounts, which had hitherto been considered the King's private concern.

We find Henry V. promising that no laws should be enacted contrary to the petitions of the Commons, and in the reign of his son, we see the beginning of the present system of legislation, by bills and statutes inaugurated in the House of Commons. It would, however, be a mistake to imagine that the authority of the Commons was insignificant until Lancastrian times. As early as the reign of Edward III. we find them boldly censuring the ministers of the Crown, and protesting vehemently against the mismanagement of the war, and the heavy burden of taxation. In the following year, too, during the minority of Richard, we find them again to the fore, demanding the annual summoning of Parliament, and claiming, not merely the right of voting, but of appropriating supplies and examining the national accounts, claims which Henry IV. a few years later found himself compelled, by force of circumstances to allow.

If under the "New Monarchy" the power of Parliament lay to a great extent dormant, this was for the reason that the nation, finding itself governed by a line of sovereigns, whose one interest was England's advancement, was satisfied to see the power of the Crown unfettered and unrestrained. The part Parliament was called upon to play during the next century may seem an unimportant and in fact a somewhat servile one, but this was so for the excellent reason that Englishmen as a whole had nothing to complain of. Peace at home and abroad meant a notable curtailment of expenditure and a corresponding decrease in taxation; in addition to which it is evident that the Crown spent its money well, with due regard to the public interest. The brief reign of Richard III. witnessed a partial reversion to popular government, but his successors,

the Tudors, were more absolute than any of their predecessors, Parliament becoming little more than the slavish instrument of the Royal will. That this was so, was due far more to the tact and popularity of the Tudor sovereigns, than to any diminution of the powers of Parliament. More than once during this time did the Commons distinctly show their teeth, whilst towards the close of Elizabeth's reign they evinced such unmistakable signs of re-asserting their authority as assuredly to serve as a timely warning to her successor, had James of Scotland been a wiser man. It was only by dint of hard fighting that Edward had won the Crown, but once that goal was reached the opposition quickly melted away. In battle after battle Queen Margaret's forces were hopelessly worsted, until Edward's position appeared completely unassailable. Good-looking and open-hearted, high-spirited and full of *joie-de-vivre*, it is small wonder that the young King appealed strongly to the imagination of the people. Edward, in the long struggle which had ended in his favour, had owed much to the Earl of Warwick, his staunch supporter throughout the war.

The famous "King Maker" had anticipated that upon the Yorkist triumph he should find the reins of government unreservedly in his own hands. Such hopes, however, were far from realised, and to the dismay of Warwick, who was planning a marriage which should cement the Anglo-French alliance upon which he had set his heart, the King secretly married Elizabeth Woodville, the widow of Lord Ferrars, a prominent supporter of the House of Lancaster. Once the union was consummated, too, the Queen's brothers and kinsfolk, all of whom had fought for the Red Rose during the Civil War, were immediately foisted into important positions in the government, to the gradual exclusion of Warwick and his partisans. This was more than the powerful Earl had bargained for, and he set to work to supplant Edward in favour of his brother, Lionel, Duke of Clarence. Clarence, one of the most abject characters in English history, as vacillating and weak as he was ambitious and unprincipled, lent a willing ear to Warwick's advances, and, to seal the bond between them, it was agreed that he should marry the Earl's daughter, Isabel. So far-reaching was the influence and authority of the

King-maker that whatever he did must, it seemed, succeed. A rebellion in the north, headed by Robert of Redesdale, but instigated by the all-powerful Earl, led to the defeat of the King's army in the battle of Edgecote, and enabled Warwick to imprison the King within his castle of Middleham. The danger at this juncture of a Lancastrian restoration led to a hasty reconciliation and the King's release. A later rising, in Lincolnshire this time, was also Warwick's handiwork, and it was at this stage, finding that the King possessed unmistakable proof of their guilt, that the Earl and his son-in-law escaped to France. It seems probable that the King actually received his information through Clarence's instrumentality, the wretched Duke, unfaithful even to his own infidelity, being anxious, as was his wont, at once to run with the fox and hunt with the hounds.

But by this time Warwick had discovered that the vacillating and cowardly Clarence was not to be relied upon, and had decided to direct his energies into more hopeful channels. Finding Queen Margaret in France, he succeeded in the truly miraculous task of making his peace with the woman who had put his father to death, and who had for the last fifteen years good cause to execrate the name of Neville. The negotiations ended in Warwick undertaking to restore Henry VI. to the throne, but the Earl was determined this time to secure his position at the outset, and before any definite steps were taken his second daughter was married to the Prince of Wales, Henry VI.'s only son. This same daughter, Anne Neville, was destined to become the consort of King Richard III.

Meantime, Charles of Burgundy, the famous "Charles the Bold," had married Edward's sister, Margaret of York, despite Warwick's opposition, the Earl being desirous of establishing a close alliance between France and England, with the gradual absorption of Burgundy into the Kingdom of France.

Charles had a clear insight into what was happening in Paris, where Louis XI. was eager to assist Warwick in every way possible, but to the Duke's warnings Edward would pay no heed, he resolutely refusing to believe himself in danger. Such was the false security into which he had been lulled that he was content to leave

the command of his army in the hands of Warwick's brother, Lord Montague, a man whom he knew to be nursing a grievance; for upon the attainder of the Percies at the close of the Civil War, Montague had been created Earl of Northumberland, a grant which the strongly marked display of affection and esteem for the ancient House evinced by the people of the North had induced Edward subsequently to revoke, their attainder being reversed and the Percies restored to their ancient estates. Under such circumstances it was an act of folly, amounting almost to madness, to rely upon the loyalty of such a man as Montague.

For such over-confidence Edward was destined to pay dearly, for when, with the assistance of the King of France, Warwick and Clarence in 1470 landed at Dartmouth, Montague, instead of opposing their progress, joined the rebel forces with the great bulk of the King's army. Thus deserted and betrayed, Edward had no alternative but to seek refuge at the Court of Burgundy, and his precipitate flight made Warwick's task of restoring Henry VI. to the throne such a simple one, that for a time the triumph of the Lancastrians seemed assured. Warwick and his brother were reinstated, the property of the Lancastrians restored, and Clarence duly accepted as the next heir to the throne in the event of the failure of the House of Lancaster. Warwick's triumph, however, was short-lived, for Henry had only been restored to the throne a few months when Edward landed at Ravenspur, the very spot where Henry's grandfather seventy-two years earlier had landed under somewhat similar circumstances. Edward solemnly announced that he had come, not to claim the throne, but merely, as Duke of York, to demand the restoration of his individual estates. Needless to say, the restoration of the land confiscated from the Lancastrians had provided the new government with a generous supply of enemies. Thousands rushed to join Edward's standard at York, and, as he marched on London, gathering strength as he advanced, he soon proved the insincerity of his solemn assurances by issuing proclamations as King of England. Owing to Clarence's deliberate treachery, Warwick found it impossible to oppose his advance, and on reaching London his welcome again proved a wildly enthusiastic one. The



The sons of Edward IV., parted from their mother by Richard, Duke of Gloucester, June 16, 1483.

wretched Henry was hurriedly relegated to the Tower and Edward again became King of England. Despite Clarence's desertion in his hour of need, the great Earl of Warwick still possessed a large and formidable army, and Edward decided to march out and meet him. The rival forces met at Barnet on Easter Sunday, 1471, the Earl's army, despite numerous desertions, being still slightly superior in numbers. It was a grim and determined struggle, and the Yorkists appeared to be on the point of giving way, when in the dense fog Warwick's two wings mistook each other for the enemy. This unfortunate mischance went far towards deciding the fortunes of the day, and at length, after a carnival of slaughter, Edward's forces gained an overwhelming victory, both Warwick and Montague being numbered amongst the slain. Thus died the famous King-maker, a notable exemplification of the dangers of medieval feudalism, the great Earl having at his command riches and property and power such as no subject can safely be allowed to possess. Superlative as were his merits as a soldier, and brilliant his capacity for organisation, his death was not in any sense a misfortune for England, for in an age of treachery and self-seeking he was undoubtedly the greatest offender of all.

On the day that Warwick met his fate at Barnet, Queen Margaret had landed at Weymouth, and, meeting with considerable support in the west, advanced to Exeter, made her way to Bath, and thence, finding the road to Bristol barred, on to Tewkesbury. It was there she met King Edward's army, and in the battle which ensued, the Lancastrians were completely routed, and her son, the Prince of Wales, killed (1471). According to Shakespeare, the Prince was murdered by the Duke of Gloucester (afterwards King Richard III.) after the fighting was over, but this is in all probability a Tudor myth, invented to blacken Richard's character, and at least one contemporary speaks of the young Prince's death in the midst of the battle. Be that as it may, it is certain that Edward's victory was sullied by an unnecessary orgy of indiscriminate slaughter, and that shortly after the battle Henry VI. died, there being little doubt that he was quietly put away to avoid all possibility of further attempts being made at his restoration. Queen Margaret remained a

prisoner in England until 1475, when Louis succeeded in securing her ransom. The death of Henry and his son of course left Edward without a rival in the field.

It might be imagined, now that his position was secure, that Edward would attempt, in some measure, to repay the generous assistance he had throughout experienced at the hand of his brother-in-law, Charles of Burgundy. Edward's foreign policy was, however, a subtle and treacherous one. A bitter duel was being enacted between Louis XI. and Charles the Bold, and, both sides bidding eagerly for England's support, Edward would promise to assist first one and then the other, without any intention of intervening at all. It is true that once (1475) he landed at Calais in the interests of the Duke of Burgundy, having raised an army by exhorting "benevolences"—in theory a free loan from his subjects, but in reality a subsidy to which every one was forced to contribute, a form of taxation which aroused considerable hostility in England—but crafty and cunning as Edward undoubtedly was, he met more than his match in Louis XI., a monarch whose Machiavellian statecraft was unfettered by all regard for principle or right, and whose especial genius it was to eke out each man's principal weakness, and then to trade upon it to his own advantage. Realising Edward's craven fondness for money, Louis played upon that weakness with such success that by the Treaty of Pecquigny (1475) the English King was bought off and Charles of Burgundy deserted in the hour of need. Needless to say, this sample of the King's avarice did not add to his popularity in England.

During Edward's reign Parliament seldom met, his first Parliament having granted him an ample revenue for life. In 1478 the King became suspicious of his brother Clarence and, a subservient Parliament having taken the matter in hand, Clarence was found guilty of high treason and executed, although the evidence against him appeared to have been fragmentary in the extreme. Clarence, however, deserved little sympathy, it not being in his nature to remain faithful to anyone or anything.

By this time Edward's character had sadly degenerated, for, once his position became secure, his ever indulgent nature gave way to every form of dissipation and

excess. The handsome youth in a few years became transformed into a corpulent profligate, old long before his time, the open-hearted popular Prince sank into a cruel and bloodthirsty miser.

The peace with France was to have been consolidated by the marriage of Edward's son to Louis's daughter, but ere the union the astute King of France had changed his plans and decided to marry his daughter elsewhere. Edward, determined to wipe out the insult with blood, prepared for war, but died before anything definite had been decided upon.

During Edward's reign Louis XI. had succeeded in overthrowing his powerful vassal, the Duke of Burgundy—or rather, had egged on his reckless rival to his own destruction. Thus the question of who should be master of France, the King or Duke of Burgundy, had been decided. There can be little doubt that Edward was in honour bound to support his brother-in-law. That he failed so signally was partly due to the callous selfishness of his nature, but partly also to the crafty intrigues of Louis XI., who relentlessly outwitted all with whom he came in contact. It must not be forgotten that England was still a comparatively poor country and, after the long war with France and the Wars of the Roses, was certainly not in a position unnecessarily to enter into hostilities. Furthermore, in Edward's favour, it must be remembered, that he gave the country what she most urgently needed, peace and strong government.

Towards the close of the reign war broke out with Scotland, and the young Duke of Gloucester greatly distinguished himself by hurling back the invaders and then forcing his way into Scotland and capturing Edinburgh. Richard was undoubtedly a great soldier, and the more we study his exploits in the field, the less disposed we are to accept Shakespeare's description of the "foul cripple" as a credible portrait.

Edward's reign saw France once more a united nation, and it also witnessed the union of the Crowns of Aragon and Castille, and the beginning of that great Spanish Monarchy, which was destined, ere long, to play so prominent a part in the affairs of Europe, and of the world.

Edward was not a popular King and his character was certainly little worthy of admiration, but he was a strong man and it was a strong man that England needed.

He died in 1483, an old man at the early age of forty-one, his untimely death being the result of a life of boundless energy and extreme self-indulgence. His son and heir was thirteen years of age when summoned by his father's death to the throne of England.

Edward V. (April-June, 1483).

The young King's reign was a tragically short one, lasting only a little more than two months. The story of this brief period is still wrapt in mystery, but it is certain that the King's uncle, the Duke of Gloucester, lost no time in obtaining possession of young Edward's person and proclaiming himself Protector. Finding a powerful supporter in the Duke of Buckingham (the direct descendant of Edward III.'s fourth son, the Duke of Gloucester), and with Parliament at his back, Richard was now in a position to ride roughshod over all opposition. Hastings and Grey were executed, presumably because they questioned Richard's pretensions, and the Woodvilles arrested; whilst Queen Elizabeth was compelled to hand over her younger son Richard to his uncle's tender mercies.

Shortly afterwards a deputation of Lords and Commoners urged the Protector to go one step further and assume the Crown, a suggestion which Richard, after a great show of reluctance, decided to adopt.

Such are the bare facts, and the story goes that after his accession the two young princes were murdered in the Tower at the instigation of their merciless uncle.

Certain it is that skeletons answering to theirs were discovered some twenty years later, but it is not so certain that Richard was responsible for what was one of the foulest crimes in history.

It was the primary duty of the Tudor historians to blacken Richard's character in every way possible, and in this respect they certainly proved no laggards, Richard being accused of having murdered the young Prince Henry VI., the Prince of Wales, his brother the Duke of Clarence, and his own wife—truly a wholesale order.

Disregarding contemporary authorities as hopelessly biased, it seems as reasonable to accuse Henry VII. of the murder of Edward and his brother as to accuse Richard, and in the latter's favour it may be urged that once the illegitimacy of the

Princes was accepted they ceased any longer to be a source of danger, and that Parliament in recognising Richard's right of succession had apparently accepted the illegitimacy of his nephews as proved.

It may also be argued that Richard, having afforded his brother ample proof of his devotion and loyalty, would hardly be villain enough, once that brother was dead, to murder his children in cold blood.

Putting the question of legitimacy altogether aside, the Lords and Commons may have been well advised in petitioning Richard to assume the Crown. Not only was it common knowledge that Henry Tudor had every intention of claiming the throne as the representative of the Red Rose of Lancaster, but a war with France seemed at the moment almost inevitable. Under these circumstances small wonder if the more far-sighted of his subjects wished to see the throne occupied by one who had proved himself to be the first soldier of his age, and a statesman of the highest order, rather than by an untried boy of thirteen years.

The fact that the Duchess of Burgundy, many years after Richard's death, declared Perkin Warbeck to be Richard of York, her nephew, proves that she had never heard that the boy was supposed to have been murdered by his uncle. We do not mean to argue that the time honoured story of the murder of the little Princes is a myth; we only suggest that, considering all the circumstances, the only appropriate verdict at this distance of time must be one of not proven.

Shakespeare, whose authorities were the Tudor historians, has depicted Richard as a villain of the deepest dye. In his masterly style he has painted a picture containing every possible detail which can help to make it repulsive and loathsome. We are told that the monster was born with long hair and a full set of teeth, that he was a hunchback, a "foul cripple." All this we can safely discard, the idea of his being a hunchback being doubtless derived from his nickname of "Crouchback."

That he murdered Edward of Lancaster in cold blood after the Battle of Tewkesbury is highly improbable, considering that Edward's wife consented three years later to become Richard's consort.

The Tudor historians further accused Richard of being responsible for the deaths

of his brother Clarence, Henry VI., and of his own wife Anne, but as they can adduce not one tittle of evidence such aspersions need not be taken seriously. The reason adduced for the murder of his wife is alleged to have been a desire to marry his niece Elizabeth, daughter of Edward IV. The improbability of this is so obvious as to need no refutation.

The real interest in all these vague and shadowy accusations is the proof they supply of the intense bias and manifold malice of the Tudor historians.

As to the legitimacy of Edward IV.'s marriage with Elizabeth Woodville, the question was raised shortly before Richard's elevation to the throne, the argument being that owing to the existence of a pre-contract the union was an illegal one. It was also stated at the time that the two Princes were not Edward's children. The question may be taken as settled by Henry VII.'s espousal of Edward IV.'s and Elizabeth Woodville's daughter. This marriage was no love match on Henry's part, and would not have taken place had the King been in a position satisfactorily to dispose of Elizabeth's claims to the throne by any such hypothesis.

Richard III. (1483-1485).

Richard thus became King of England, but his reign was destined to prove the truth of the old adage that the path of usurpers is never an easy one.

Hardly had he established himself upon the throne when he was called upon to face a serious rebellion, headed by his erstwhile supporter, the Duke of Buckingham, who first apparently intended to claim the throne himself, but finally decided to support the pretensions of Henry Tudor, Earl of Richmond.

Bad weather in the Channel prevented Henry from fulfilling his contract with Buckingham and he arrived at Plymouth to learn that the rebellion had been a failure and that Buckingham and his allies, the Woodvilles, had been put to death. Henry at once withdrew, realising that the hour had not yet struck.

Richard's position now appeared perfectly secure. His Parliament met and unanimously accepted his sovereignty. An Act was passed abolishing "Benevolences," a form of taxation which had aroused much opposition during Edward's reign. Much useful legislation followed;

in fact never had so much been done in this direction within such an incredibly short time. Bail was henceforth to be granted to all persons accused of felony; jurors were to be men of good reputation; foreigners whose business it was to write or print books were to be no longer discouraged from settling in England. These are only three instances of the far sighted legislation for which Richard himself was responsible. Moreover, the new laws were for the first time enacted in the English tongue, and were also for the first time printed. The relations between Richard and his Parliament were at first amicable and he betrayed no intention of disregarding the wishes of his subjects as expressed by their representatives in Parliament. All augured so well and his reign promised to be a period of such unrivalled prosperity, that it is difficult to account for Richard's sudden eclipse and downfall. Was it over-confidence? Was it the failure on the King's part to win his subjects' love? Or was it simply the result of misfortune? We think it was a mixture of the three, coupled with a rare display of cunning on the part of his rival. Over-confidence it was that prompted Richard to place his implicit trust in Lord Stanley and the Earl of Northumberland; over-confidence too which prevented his making adequate preparation to meet the invader, whose pretensions he despised.

Richard was not unpopular, but he had never won the affection and esteem of the Londoners as his brother Edward had done. The nation had accepted his accession quietly, but without enthusiasm, the deposition of Edward V. not being by any means a popular move.

Fortune had also declared against him. His only son had died. He had endeavoured to win popularity by wise laws, but in this he was ahead of his time and his efforts met with scant appreciation. Evil fortune, too, that the men in whom he placed his confidence should prove themselves traitors, and that the historic fight at Bosworth should be won by treachery. In the direction of propaganda and lavish promises, the astute Henry had left not a stone unturned, but he landed at Milford Haven with a force of only 3,000 men, Normans, most of whom Charles VIII. had allowed him to enlist.

His father (Edmund Tudor) being a Welshman, Henry expected to gain many adherents during his march through Wales. Such hopes were not realised, and he reached Shrewsbury with an army of barely 4,000 men.

Richard had meanwhile made Nottingham his headquarters and his army was so superior in every respect to his rival's that his triumph seemed assured. Henry advanced to meet him, not relying upon the insignificant force under his command; but on the result of his widespread propaganda and on corruption on a wholesale scale. The result amply justified his confidence. He was already in touch with Stanley, Richard's selected Commander-in-Chief, who joined the rebel army just before the battle commenced. Although his army was thus greatly reduced by desertions, Richard met Henry at Bosworth with a decided advantage in numbers, not far short of two to one. It was a grim discovery to find Stanley ranged against him, and still more disconcerting when the fighting had commenced to see the wing commanded by Northumberland remaining altogether inactive. The fight was not far advanced when Richard, espying Henry in the field, sought to end the struggle gloriously by himself destroying his rival. The two gentlemen-at-arms who surrounded Henry fell mortally wounded, but before Richard could attain his object he had himself been slain, and Stanley, plucking the Crown from the brow of the dead King and placing it upon Henry's head amidst shouts of "Long live the King," brought the battle of Bosworth to a dramatic termination.

Perhaps the most amazing thing about the contest that at last brought the long drawn out Wars of the Roses to an end was the extraordinary paucity of the forces engaged—the two armies together consisting of barely twelve thousand men.

Thus died Richard, the last of the Plantagenets, a great soldier and an administrator of transcendent ability. The House of York, after seeming to have the Crown in safe keeping, had thus been compelled to acknowledge defeat. Such are the chances of War!

COASTAL SHIPPING DISASTERS

The foundering of the two steamers, *Fitzroy* and *Our Jack*, involving a total loss of thirty-five lives, raises the question of what would have been the result if the vessels had been equipped with wireless. They were on a comparatively short voyage it is true, and the storm which overwhelmed them arose with unusual suddenness, but from the stories which follow, told by survivors, it is clear that after it was apparent that the ships were doomed, there was sufficient time for the distress signals to have been radiated by wireless and assistance summoned from other ships in the vicinity. The timely arrival of the *Brundah*, which rendered such valuable assistance to the survivors of the *Our Jack*, only emphasises what might have been accomplished by other vessels if the doomed ships had been able to flash news of their plight over the ocean.

Chance or Fate was certainly kind to the unfortunate crew of the *Our Jack* in sending the *Brundah* along at that critical moment, but with such a wonderful aid as wireless at hand, there is no excuse for leaving such things to chance. One ship can pass within a few hundred yards of a disabled vessel at night-time, or in a fog or rain squall, and still be unaware of her distressed plight.

The fate of the *Fitzroy* and *Our Jack* affords further proof of the necessity of insisting that every ocean-going vessel, no matter how small, should be equipped with wireless. The perils of life at sea are so numerous that it is a duty we owe to those who follow that calling to use every possible means of minimising the perils of "those who go down to the sea in ships."

A double shipping disaster occurred off the north coast of New South Wales last month, when two well-known coasters, the *Fitzroy* and *Our Jack*, after battling bravely for some time against mountainous seas, foundered. The disaster was responsible for a heavy death roll. Out of a total of twenty-two passengers and a crew of eight on the *Fitzroy*, only four survived.

The *Our Jack* foundered off Manning Heads early on Sunday morning, June 26, the captain and four of the crew being drowned. The remainder were rescued by the North Coast S.N. Co.'s steamer *Brundah*, which arrived on the scene just as the *Our Jack* was to be abandoned. Many stirring stories of the courage and seamanship shown by those on the *Brundah* have been told by the rescued ones.

How the "Fitzroy" Went Down.

The *Fitzroy*, a steamer of 623 tons gross, and 342 tons net, was built in Scotland many years ago. She was well known in the north coast trade, having been engaged on that run since 1912. She was owned by the well-known shipping firm of Langley Bros., and commanded by Captain James Colvin.

The *Fitzroy* left Coff's Harbour at 4 p.m. on Saturday, June 25, bound for

Sydney. A strong south-west wind was blowing at the time and towards morning a heavy sea began to buffet the steamer badly. According to the story told by one of the survivors, the order was given by the captain about 6.30 a.m. on Sunday to jettison portion of the deck cargo, consisting of logs and cattle. It was impossible to get steam to the winch in order to move the logs, so the captain ordered all hands to don lifebelts and get the boats ready for launching. There was now about nine feet of water in the stokehold and engine-room and the ship had such a decided list to port that it was impossible to get the boats clear. She was still heading south, but was making slow progress and a few minutes afterwards sank.

Describing his own experience, Karl Jansen, one of the survivors, stated that when the *Fitzroy* went down he attempted to jump clear, but was drawn down by the suction. When he came to the surface he sighted a lifeboat containing three men some distance away and swam to it. The body of a boy, which was floating near the boat, was picked up and hauled on board, but was washed out again by the waves about an hour afterwards. It was apparent from the beginning, however, that the boy was dead prior to being picked up.

Shortly afterwards another member of the crew was hauled on board. The chief engineer and second mate were observed on the bottom of an upturned boat floating close by, and others were seen clinging to floating wreckage, but no help could be rendered them owing to the water-logged state of the boat in which Jansen and his companions were floating. The boat containing the five men drifted along the coast, and when approaching land was suddenly capsized by a breaker. It was a case of swimming for dear life then, and in spite of their exhausted state three of the men managed to reach the beach alive. Their two companions were, however, dead when pulled from the surf, apparently having expired after the boat was overturned.



The lost Steamer "Fitzroy."

Another of the survivors, Olaf Janneson, describing his experience, stated that he was at the wheel from 4 a.m. to 6 a.m. on the Sunday. The captain and second mate were also on the bridge. About 6.30 a.m. a heavy sea was shipped, which washed the cattle from one side of the deck to the other. Immediately the captain ordered all the passengers to come on deck and don lifebelts. The steamer was then about four miles off Cape Hawke. There were two lady passengers on board as well as the stewardess, and when it was apparent that the *Fitzroy* was sinking, great efforts were made to place them in one of the lifeboats, but so suddenly did the ship heave over that all on board were thrown into the water before it could be accomplished.

Continuing his narrative, Janneson stated that when he came to the surface he saw an upturned lifeboat floating some distance away. The chief engineer, the second mate and a lady passenger were clinging to the bottom, and when Janneson swam to them an attempt was made to turn the boat over, but without success. Janneson then swam for the shore, and after being in the water from 7.30 a.m. he landed at Black Head at 8 p.m., having swum altogether between ten and twelve miles.

After resting for some time Janneson walked to Tuncurry, which he reached at 2 a.m. on Monday. He found his way to the residence of Mr. Wright, who provided him with clothes and food, and put him to bed.

Another of the survivors, Herbert Henry Ramsay, whose brother Horace was also a passenger on the *Fitzroy*, was searching for the stewardess when the steamer suddenly turned turtle. He was drawn under twice when the ship disappeared, and on coming to the surface the second time found himself near a small lifeboat which contained two of the crew. Shortly after Ramsay was helped on board Jansen was likewise assisted into the boat, and the body of the boy was next secured. Efforts were made to restore him, but proved useless.

Continuing his story, Ramsay related that he was in an exhausted state on reaching the beach, and had to be assisted by Jansen and Hansen, who likewise dragged Karlsen and Daley, the other occupants of

the overturned lifeboat, out of reach of the waves.

The remaining survivor Jansen, describes how he last saw Captain Colvin standing on the bridge as the *Fitzroy* went down. Jansen called to him to jump as he himself plunged into the water, but he saw nothing of the skipper afterwards. It is presumed that he went down with the ship.

The three men, Ramsay, Jansen and Hansen reached the Tuncurry Prison Camp about 5.15 p.m. on Sunday and reported the wreck of the *Fitzroy*. The officer in charge of the camp, Mr. Charles Henry Graham, immediately sent three officers and a posse of prisoners to the spot where the men had landed. Daley's body was placed in a cart and brought immediately to the camp, those accompanying it applying restoratives during the journey. Karlsen's body was attended to on the beach, but after working hard for three and a half hours all hope of restoring life was, in both cases, abandoned. In the meantime Constable Nesbit, of Forster, had been summoned by 'phone, and on his arrival ordered the bodies to be removed to the Bellevue Hotel at Tuncurry, to await the inquest. The officers and prisoners at the camp rendered excellent service throughout, and Warder J. E. Killen, with four prisoners, patrolled the beach from the camp to Black Head all the next morning. On the Monday night the residents of Tuncurry and Forster patrolled the beach from Elizabeth Head to the point where the survivors came ashore. A hatch marked M17 was picked up on Burgess Beach near Cape Hawke. For days afterwards the beach was patrolled ceaselessly in the hope that some more survivors might be washed ashore, but the search proved fruitless.

H.M.A.S. *Marguerite* covered over a thousand square miles of water in searching for possible survivors of the *Fitzroy* a day or two after the wreck was reported. The search was commenced at Sugar Loaf Point and extended northward well past Diamond Hill, a distance of over forty-four miles. Many grim traces of the ill-fated steamer were seen, consisting of floating pigs and cattle, which bore evidence of the attentions of sharks. Patches of water thickly coated with oil and other debris were also passed, but no trace of any lifeboat was seen. The vessel returned to port after conducting a most thorough

search, with the belief held by those on board that no further lifeboats succeeded in getting clear of the *Fitzroy* when she foundered.

Captain Colvin's Career.

Captain James Colvin, master of the *Fitzroy*, was widely known and esteemed in shipping circles. Physically he was a big man, and those who knew him best declare that he was big in heart as well. He was courageous, active, resourceful, and was singularly fitted for the sea-faring life, where such qualities are constantly in demand.

Captain Colvin, who came of a fine family, was born in Scotland about sixty years ago. When only a lad he went to sea on one of the old time sailing ships. The sea life was particularly trying in those days, and it was doubtless the hard apprenticeship he served which caused him to grow into manhood not knowing what fear meant.

When about thirty Captain Colvin engaged as a seaman on the north coast trade, and before long became exceedingly popular amongst his new associates. Previous to being appointed to the command of the *Fitzroy*, he served on the *Augusta*, *Dorrigo*, *Duranbah*, and also the *Cooloon*, which was wrecked some years ago. Captain Colvin was a strong swimmer, and on one occasion when the ship on which he was serving was wrecked he swam a long distance to the shore with two lady passengers—a feat described by eye-witnesses as one of the most plucky on record.

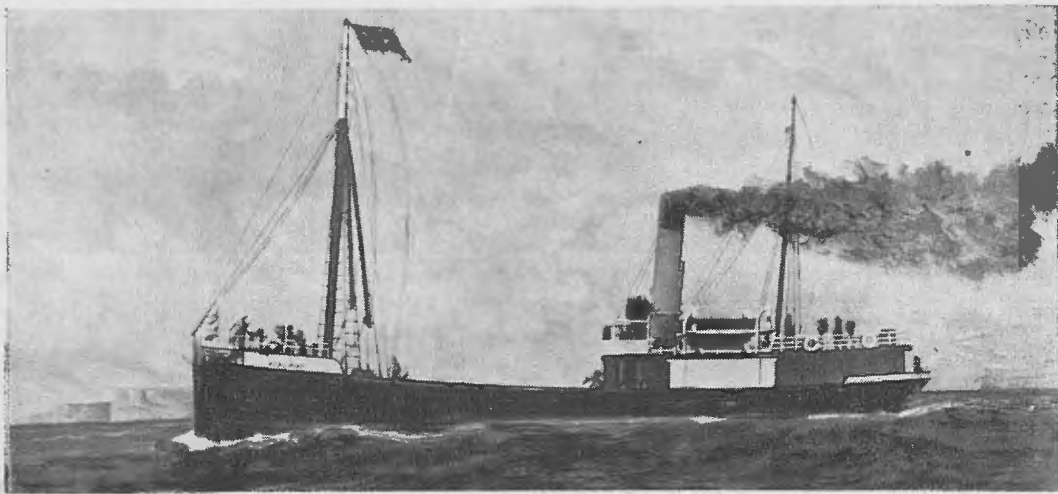
Captain Colvin was in several wrecks, and on each occasion he was foremost in assisting those less fortunately equipped than himself to fight against the waves and reach safety. Those who sailed under him had no more ardent advocate and staunch supporter of their rights than himself. It is no exaggeration to say that he was the most popular skipper along the north coast, and for days after the news of the *Fitzroy* disaster was received, shipping men refused to believe that the captain would not eventually turn up. It was recalled that on one previous occasion when his vessel had been posted as missing and hope almost abandoned, he had steamed into port safe and sound, having put out to sea to avoid the dangers of the coast.

Foundering of the "Our Jack."

The gale which swept along the north coast of New South Wales on the night of

Saturday, June 25, struck the steamer *Our Jack* when she was off the Manning Heads on the trip from the Nambucca to Sydney with a cargo of hardwood. She was a wooden steamer of 272 tons, owned by the North Coast Steam Navigation Co., who had recently taken her over from Allen Taylor & Co. She had been nearly 13 years in the coastal service, and when disaster overtook her had on board a crew of fourteen. Of these, five, including Captain Forbes, were drowned. The remainder were rescued by the N.C.S.N. Co.'s steamer *Brundah*, in command of Captain Purdy.

William Gray, a fireman on the *Our Jack*, has told a thrilling story of the experience of those on board the vessel. He



The Ill-fated Steamer "Our Jack."

was on watch on the Saturday night, and towards midnight, when the ship was being buffeted about by heavy seas, the captain turned the vessel back in an endeavour to reach port, but her position rapidly became desperate, and towards daylight orders were given to jettison the cargo of timber. Land could then be discerned through the haze and heavy rain, and soon after the *Brundah* came into sight. She was signalled to stand by, while those on the *Our Jack* prepared to take to the lifeboat. No sooner was it launched than a huge sea swept down upon the unfortunate men, swamping the boat and throwing them into the water. They managed to cling onto the lifeboat, and in that desperate position awaited the coming of the *Brundah*. All the time

terrific seas were breaking over them, and suddenly, without a word of warning, Captain Forbes lost his hold and disappeared. Soon after the *Brundah* came close to the half-drowned men clinging to the boat and threw lifelines and lifebelts to assist them. The mate and one of the sailors were first taken off, and at the second attempt the rest of those alive were rescued. The remainder, with the exception of the captain, were apparently crushed between the lifeboat and the *Brundah*.

Gray received a severe buffetting about while being hauled from the lifeboat on to the steamer. His collarbone was broken, and he was otherwise injured, but those on

the *Brundah* did everything possible to make him comfortable.

The chief officer, Mr. Paul Cassar, has related the gallant fight for life put up by Captain Forbes and the other members of the crew after being thrown into the water by the capsizing of the lifeboat. The weaker ones fought until they were compelled by sheer exhaustion to give up the struggle, and were then speedily swallowed up by the angry waves. Captain Forbes put up a splendid fight, but was at last forced to relinquish his hold, and was instantly swept away. Had the *Brundah* not arrived when she did, the remainder of those clinging to the boat would speedily have been forced to give up the unequal contest.

The chief engineer of the *Our Jack*, in telling his story, declared that the seas were too big for the steamer to live in. An attempt to run into port was useless, and the desperate condition of the *Our Jack* left no course open to those on board but to abandon her. No sooner was the lifeboat launched than it was capsized, and twice afterwards those clinging to it were torn from their hold as the heavy seas turned the boat over. Each time they managed to secure another grip, but the struggle soon sapped their strength, and before they could be rescued the sea claimed them as its own.

The survivors pay a high tribute to the seamanship displayed by Captain Purdy of the *Brundah* in navigating his steamer through the dangerous seas to a position from which ropes and lifebelts could be thrown to those clinging to the boat. The heavy seas made it futile to think of launching a lifeboat, but so well did those on the *Brundah* carry out their work that it was not long before the men clinging to the lifeboat were hauled on board. One man was rescued in a remarkable manner. He was swept on the crest of a huge wave almost level with the rail of the *Brundah*, and one of the men on the latter gripped him by his clothing and hauled him on board.

The *Brundah* remained in the vicinity for an hour searching for the remaining five members of the crew, but they were not sighted. The *Brundah's* officers describe the weather as the worst experienced for years. The gale was of cyclonic character, and was accompanied by squalls of almost hurricane force.

Two days after the disaster the beach at the Manning bar was strewn for a distance of two miles with wreckage, indicating that the *Our Jack* had been smashed to pieces by the storm after the crew had abandoned her. A spar apparently fastened to some portion of the hull was visible in the breakers about three hundred yards from the shore. The wreckage cast up included portions of the wooden water tanks, masts, boats, doors and fittings, together with bedding and a quantity of clothing belonging to the crew.

An idea of the terrific fury of the storm may be gleaned from the fact that the wreckage, when found, was twisted and smashed in a most extraordinary manner. An examination of the bottom of the mast

revealed that it had been wrenched bodily out of the vessel, while the combings of the holds, the deck houses, and huge beams, fastened in many cases by bolts and large nails, were smashed to matchwood.

Captain Forbes, of the ill-fated *Our Jack*, was regarded in shipping circles as one of the best bar-harbour skippers on the coast. He was widely popular, and old sea captains recall many skilful and plucky deeds of seamanship which stand to his credit. Many years ago, when in charge of the *Electra*, in the Manning trade, Captain Forbes was caught off the entrance in a terrible gale. Mountainous seas were running, and in trying to make the bar the *Electra* was carried too far to the south of the entrance and looked like being swept on to the beach. It was a desperate position, but Captain Forbes never lost his nerve and successfully accomplished the seemingly hopeless task of forcing his way, stern first, out into the open sea. At the time the feat was regarded as one of the most wonderful in the history of bar navigation.

Captain Forbes was a Liverpool man, and had been in the coastal trade since he was little more than a youth. Two of his sons served throughout the late war. His death cast a deep gloom over shipping circles.

Governor's Tribute.

The State Governor, Sir Walter Davidson, speaking at a function at which the trophies were presented to the winning life-saving surf clubs, a few days after the disaster to the *Fitzroy* and *Our Jack*, paid a glowing tribute to the dash and courage shown by those who played the part of rescuers when the latter steamer foundered. He believed that in no other country would it be possible to duplicate the courage and good judgment shown by those who threw out lifelines to the men struggling in the water and pulled them on board. It was the training the New South Wales man received from his early childhood which made such things possible. Such training, coupled with the climate, the open spaces and the free conditions of life, will always stand to our men.

Some Previous Wrecks on the North Coast.

The north coast has had its share of shipping disasters in the past. It is recognised that there are several dangerous

spots on that route, the vicinity of Seal Rocks being looked on as the most treacherous.

A steamer named the *Fitzroy*, belonging to the A.U.S.N. Company, was lost near Cape Hawke on December 11, 1897. She was driven ashore at Morna Point, but there was no loss of life.

Another wreck which attracted a great deal of attention at the time, was that of the *Catterthun*, which struck Seal Rocks on the morning of August 8, 1895. She had a large passenger list and a valuable cargo, including gold, for China and Japan. When she struck the captain was washed from the bridge, together with two of his officers. Several of the lifeboats were stove in by the mountainous seas, but a number of Chinese and several passengers managed to launch one of the starboard boats. No sooner were they free of

the ship than she rolled over and was swallowed up by hungry seas. The lifeboat picked up several Chinese who were floating on the wreckage, but only one officer was saved. The Cape Hawke pilot afterwards picked up the lifeboat and towed it into Forster. Altogether over fifty lives were lost.

Another steamer, the *Rosedale*, was lost somewhere near Smoky Cape, while on a voyage from Nambucca to Sydney in September, 1911. The mystery of her disappearance has never been solved. One theory is that she struck a submerged rock; others believe that she was struck by lightning during a terrific storm that was raging at the time.

A month later the steamer *Macleay* was lost off Broughton Island, near Port Stephens, the only survivors being two seamen.



NAVAL ADVENTURERS

It is typical of the spirit of adventure and thirst for experience, which has ever been the chief characteristic of British naval officers, that two distinguished members of the Admiralty Service, Lieutenants Halsey and Anderson, are now completing a round world tour, during which they have posed as ordinary seamen.

Their identity was first revealed when they walked into the Chelmsford Institute at North Stockton, Newcastle, and sought the assistance of Chaplains Forster Haire and Vickery in obtaining a transfer from the sailing ship *Alice A. Leigh* to another vessel.

Lieutenant T. E. Halsey, R.N., of H.M.S. *Victory* is a nephew of Admiral Sir Lionel Halsey, who accompanied the Prince of Wales to Australia last year.

The two officers are on leave of absence from the Admiralty and they shipped before the mast in order to gain first-hand knowledge of the conditions operating in the sister service in various parts of the world. It was their intention to continue aboard the *Alice A. Leigh*, but owing to the long period which she was delayed at Newcastle, they found it necessary to transfer to another vessel owing to the early expiration of their leave. They were offered berths in the officers' mess on a Union Co.'s steamer going to New Zealand, but they insisted on joining up as ordinary seamen. They are now on the way back to rejoin their ships, fortified with a rich store of practical knowledge of how things are done in the merchant service.

BANANAS WHERE THEY GROW

BY

WYNFRITH REVELL AND HENRY BATESON

THE banana, it is safe to say, ranks among the most nutritious fruits of the world, but of the thousands of people who see and eat them each day, how many know anything of their surroundings or characteristics? In the Pacific Islands the banana is extensively cultivated, and here is a staple industry right at our door of which, however, we know very little. The West Indies supply the United Kingdom and America with bananas, but the supplies for Australia and New Zealand come from the Pacific Islands. In each of the groups the methods employed in the cultivation of the fruit are somewhat similar.

Picture an island wooded to the summits of the peaks, which rise nearly two thousand feet above the level of the Pacific. A road, palm-shaded, encircles the whole, running along the wave-lapped shore of white coral sand. Living on this island of about 160,000 square acres are over 3,000 inhabitants, only four per cent. of whom are classed as Europeans. The oldest inhabitant in this particular case is so classed, although he is a very old West Indian nigger, and very proud of his peculiar standing. The native inhabitants of this little island in Polynesia are recognised as being of Caucasian descent, and the West Indians of Negroid, so it is very hard to understand how the "Oldest Inhabitant" is classed as European.

On a sloping hillside, thickly covered with virgin bush, we find a suitable plot of ground and the arduous task of clearing it commences. Labour is available and within a few days the ring of axes breaks the tropic silence. The land has been cut up into small sections, each of which is being cleared independently of the others. The fallen bush is stacked in rows and left to rot—for burn it will not, unless built into fires and carefully fed, until at least two years have passed.

The falling of the bush is dangerous work and the axemen have to be very alert. Entwining in every direction from tree to tree the creeper locally known as

"Kaka" spreads over the whole of the virgin bush. Often the base of the vine is thicker than a man's body, while hanging from above are pods a yard long containing a dozen or more beans, the size of a flattened peach. These strong, tough vines frequently throw a tree in exactly the opposite direction intended or spin it with the butt in the air, no easy weapon to dodge. Sometimes a tree absolutely refuses to fall and then the axeman, literally taking his life in his hands, has to fall several others until the lot comes down with a terrific crash and the vines lash out viciously on all sides.

Once the land is clear the work of planting the bananas begins. The young tuber, or *uri meika*, to give it its native name, is cut away from the parent plant, which usually has several nestling at its base, and is planted in a hole—the bigger the better—about two feet deep. Each tuber is separated by a distance of from six to eight feet according to the richness of the soil. It has then to be kept clear of wild rank growth which would soon steal from the more useful plant the nourishment which it so needs during its early growth. The *auarua kino*, or bad tobacco plant, offers the greatest menace to the young plant. In five months this rank growth will have attained a height of ten feet, and in twelve it will be a young tree. The work of keeping down such rank growths, and also the water grass, is one of the most trying parts of plantation work, and neglect of it spells ruination.

The Polynesians are happy, careless workers. On Monday and Tuesday they work fairly well, but slacken on Wednesday, are tired on Thursday, and on Friday need a lot of overseeing and encouragement. They are not quick workers unless on contract, and do not work at all—except on their own semi-cultivated patches—if they can avoid it. They are careless and erratic in their idea of the turn-to hour in the mornings, and may come half an hour too soon or an hour too late. But when told that the latter is the case they

only smile and reply "*Kari peka peka*"—"Don't worry"—which, of course, sets the employer at his ease. These child-like but wise people are always ready to take all you give and ask for more. A few years ago, of which we write, the ruling rate of pay was either £2 10s. per month and keep and quarters, or 2s. per diem and midday meal of bully beef, biscuits, tea, sugar, and sometimes rice, while they are always at liberty to boil any windfall bananas or wild plantains. The latter grow in plenty and are called "*uitu*," "*feys*," or "*meika taraua*."

When the banana plants are about six months old it sometimes happens that some of the last leaves are twisted in the form of a spiral. The natives believe that the banana leaves become so twisted if a hurricane is due. It happened quite recently when leaves were observed to be twisted that following on three days of most suspicious calm, a hurricane swept over the island. For fifteen hours it raged, and during that time one of the writers remained in the plantation house by himself—having built it, he wished to stand by it, so he explained.

The plantation the next morning presented a wonderful sight. On all sides was devastation. The estate had the appearance of having been on a wonderful spree during the night and had now come home to sleep it off. Barely a banana stalk was standing in the portion planted by the old-timers, and it was possible to believe that the gods of the bush had descended from their Olympus above—"Iki Rangi," "Heaven's Tooth"—in a frenzy of rage, breaking clean off on their way about a third of all the candle nut and other trees as well as the only two coconut trees. The usually dry creek was a roaring torrent, falling in a mile 500 feet to the sea. But on the new plantation, standing some 600 feet above sea level, not a single banana plant was down. Frayed they were, but thanks to a shelter of bush on all four sides they were standing, and with the central spiral in most cases intact.

The days pass and the bananas grow. The plantation has been a success, and when the next island steamer calls, she will take away many cases of bananas that were reared on the plantation.

With the steamer due in three days the cutting must begin. With ferns or leaves in their hair to cool their heads and with

their large knives, or hooks, the boys line up for their instructions, and a parting intimation that a good day's cutting will not be overlooked. They are warned, too, to bring no immature fruit in and to cut each tuber close to the ground. They listen, answer "Aye!" and depart in different directions; some in small parties and some alone.

The boys have a strenuous time as they wander about the hilly country in search of the mature fruit. A bunch of bananas is no light weight, and to carry two bunches, one on each end of a pole, through water grass sometimes knee or hip deep, over bogs or amid hidden rocks, requires condition and considerable agility. Half an hour after setting out they begin to drift in again, all fully laden, wet, perspiring and puffed. They are all happy though, for they are not yet tired, and each is boasting of the splendid bunches he has procured. Any boy who has struck a patch of small bananas comes in for a deal of chaff—all taken in good part, though perhaps somewhat rudely answered. His time will come and the chaffed one will have his "chip" in turn.

At midday, a spell is called for an hour, and, having eaten heartily, they smoke and yarn until the shrill whistle, warns them that time is up.

As the afternoon wears on, and the sun gets lower, they remain away longer as they find the bunches more scattered and further afield. Four o'clock comes and the boys, wet, weary, foot- and shoulder-sore, announce that the last bunch has been cut. Poles are thrown down, trousers slipped off, and if the creek is running, they go down to the hollow for a dip. From below, their voices float up musically to the accompaniment of splashings and slapping of wet clothes upon the rocks beside the pool, as they ineffectually try to knock out some of the plantation mud. The stains of the juice from the cut banana stems are indelible.

That night a rough tally of the cases the total cutting will fill is made, and Revell goes to the "town house" to arrange for girl labour to pack the fruit the following day. Cajolery, persuasion and good temper are essential and the whole matter is best treated as a joke. Of course, they all say they will come, but as a race they find it easier to say "Yes" than "No" and probably only half will turn

up, so it is necessary to compute accordingly. They promise to arrive at 7 a.m., but that means a couple of hours later.

Next morning they turn up with their little brothers, sisters and cousins, and having deputed one of their number to make the tea and generally manage the commissariat department, they turn to. In a short while several girls are sitting astride their respective cases breaking the "hands" from the stem and packing them, under close observation, discarding speckled fruit, immature "hands" or those possessing any defect which might attract the inspector's eye, when the cases reach the wharf. The hardest work is the employer's. He must see that all these things are done and that the fruit is packed tight enough, for, as they ripen they become softer and the evaporation of the sap in the skin shrinks them considerably. If this happens it means that with the handling on buggy, wharf, barge and steamer, they will bruise and arrive at their destination in a fermented state, which means heavy loss.

About three bunches go to a case. The

girls are paid at the rate of threepence per case and food for the day, and as a penny wise is a pound foolish policy in handling such people it is probable that there are several little extra mouths to feed, whose only contribution to the work has been the noise and laughter.

"*Kia ora ana!*" The day's work is finished, and the girls, their fingers black and sticky with the banana sap, and their dresses stained or torn, disappear down the little bush track laughing and singing and calling good-bye.

While the girls have been packing the cases the boys have been cutting their own small portion of the cargo, but on the morrow they return and nail up the cases. They carry them on their shoulders to the buggy-track, at the bottom of the hillside, from where they are carted to the wharf and thus to the ship which is to bear them to New Zealand, six or seven days' journey distant.

The bustle is over again for another three weeks or so and the daily life of the plantation resumes its normal round.

AERIAL ATTACKS ON WARSHIPS

Many very exaggerated statements have appeared in various organs relating to experiments recently carried out to determine the effect of aerial bombs and torpedoes on armoured ships of war.

It has for instance been asserted that the American Air Service dropped bombs upon the ancient battleship *Indiana* and that in such dropping 41 per cent. of hits were scored from 6,000 feet, and that the ship was sunk by this attack. The facts are quite otherwise.

A target representing a battleship was laid out on earth, and dummy bombs to the number of over 100 were dropped from 6,000 feet; 19 per cent. of actual hits were registered, and 41 per cent. were registered within what was considered a dangerous proximity to the target.

The tests on the *Indiana* were made by electrically exploding bombs placed in position relatively to the ship. One of these was 1,800 lbs., and was exploded on deck and did an enormous amount of damage to gun turrets and the like. The second of 880 lbs. was exploded in the water,

about 40 feet from the stern, and at a depth of about 50 feet. The explosion of this bomb caused much damage to the rudder and to the stern framing, and caused a leak which led to the ship settling on the mud. No live bombs were dropped by aeroplanes upon this ship.

A statement appears in one French journal that the ex-German Dreadnought *Baden* sank after a "little discussion" with certain British aircraft. As a matter of fact the *Baden* was sunk by gun-fire from a British monitor specially equipped with a turret mounting three guns of not less than 13.5 inch calibre in the course of tests of the new armour piercing projectiles used by the British Navy.

After having been so sunk and while she was lying on the mud with a heavy list, the *Baden* was torpedoed by a British aeroplane. No information whatever as to the damage caused by this attack has been published by the Admiralty, but she certainly did not sink as the result of any aerial attack.

AERIAL SURVEY AT HOME ON THE "ACIELLE"

BY
H. G. FRANKS

The *Acielle*, a 36-ton motor yacht, is accompanying the Curtis flying boat *Sea-Gull*, which is surveying the east coast of Australia. This survey commenced from Sydney, and the party has now covered the coast line from Sydney down the New South Wales and Victorian coasts to Lakes Entrance and crossed Bass Straits to Launceston, where they are at the time of writing.

THE droning of a motor engine reached the ears of early risers at Lakes Entrance, Victoria, one morning recently, and hurrying into the open they beheld a flying boat making straight down for the Lakes in front of Cunningham.

The sight was an unusual one and the enthusiasm of the spectators was aroused

The party, seven in number—all returned soldiers—are engaged on an aerial survey of the coast line of Australia and Mr. Lebbeus Hordern, of the Aerial Co., Ltd., of Sydney, later intends to present all photographs, observations and data collected, to the Defence Department.

The *Acielle*, which is 70 feet long and 14 feet beam, is equipped with a 45 h.p.



Lakes Entrance, Victoria. Photograph, which was taken from the "Sea-Gull" during a flight, shows the township, the Entrance Piers, the 90-mile beach, and the Gippsland Lakes.

as the plane landed gracefully on the stretch of water fronting the Lakes Entrance township and finally came to a rest alongside the jetty of the Club Hotel, where the pilot and his mechanic stepped off and calmly made their way to the hotel for breakfast.

Thus did Mr. Lebbeus Hordern's Curtis flying boat *Sea-Gull* arrive at the Victorian Lakes. Later in the day, a trim little motor yacht, the *Acielle* arrived with the remainder of the aerial survey party on board.

engine which develops a speed of eight miles per hour. She is fitted with a small electric lighting plant, also with a dark-room for developing and printing aerial and panoramic photographs taken during the expedition and this vessel in carrying out the duties of a parent ship is rather unique in the history of Australian aviation.

The writer spent a most delightful time aboard the *Acielle* while she was in the Lakes. His first introduction to the neat little craft, being after an exhilarating

early morning flight in the *Sea-Gull*, to have breakfast at the invitation of Captains Lang and Snook.

Captain Snook, master of the *Acielle* and leader of the party, an aviator by modern profession, was the leader of the first British aerial bombing raid on Brussels, an escapade for which he paid dearly, it costing him many weary months of exile as a prisoner of war in Germany. He constantly wears a smile and neither excitement, misfortune or worry seems to ever disturb his good temper. He is always ready to entertain a guest, make a motor dinghy "go" or scrub deck on an early morning.

Captain Lang, the pilot, of the flying boat *Sea-Gull*, is by no means talkative, believing in work and not words. As a pilot he is an expert, having flown a greater variety of aircraft than any other man in Australia. He holds the world's height record for a two-seater aeroplane, having taken his machine up to 30,599 feet above sea level. He is a well known motorist and boxer, and during the War

was a valuable experimental and test officer with the Royal Air Force in England.

The "birdman," is of course, comparatively helpless without his two trusty mechanics. These two men are great workers, thoroughly experienced and well fitted for their work, one having been brought out specially by Mr. Hordern to attend to the engines of his flying boat fleet.

Early one morning the *Acielle*, with the Premier of Victoria, the Hon. W. T. Lawson, and two other Government officials, Messrs. Pennington and Kermode, proceeded up the Lakes Entrance to Bairnsdale. It was a delightful trip and thoroughly enjoyed by all on board, all of whom had a taste for flying in the *Sea-Gull* before the return to Lakes Entrance.

The writer's visit on board the *Acielle* was one of unalloyed pleasure and it is beyond all question that the best wishes of all who know of this venture will go out to the party in the very valuable work in which they are engaged.

Dutchman Designs Airship.

From Holland it is reported that a Dutchman, Herr A. Boerner, has designed a new type of airship, for which it is claimed that it is not subject to loss of gas, while the danger of fire has been eliminated without resorting to the use of helium gas, ordinary hydrogen being used. Briefly, it appears that the principle employed consists in interposing between the outer air and the hydrogen in the ballonets a layer of nitrogen. In addition to the fire-resisting qualities resulting from the nitrogen layer, it is claimed that this gas reduces the loss of hydrogen due to diffusion to a very small quantity. As the airship is of very large dimensions—there is talk of a length of 950 feet and 300 passengers—it will probably be a little while yet before the craft is built. In the meantime, one would imagine that the principle could be tried out on a smaller scale with advantage.

LETTER TO THE EDITOR.

New York,
April 25, 1921.

The Editor,
Sea, Land and Air,
Sydney.

Sir,—On page 705 of your February issue is an article "Magnetic Landing and Starting Platform for Aeroplanes." This is an invention of the writer's, patented in the United States, and we enclose herewith a reference which, as you will see, was published a few years ago.

The writer trusts in fairness that you will give him credit, and you may reprint the entire article, if necessary, in your interesting journal.

(Signed) H. GERNSBACK,
Editor, *Science and Invention*.

YACHTING AND WIRELESS

BY
F. N. TOOHEY

Before leaving Melbourne for a cruise to Westernport, Victoria, in the writer's yacht *Kestrel*, nine tons (Royal Yacht Club of Victoria) recently, it was decided to carry out some experiments in wireless telegraphy. The Deputy Director of Radio Service, Postmaster-General's Department, issued an experimental receiving license

yards and rigging, had to be so arranged to enable it to be dismantled at short notice in the event of heavy weather.

Assisted by Mr. M. Ryan, radio officer of the s.s. *Westralia*, a four-wire bird-cage aerial in four sections was constructed. Spreaders were fitted to the end of the bowsprit and the masthead, and another



The Yacht "Kestrel" in Port Phillip.
The wireless aerials are plainly visible.

for the *Kestrel* which was unique, being the first one granted to a yacht in Australia.

The receiving apparatus consisted of No. 1 and No. 2 "Expanse" units, crystal detector, 'phones, Marconi "VT" Valve, a 6-volt accumulator for the "A" battery and one 60-volt Diamond dry cell for the "B" battery. The aerial which was restricted in size to keep clear of the hal-

at the end of the boom. The "lead in" came down through the cabin skylight to the instruments on the cabin table. The earth lead was attached to the centre board and an extra one consisting of a Muntz metal sheet put overboard. When under way the after ends of the aerials were brought to the main rigging and lashed; the for'ard ones being well clear of the jib.

The main cruise having come to an end, the *Kestrel* was moored at Hastings and experiments restricted to week-ends. After experimenting it was found the Marconi "VT" valve was unsuitable, our theory being that the aerial was too small. A Marconi "V24" valve was then tried which proved very satisfactory. From then on our experiments were highly successful, static giving very little trouble. One evening, using Galena, a station 450 miles away was picked up half an hour before sunset, which the writer understands is the best time for receiving signals in Australian waters. At Rhyall (Phillip Island) we received signals at a distance of 600 miles with the valve at night, there always being plenty of traffic.

We returned to Port Phillip during Easter, dismantling the aerial for the passage, and when experimenting while the

Kestrel was moored off St. Kilda, we found conditions entirely different from those experienced in Westernport, local interference being bad. A few days later the *Kestrel* was hauled up on to the St. Kilda Yacht Club's slip with the aerial up and attracted more attention than any other boat that had been in the yard before and was literally besieged by photographers.

Subsequent experiments off Williams-town produced considerably better results than at St. Kilda, whilst a week-end to Mornington gave examples of the screening effect of high land.

In conclusion, the experiments were highly successful, the weather forecast being invaluable and well worth the trouble taken in fitting the *Kestrel*, and the writer has no doubt that before long practically every yacht cruising along the coast will adopt wireless.

HERE AND THERE

British Pilots for China.

British pilots seem to be distributing themselves well over the face of the globe. The latest news is that Messrs. C. R. McMullin, A. Campbell-Orde and O. P. Jones have by now arrived in China, where they are to establish a commercial air service between Shanghai and Peking. Their machines will be the Vickers *Vimys* already supplied to the Chinese Government.

H.R.H. the Prince of Wales at the Ross Smith Lecture.

H.R.H. the Prince of Wales attended by Captain the Hon. Piers Legh was present at Sir Ross Smith's lecture on the England-Australia Flight at the Philharmonic Hall on April 26. His Royal Highness spent the interval talking to Sir Ross Smith and his brother, and expressed the opinion that the lecture should be visited by all school children.

Be Sure!

A motorist who keeps his car at a public garage had a very unhappy experience recently. He had ordered some petrol, and the tins were brought along and ranged beside the car. Joyfully he filled the tank. But sorrowfully he plied the starter later on. One of the three cans contained two gallons of water! Now there is a lesson

here both for the motorist and the garage staff. Petrol cans that are used for water should be plainly marked in some way, and the motorist should make sure before he pours. A can without a seal should always be suspect.

"Flying Pullmans."

A correspondent, writing to a Cape weekly, encloses a cutting of the following Reuter cable which recently appeared in the daily press:

"Holland and Britain are being brought into quicker communication by the inauguration of a daily Dutch air service between London and Amsterdam. The scheduled time is four hours, and the fare ten guineas. There will be a connection from Amsterdam to Copenhagen by 'flying Pullmans,' luxuriously fitted with armchairs and writing tables."

He adds: "As a South African lately returned to Capetown I may say I have travelled in less than four hours in luxuriously fitted airplanes from Scheveningen to London, more than ten months ago; and ditto from there to Copenhagen and Hamburg, picking up fast Zeppelin 'expresses' between leading towns of North and South Germany en route to Switzerland, more than twelve months since."

ELECTRO-MAGNETIC BRAKES FOR AEROPLANES

IT is a well-known fact that when the aeroplane was first brought out by the Wright Brothers, of Dayton, Ohio, one of the greatest troubles they experienced was in making a safe landing. At first wooden skidding arrangements were used, while afterwards heavy rubber pneumatic tyres came into vogue to take up the shock when the aeroplane alighted.

When an aeroplane lands on a plain or a large grass plot and it comes to rest, the danger is, of course, over. As aerial science is progressing, however, and as aeroplanes are forced to alight sometimes on very narrow platforms, the landing becomes more and more dangerous due to the smaller and smaller landing area which economic conditions make necessary.

It is safe to predict that during the next twenty years our entire mode of life will have been revolutionised. Aeroplanes within ten years from now, particularly during the period of reconstruction after the late war, will become as plentiful as automobiles. The landing problem, therefore, becomes more and more important, and it goes without saying that when aeroplanes alight in a crowded city, they will not have large grass plots on which to land. Naturally, the roofs of our tall buildings immediately suggest themselves. Nor is this a new idea. There exists today in Philadelphia an hotel, the "Bellevue Strafford," which has a landing platform on its roof. But this platform has never been utilised as yet, for the good reason that it has been too dangerous, the landing area being too small.

Up to this time there has not existed a device whereby it was possible to make a landing on a small plot for the reason that when an aeroplane comes out of the sky it cannot stop instantly. Its momentum usually carries it forward as much as 100 yards. Were the aeroplane to stop abruptly, it would naturally turn either a somersault or otherwise the machine would become wrecked. The same thing only on a smaller scale happens to an express train going at sixty miles an hour when the emergency brakes are set abruptly without

the brakes gradually taking up the momentum of the train.

Recently it has been proposed to stop the momentum of aeroplanes by having them land on a wide strip of belting revolving in opposite direction to the oncoming flyer. While this idea is feasible it has never been used in practice, and it becomes obvious that it could not be used except from one direction. For instance, if the aeroplane came on at right angles to the moving belt, it would most likely be overturned. For that reason this device may be considered as impractical. Of course, when the weather is clear and the wind velocity is not great, an expert aviator will not have much trouble in alighting on a comparatively narrow runway as has been proved right along by seaplanes making successful landings on battleships. At present our Navy has quite a few battleships equipped with narrow run-ways as explained above, but these are useless in a heavy sea, or when a gale is blowing. The reason is that even if the aeroplane should make a successful landing, it would almost surely be tossed into the sea by the combined pitching and rolling motion of the vessel, as well as by the wind trying to blow the aeroplane into the ocean. Quite a number of accidents have happened in the past, due to these causes, and no doubt will happen in the future until some remedy is found.

Mr. H. Gernsback, who has given this problem consideration, seems to have found an astonishingly simple solution whereby it now becomes possible for an aeroplane to make a landing on a very small area, no matter what its speed. The present invention, on which patents are pending, is described herewith. Mr. Gernsback has also offered his invention to the Navy Department in connection with hydro-aeroplanes alighting on battleships at sea.

To grasp the idea clearly one has to picture a future landing station "somewhere in the city of New York," on which a transatlantic aeroplane is just settling; the landing platform in this case being constructed of very heavy glass. Into this

glass, which by the way is transparent, are sunk a number of large powerful electro-magnets such as are commonly used for lifting purposes. The idea of the transparent glass is that powerful searchlights can be placed underneath it, and the entire glass expanse therefore will stand out sharply from its surroundings. Thus, an aeroplane from a considerable height will see the landing platform readily by night.

The electro-magnets in this case would be quite large, say fifty or sixty inches across, each being capable of attracting about 200,000 pounds. These electro-magnets are by no means futuristic ideas. Large electro-magnets are being built right now that can lift anywhere from eight to ten tons at contact.

In further explanation of Mr. Gernsback's idea, it must be realised that the aeroplane has two iron-armoured pontoon-like projections instead of the usual wheels, or instead of the usual boats as are used on hydro-aeroplanes. It now becomes apparent that as the aeroplane comes within a few feet of these energised electro-magnets, there will ensue a powerful electro-magnetic attraction between the electro-magnets and the iron pontoons of the aeroplane. The tendency will be to pull the aeroplane down into contact with the electro-magnets, but inasmuch as the flying machine still has considerable momentum, it will not stop at once, but will glide over a number of electro-magnets until it finally comes within a few inches of the last row of electro-magnets when the maximum tractive effect will be had. The aeroplane will then be pulled down entirely so that pontoons come into actual contact with the huge electro-magnets, completely arresting the flight of the airship.

Now it must be understood, and it should be realised that these electro-magnets have no effect whatsoever upon the iron pontoons until the latter come within two or three feet of the electro-magnets. A metallic mass must come quite close to an electro-magnet before any appreciable attractive effect is had. From this it will be gathered that this invention does not purport to pull the aeroplane "out of the sky" as some people might think. It does not do anything of the sort. The idea simply is to arrest the motion of the aeroplane while in the act of landing and then

hold the machine securely. If these electro-magnets were not used, then it undoubtedly would often happen that the aeroplane could not stop quickly enough, and in this case it might slide over the edge of the landing platform down into the streets. Also, while making a landing in a gale, such a huge machine, which necessarily must have a large wing area, becomes a toy of the elements; even if it had completely stopped, the wind might carry it away before the commander would have time to get the engines running at full speed. All this the electro-magnetic brakes will prevent. Once the aeroplane has settled, the electro-magnets will hold it as securely as if it had been riveted to the platform. Then after the landing has been made, the aeroplane can be readily secured to the platform by guys or ropes, so that the winds or storms cannot carry it away; this being only a matter of a few minutes, the power can then be turned off from the electro-magnets and no current is then used.

Another important point worth remembering is, that as the iron aeroplane pontoons fly a couple of feet above the electro-magnets the tractive effect, while not abrupt, is sufficient to retard the motion of the aeroplane gradually, and the electro-magnets in this respect will act exactly as the reversing of a ship's propellers in the water. In other words, the momentum of the aeroplane will be absorbed gradually and not suddenly. Furthermore, the pontoons may be equipped with small wheels, just extending a little distance from the lower surface if this is desired. Or, otherwise, the glass landing platform may be greased by means of some form of lubricant. If either of the two precautions were not taken, there would almost certainly ensue a terrific "grinding" action when the pontoons finally settled on the platform, and when the aeroplane was still in motion. However, these are small technical details left to our engineers; there are at present a number of simple means to effect a smooth final landing without the grinding element contained in it due to excessive friction.

One can readily realise how the invention can be adapted to hydro-aeroplanes making a landing on battleships and the like. As mentioned before, such landings at present are very dangerous, and often disastrous. The electro-magnetic brakes

will do away with all this, and once a landing has been effected it will be almost impossible for the aeroplane to leave the narrow landing stage no matter how much the ship pitches, or what the wind velocity is. If the iron pontoons of the hydro-aeroplanes only engage two electro-magnets, an enormous tractive effect anywhere from two hundred to four hundred thousand pounds can be readily obtained. It is easy to realise how the invention works out in practice. As soon as the operator who is in control of the electro-magnets sees the oncoming aeroplane, he has it in his power to gradually switch on current into the electro-magnets. Thus, for instance, the two foremost electro-magnets can be energised but half or one-quarter if required, so as not to jerk the aeroplane or stop it too soon. In other words, a gradual braking action can be had at the

will of the electrician in charge. If the rolling of the boat and the wind is very strong, he will use more power, or else he can "flash" the electro-magnets. By this is meant to overload the electro-magnets 50 to 100 per cent. Thus, an electro-magnet usually capable of attracting a weight of 100,000 lbs. can be energised by using double the quantity of the current to give a tractive effect of over 200,000 lbs. Naturally this would be only for half a minute or so, as otherwise there would be danger of burning out the windings. However, inasmuch as the aeroplane makes a landing in less than ten seconds, the "flashing" of the electro-magnets is of no consequence. As soon as the aeroplane has come to rest the blue-jackets will be ready to lash it fast, and then the current can be switched off.



WIRELESS IN FIJI

BY
R. ALEXANDER

The comparatively small population of European settlers in the outlying districts of Fiji have every reason to be grateful for the extra protection which will be afforded them, if necessary, by the use of wireless. The long-drawn-out strike of the Indian coolies employed on the sugar plantations has rendered the existence of the settlers more than ordinarily dangerous and military field wireless sets have been utilised for communication, should the necessity arise. One can picture the terrible plight of the residents in such districts as Lautoka, Ba and Sigatoka should an uprising take place, and the telephone wires, which form the only means of communication with Suva, be cut. The residents would be entirely isolated and might easily be wiped out of existence before the authorities knew of their plight, or could render assistance. To

obviate such a possibility 1.5 K.W. Marconi field sets have been installed at each of the foregoing settlements. The sense of security which this precaution ensures is a valuable asset in assisting the peaceful development of the interior.

The wireless network on the island of Vitu Levu, which is the principal island of the group, together with the permanent installations on the islands of Vanua Levu, Taviuni, Lava Savu and Ovalau, provides what is probably one of the finest systems of inter-island communication in the South Pacific. This is further evidence of the fact that the practically limitless value of wireless communication is patent to the authorities, and the wisdom of utilising it for such practical purposes as outlined above is deserving of the highest commendation.

QUEER TALES AND LEGENDS OF AUSTRALIAN ABORIGINALS

BY
KAE MacDOWELL

If all the quaint myths and legends of the Australian aboriginals were assembled for publication, there would probably be found sufficient to compose quite a library. Some of the tales have been handed down by word of mouth from the very earliest times. These tell of the creation of man and the deluge, while those of infinitely later dates, no doubt, have evidently been aroused by superstitions connected with

birds were very wise, indeed—far wiser than the blacks themselves. The eagle-hawk was the chief of them and next in authority to him came the crow. All these progenitors whether birds or humans, if their deeds were mighty enough, after they died, were set in the skies and shone as stars. The eagle because he was a great fighter became the planet Mars—and the crow is also a star.



An Australian Aboriginals' Camp in the Interior.

the appearance of the white man in the midst of the aboriginals. Many of the tales, even those that at first appear entirely nonsensical may upon investigation, be found capable of beautiful and reasonable interpretation, and scientists have found them extremely valuable in research theories regarding the preoccupation of the country by a distinct race.

Smyth tells how the blacks of Northern Victoria believed that the eagle and the crow were the original creators of all things, and that for a long time these two beings were at continual warfare. Before the advent of man, birds were supposed to hold possession of the country and these

Another version of the eagle legend came from the Gippsland area, where it was told how, one day an eagle left his son in charge of the mopoke while he went hunting. But the mopoke having sewed his charge in a bag deserted him. For vengeance the eagle imprisoned his enemy in a hollow tree from which the mopoke found it impossible to escape, except by breaking his leg and using the bone to cut his way out. After his escape the two made a solemn compact, the conditions of which were that the eagle kingdom should include the topmost branches of all trees, so that he might from so great a height discern best where the kangaroos were

feeding. In return, the mopoke was allowed to occupy the holes in trees.

A tradition of the Melbourne blacks was that the great "Pundjel" made of clay two males, took stringy bark from a tree, made hair of it and placed it on their heads—on one straight and on the other curly.

James Dawson, in his interesting book, tells the story of the bad spirit "Muuruup," called sometimes by another name which means maker of bad smelling smoke. He is the bogey-man of the Australian aboriginal and is spoken of with fear and bated breath as the author of every misfortune. Not only does he visit the earth in the form of lightning, knocking trees to pieces, setting fire to "wuurus"—homes—and killing people, but he assumes the form of an ugly giant and frequents the scrub and thickets, darting about from place to place with lightning-like rapidity and hungering for the flesh of little children. The blacks have a particular dread of "Muuruup" at night time, for they say he employs the owls to watch and give notice when there are any stragglers around the camp, that he may pounce upon. When an owl is heard screeching or hooting it is the signal for children to crawl beneath their grass mats and hide.

"Muuruup" lives deep down in the ground in a place called Ummekulleen and he has a number of attendant spirits under his control which are occasionally permitted to visit the earth. Scarcely has anyone ever seen this ogre, but he is described as a black man carrying a great many spears and a long train of snakes streaming behind him. No one has ever seen his home, but there is believed to be nothing but fire and the souls of bad people there who get neither meat nor drink and are under constant torture at the hands of evil spirits.

Quaint indeed is the fable of the emu and the native companion—also told by Dawson. A native companion and an emu, each with a brood of young ones, went one day to a swamp to get sedge roots, which are very good to eat. First they kindled a fire, for the roots are best roasted, then they waded into the water to collect their supplies. The native companion was quick at her work and hurried to the bank and with the aid of a long pole pushed her roots into the fire, covered them up and hid the pole before the emu returned

with her supplies. The emu not knowing of the long pole, used a short stick to push her roots into the fire, first badly burning one foot and then the other. She tried her wings next and then her bill, and got each scorched in turn. Finally she ran back to the swamp to cool the burns. On returning she discovered the selfish native companion and her young ones digging the roots out of the fire with the long pole and eating them. She was naturally very angry at the trick that had been played on her and decided on vengeance at the first opportunity.

Some time afterwards the two again went to the swamp and kindled a fire which they left the young emus to watch, the young native companions accompanying their mother. This time the emu got back first and after roasting the roots and feeding her young ones she hid them all but two. When her companion returned she enquired what was cooking in the fire and was informed by the emu that, as she had been unable to procure roots and being very hungry she had killed, cooked and eaten all her young ones except the two that were running about. Thereupon the native companion also being hungry, killed her young ones except two and put them on the fire to roast. As soon as she had eaten them the emu called her brood from under their hiding place and addressed the "bereaved" one thus: "Now I have punished you for deceiving me on a former occasion and from henceforth you shall never have more than two young ones instead of a dozen as I have—and as you had before you played this trick on me."

The Turkey and the Waterhole.

During one terrible drought when there was no water in the country and animals were perishing of thirst, a magpie-lark and a gigantic crane conferred to see what could be done. They were much puzzled to know why a certain turkey of their acquaintance was never thirsty, and resolved to watch and see where he found water. Hovering high in the air they saw him approach a flat stone. Before lifting the stone the turkey looked carefully around to see that none was watching. Then he lifted the stone and drank from a spring running out of a cleft in the rock. When he had replaced the stone and gone away, down flew the magpie-lark and the crane

and took a drink and a bath. "We have done him," remarked the magpie-lark. They then flapped their wings with joy and as they flapped, the water rose till it formed a lake. They afterwards flew over the whole country forming waterholes which have ever since remained as drinking places.

Coming to more modern times we find that the aboriginal considered the first white man seen as a wholly supernatural being. In southern Victoria he was discovered by one of the tribes in the act of smoking a pipe. They were horrified to discern smoke coming out of his mouth, and thinking he must be made of smoke, forbore to attack him. Probably he owed his very life to his tobacco pipe. Some little time afterwards the same tribe saw

tin tied across its face to prevent it straying too far away. Never in their lives had they seen such a large animal, and took to their heels in fright. In the night time, however, it came right down to the encampment and walked about bellowing, and the blacks took cover and waited trembling until daylight. In the morning they saw what they believed to be a "Muuruup" with two tomahawks in his head, but no one dared to move. As soon as the extraordinary and terrifying visitor deigned to depart a council of war was held and the bravest men, accompanied by their women and children whom, under the circumstances it was impossible to leave behind, started in pursuit.

They tracked the animal by its great footsteps for several miles and at length



A Modern Aboriginal Village Street, Saibai Island, Torres Strait.

a white man intoxicated and, thinking him mad, ran away.

Dawson relates how the first ship was described by the blacks as a huge bird or tree growing on the sea. It created such abject terror that the messenger who was despatched to inform the chief of the tribe, was declared to be insane and ordered to be bled by the doctor.

The Victorian blacks' first impression of a bullock was more amusing still. They were very busy fishing at the Wuorong Yaering waterhole when the animal—evidently some stray working bullock belonging to an exploring party—wandered down to get a drink. It had a piece of

came upon it grazing. Approaching it with some trepidation they then enquired of it—if he were a white fellow and would he please give them the two tomahawks that were upon his head. For answer the bullock pawed the ground furiously and roaring and shaking his head, charged them. At this the panic-stricken aboriginals fled precipitately, upsetting men, women and children and smashing their weapons in their headlong retreat. The date of this incident, according to Dawson, was about 1821.

About twelve years later, John Bateman bought a tract of 100,000 acres between Geelong and Queenscliff, Victoria, from

the three principal chiefs of the area, Jagejaga, Jagujaga, and Jagajaga, for about fifty handkerchiefs, twelve red shirts, four flannel jackets, twenty pairs of blankets, four suits of clothes and a few minor articles. The transaction was, however, disallowed later by the Colonial Secretary in London.

Mr. Goodal, one time Superintendent of the Frawlingham Aboriginal Station, knew personally the black woman who had been the wife of the convict Buckley who in 1803 made his escape into the Victorian bush. This woman told Goodal how one day, near the River Barwon, the tribe discovered huge footprints on the sand dunes and decided that they had been made by some gigantic stranger who would surely be an enemy. After searching they found the stranger lying in the sand on a small hillock after a bath in the sea. Without letting their presence be known they stole away, collected the rest of the tribe and warily enclosed him. To their astonishment when they approached him, he took little or no notice of them. This alarmed them, but presently one of their number summoned up courage to speak. He addressed the stranger as "Muurnong Guurk" (meaning one who had returned from the dead), "You Koudak Baarwon"? he asked. Buckley replied with a prolonged grunt and an inclination of his head to signify yes. They then asked a number of other questions, suggesting that he was indeed one of themselves who had returned from the dead. To all of these questions, Buckley replied in the same way, which pleased them mightily.

Finally they accepted him as a wonderful friend, built a "wurruru" of leafy branches for him and lit a fire in front of it. As the news spread amongst the tribes numbers came to visit him, their curiosity mingling with fear.

When ships visited the coast for wood and water Buckley never sought to make himself known to any of them. On several occasions ships were wrecked on the coast and all hands perished. From the wrecks Buckley and his tribe secured large quantities of blankets, axes and other articles which he taught them how to use.

Then came John Bateman from Van Dieman's Land. When this news was brought to Buckley by one of the natives he was engaged in his favourite sport—fishing in the River Barwon. This, by the way, was thirty odd years after his escape to the bush, and in that time he had practically forgotten his own language. However, he was pleased to partake of the gifts sent through the blacks by Bateman and after ordering the blacks to collect the fish he had caught, a goodly number, he went to meet the white fellows. It was several days, however, before he could recall the English language sufficiently to converse fluently. In the meantime he was washed, shaved, and his hair, which had grown to a prodigious length, cut. When he was carried away in the great ship the blacks were greatly depressed and it was not till long after, when they heard of his marriage in Hobart Town, that they completely lost hope that he would eventually return to them.

SHIPPING NOTES

Shipbuilding in Queensland.

After a number of delays, including a three weeks' strike of rivet boys, the first vessel being constructed by Walker's Ltd., at their Maryborough Yards, for the Commonwealth Government Line, is to be launched early this month. The ship, which is of 5,500 tons displacement, is constructed of steel and is by far the largest vessel that has ever been turned out in Queensland. It is expected that the work of installing the engines and completing the fittings will occupy a couple of months, after which the trial run will take place.

In addition to the vessel referred to, Walker's Ltd., are also engaged on another steamer for the Commonwealth Government which, it is expected, will be ready for launching in about three months.

Stranding of the "Atua."

On Empire Day the Union S.S. Company's steamer *Atua*, while on a voyage from Lautoka to Suva, became stranded on an uncharted rock shortly after passing through the Benga Passage. The ship had on board a cargo of 1,800 tons of sugar for New Zealand, and was due to leave Suva that evening with mails.

The inside course of Benga Passage offers safe navigation for ships in daylight. It was about 5.20 p.m., shortly after the passage had been cleared that the ship struck several times with great force. Almost immediately water began flowing into the engine room. Boats were swung out and a wireless call was sent out and immediately answered by the *Niagara*, which was about a hundred miles away *en route* to New Zealand. An offer to return and render assistance was declined by Captain Frew, who realised that he could, without any great difficulty, beach his ship on a good bottom inside the reef. The engineers stuck bravely to their task, standing in two feet of water to keep the fires going.

Once the vessel was beached help was soon rendered by Mr. Farrar, of the Vancouver-Fiji Sugar Company, at Navua. Punts and lighters were sent alongside the *Atua* and portion of the sugar was trans-

ferred to them. The passengers returned to Suva by launch next morning.

A diver discovered a large dent and hole in the bilge just below the false bottom and water tank. It transpired afterwards that the obstacle which the *Atua* struck was what is known as a "horse's head" or coral pinnacle—same being uncharted.

Steamship Service to Fiji.

It has been announced that the Commonwealth Government Line of steamers will shortly provide a regular service between Fiji and England, *via* Panama Canal, it being felt that sufficient cargo will be available to ensure the success of the service.

Navigation Act in Operation.

The coastal trade provisions of the Navigation Act are now in operation, which means that no unlicensed overseas vessels will be allowed to embark passengers or load cargo for carriage between Commonwealth ports.

In certain cases where remote ports are concerned provision has been made for the issue of permits to unlicensed British vessels.

The Act itself is the longest ever passed by the Federal Parliament, containing no less than 425 clauses. Of these only 75 become operative this month, while several others, including wireless, will come into force in October. It is improbable that all the clauses of the Act will become operative for at least two years.

The present homeward voyage of the White Star liner *Ceramic* will probably be the last one on which any of the steamers of that Company will engage in the inter-State trade. It is almost certain that similar withdrawals in the case of the P. & O., Orient and other lines will also take place.

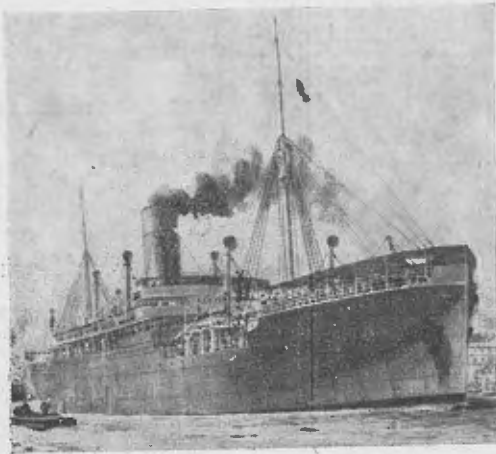
Motor Ships Replacing Steam.

During 1920 no less than one hundred motor ships aggregating a gross tonnage of 189,977 were launched throughout the world. At the beginning of 1921 one hundred and eighty-nine motor ships were in course of construction, totalling 454,502 tons gross. Practically all of these will be

launched before the end of the year, and taken in conjunction with the number commissioned during 1920 it will be realised what remarkably rapid progress the motor ship is making. In fact Swedish ship-owners have practically abandoned steamships in favour of motor craft.

Launching of the "Largs Bay."

The new Commonwealth liner *Largs Bay* was launched from the yards of Messrs. Beardmore on the Clyde, at the latter end of last month. The christening ceremony was performed by Mrs. Hughes, wife of the Prime Minister.



This illustration gives an idea of how the new Commonwealth Government passenger vessels now building in England will look after completion.

The vessel has a displacement of about 23,000 tons, and a sea speed of fifteen knots. She will burn oil instead of coal, which means a great saving in space as well as a reduction in the time required to load fuel at the various ports. Accommodation has been provided for 700 third-class passengers, the object of course being to meet the convenience of the Immigration Department when sending immigrants to Australia. In order, however, to make the utmost space available for cargo on the return journey from Australia, two-thirds of the cabins have been made portable so that they can be taken down, if not required.

Four more steamers, similar in size and design to the *Largs Bay*, are under construction for the Commonwealth Government Line in England. Each will be

equipped with motor lifeboats fitted with wireless, and despite their great size the vessels will be of exceptionally light draught. When the fleet of five is ready it is intended to inaugurate a regular four-weekly service between England and Australia, *via* Suez.

Australian Officers in London.

The Victoria League in London has expressed its willingness to extend every hospitality to Australian officers going to England for further training. Many of these men have no friends to whom they can go when on leave, and the action of

the Victoria League in arranging for them to be received into the homes of members, supplies a long-felt want.

Another Cargo Steamer.

A cargo vessel of 5,500 tons deadweight capacity, to replace the steamer *Era*, which was torpedoed in the Mediterranean during the war, has just been launched at Glasgow to the order of the Australian Steamships Co. The vessel is intended for use in the interstate coal and cargo trade.

Drawn from the Deep.

The suction dredge employed on the reclamation works at Mechanic's Bay has brought to the surface many curious objects. A cannon ball, weighing six pounds and measuring seven and three-quarter

inches in diameter was recently drawn from the silt twenty-four feet below low water level, through eight hundred feet of pipe to a height of thirteen feet above low-water level. Sovereigns, rifle cartridges and even counterfeit coins are amongst the articles that are almost daily brought to light. The dredge engineers evince the keenest interest in searching amongst the silt deposit on the reclamation area for fresh curios.

American Fleet.

The United States Consul in Sydney, Mr. E. J. Norton, has been requested by the American Navy Department to supply information regarding anchorage facilities, supplies for warships, etc., at Australian ports. From this it appears that an early visit from American warships is highly probable.

The Royal Dutch Packet steamer *Houtman*, on a recent voyage from Sourabaya to Sydney, *via* Thursday Island, established a record for the service by completing the trip in twelve days and a half. The *Houtman* is equipped for either coal or oil fuel.

The P. & O. Co. has inaugurated a new fortnightly direct passenger line between London, the Straits Settlement, China and Japan. The service will be conducted by 9,000-ton vessels of the *Khyber* class.

The New South Wales Minister for Works, Mr. Estell, recently promised a deputation from the North Coast, that as soon as Parliament met, the question of erecting a new jetty at Byron Bay would be placed before the Public Works Committee. If the work is approved it will be proceeded with at once. In the meantime a dredge would be sent to the Bay to make the anchorage safer. The deputation was the upshot of the recent stranding of the *Wollongbar*.

For the year 1918-19 the Commonwealth Govt. line of steamers made a profit of £1,160,000. The total profits since the establishment of the line up to June, 1919, were thus brought to £2,000,000. It has been ascertained that the profits for 1919-20 were nearly £1,000,000 less than the previous year.

The New Zealand farmers, through the Producers' Committee, are agitating for the establishment of a farmers' shipping company supported, but not controlled, by the Government. The Acting Prime Minister, Sir Francis Bell, has promised to lay the matter before Cabinet.

The huge shipbuilding programme upon which the Cunard Company has embarked, will, when completed, give that Line an aggregate tonnage of 1,018,000. It has been stated that the Company intends to enter the Pacific trade when the necessary ships are available, and its advent in that sphere will unquestionably be of great benefit to Australia and New Zealand.

Stepping a Mast.

The task of repairing the steel mainmast of the barque *Kilmeny*, which put into Fremantle in distress some time ago, has now been completed. The successful tenderer for the dismantling of the mast was Mr. C. A. Petterson, a well-known shipwright of the port, while the actual work of repairing the strained structure was undertaken by the Atlas Engineering Company. The job was the largest yet accomplished by the electric cranes of the Fremantle Harbour Trust. The weight of the structure which had to be removed was nine tons, and super-imposed on that was rigging weighing about sixty tons, which also had to be dismantled.

Volunteer Naval Reserve.

It has been decided to form a section of the Australian Naval Volunteer Reserve at Launceston. The scheme provides for fifteen sections, to be distributed throughout the six States. Two are to be allotted to Tasmania; one for Hobart and one for Launceston. Ordinarily, a section comprises one lieutenant, two sub-lieutenants, two warrant officers, one chief petty officer, four petty officers, and five leading ratings. Special encouragement will be shown to those possessing experience as yachtmen, fishermen, etc. Skilled tradesmen, such as plumbers, carpenters, joiners, shipwrights, telegraphists and electricians are also required. Enrolment in the reserve entails service in time of war, or any emergency, the object being to strengthen the naval personnel in time of national danger. The reserve, of course, is for "home service."

and the period of enrolment five years. Promotion to commissioned or warrant rank is conditional upon engaging for a further five years, or ten in all.

The new Chairman of the New South Wales Interstate Steamship Owners' Association, is Mr. E. B. Wareham, Sydney manager for the Adelaide Steamship Co.

Mr. Wareham, born at Rockhampton, Queensland, when only 21 was appointed manager of the old A.S.N. Co. at Cooktown. When the A.U.S.N. Company acquired the business of the A.S.N. in 1887 Mr. Wareham joined the service of Alpin, Brown & Co., Ltd., at Townsville. His first association with the Adelaide Steamship Co., Ltd., was as branch manager at Townsville in 1895. The following year he was appointed Queensland inspector and attorney for the Company, which position he held for 22 years. In 1918 Mr. Wareham opened a branch office for the Adelaide Steamship Co., Ltd., in Sydney, and still retains the position of Sydney manager.

From 1909 until the war broke out Mr. Wareham was Consul in Queensland for Austria-Hungary, and in 1917 was appointed Consul in Queensland for Japan, from which position he resigned on being transferred to Sydney in 1918. He is also Chairman of the Sydney branch of the Australasian Steamship Owners' Federation.

Australia-England Mail Service.

It has been arranged that the fleets of the Orient and P. & O. will conduct a regular fortnightly mail service between Australia and England. Under the new time-table, mail steamers will leave Sydney every second Tuesday, Melbourne every second Saturday, Adelaide every second Monday, and Fremantle every second Friday. This is the best possible service that can be arranged under the existing state of affairs, but it is hoped to ultimately return to the pre-war conditions under which a regular weekly mail service between the United Kingdom and Australia was maintained.

There is a provision in the new contract which gives the Orient Company the option, at its own discretion, of continuing the inward voyage of any mail steamer

to a port beyond Brisbane; and to commence the outward voyage from the same port. The Queensland Government is seeking the co-operation of the Commonwealth authorities in an effort to induce the Orient Company to take advantage of this provision and extend the voyage of its steamers along the Queensland coast.

Sea Scouts.

The Sea Scout movement was inaugurated in England in 1910, and rendered excellent service to the Navy during the War. One section blew up a floating mine, overhauled and captured a party of spies in a fishing boat, and gave information to a cruiser which led to the capture of a decoy ship. These particulars were furnished by Captain Stanley Spain, Sea Scout Commissioner, when inaugurating a branch of the movement in Sydney recently. A detachment of the North Sydney Sea Scouts, who attended the meeting, gave a display showing the dress and various exercises.

Fiji Trade.

The twin-screw steamer *Levuka* has been withdrawn from the Fiji trade and placed on the Melbourne-Cairns trunk line service. On this run she will call at Sydney, Brisbane, Port Alma, Flat Top (MacKay), Bowen and Townsville, and thence proceed to Cairns without transshipment.

The Fiji service, trade on which has fallen off owing to the cessation of banana shipments, will be carried on by the *Suva*, which is expected to maintain a four-weekly service between Sydney, Lautoka, Suva and Levuka.

American Tug Missing.

The American Naval tug *Conestoga*, bound from Mare Island to Samoa, with a crew of thirty officers and men, is believed to have met with disaster in the Pacific. The U.S. Navy Department has had a fleet of warships searching for the missing tug, but no trace has so far been discovered. The tug, which was in command of Lieutenant E. L. Jones, was last reported battling against a gale some 500 miles from Honolulu.

IMPORTANT NEWS FOR WIRELESS AMATEURS

Information of particular interest to wireless amateurs was given to members of the New South Wales Division of the Wireless Institute of Australia by Mr. Wilson, one of the Vice-presidents, at a meeting held in Sydney on June 14.

The information was contained in a letter addressed to the editor of *The Wireless Press*, New York, from the Navy Department, Washington, and was signed by the Acting-Secretary of the Navy.

As far as the United States is concerned, it contains the best news that radio amateurs have had for many years. To amateurs in Australia, who are striving for the same conditions as their brothers in America, it means a very great deal,

and we are glad to reproduce the letter just as it was written.

All sorts of excuses have been put forward by bureaucratic members of the Government, as to why the Government should have a monopoly of the ether, but in this letter is expressed the genuine opinion of a man who is in actual contact with the amateur, not only in times of necessity brought about by war, but at all times in connection with the operations of the large number of Naval stations operated by the Navy in his country. In his opinion it is quite clear that the universal use of wireless is of inestimable benefit to a country so long as it is properly controlled. This is what is required to ensure the progress of the art in Australia.

IN REPLY ADDRESS
THE SECRETARY OF THE NAVY
AND REFER TO NO.

Op-20-A

28761-93:126

NAVY DEPARTMENT

WASHINGTON

MFC(0) WKB

MAR 22 1921

Dear Sir:-

I have received your letter of March 9th with reference to the attitude of the Navy Department toward amateur radio operators, and I take great pleasure in outlining for your information and for the information of all amateurs in the country the following policy which it is my purpose to pursue in this connection.

It will be the desire of the Navy Department to further in every way practicable the interests of the amateur radio operators throughout the country, and with this principle established, it is hoped that the closest co-operation may be had between the Navy Department and the amateurs.

My knowledge of the patriotic and valuable services rendered by the amateurs during the World War is sufficient to convince me that, as a factor in the national defense, the promotion of the interests of the amateurs is not only desirable, but necessary, and I can assure you that this Department will advocate the freest practicable development of the radio art by all amateurs.

Very truly yours,

R. E. Coontz

Acting Secretary of the Navy

Mr. J. Andrew White,
Editor, Wireless Press,
326 Broadway, N.Y.

Aviation in Australia

Exploring by Aeroplane.

A company, backed up by ample capital, has recently been formed for the purpose of searching for gold, iron, copper, oil and other minerals in parts of Australia not easily accessible by any other means than an aeroplane. Those behind the venture have high hopes of securing the Federal Government's reward of £50,000 for the discovery of an oil field in Australia. They are also under a substantial contract to locate water courses and lagoons and good pastoral country. Negotiations are proceeding for the purchase of a small fleet of aeroplanes of the same type as those now being employed on exploring work in South America.



One of the first aeroplanes in Australia to have the Official distinguishing marks.

Archbishop Uses an Aeroplane.

A practical illustration of the wide range of usefulness of aeroplanes was recently demonstrated by Dr. Cleary, Roman Catholic Archbishop of Auckland, who made use of a seaplane to visit the outlying portions of his wide diocese. His Lordship is convinced of the fact that the aerial mode of travelling enables him to visit numbers of his flock whom he would not possibly be able to see otherwise, owing to the amount of time involved in travelling.

Seaplanes for Australia.

It was announced recently that the Defence Department had placed an order in England for the construction of six seaplanes for the Australian Air Force. The machines will be of the latest type, and the squadron, on arrival, will be stationed at Sydney.

Aeroplanes of Australian Timber.

Quite recently the suitability of Australian timbers for the construction of aeroplanes was brought under the notice of Senator Pearce (Minister for Defence) by Flight-Lieutenant Nigel Love, of the Australian Aircraft and Engineering Co., of Sydney. It was stated that local tim-

ber is from 15 to 25 per cent. better than Oregon spruce for making spars. An offer was made to the Minister to supply twenty-four machines at an all-round cost of £1,150, same to be fitted with Clerget engines already in possession of the Air Board. The offer has been considered by the Defence Department, and at a meeting of the Air Council in Melbourne it was decided to let a contract for the supply of six Avro aeroplanes. Officers of the arsenal branch of the Defence Department

AIRCRAFT INSURANCE

Dalgety & Company Ltd.

are now negotiating for the Australian representation of British Companies prepared to insure against all risks to Aircraft in commission in Australia. Rates of Premium will be available shortly.

Their policy will be on similar lines to their

Motor Car Comprehensive Policy

which is recognised as the best policy available, with lowest rates of Premium.

Particulars may be obtained from

DALGETY & COMPANY LTD.

15 BENT STREET ——— SYDNEY.

will supervise arrangements for the manufacture of the planes.

Lead From the Skies.

Mr. E. Kleemo, of Lindfield, N.S.W., was standing outside his home one morning watching the flight of an aeroplane overhead when a whirring noise attracted his attention. Instantly there was a thud and the surface of the ground was broken some little distance away from where Mr. Kleemo was standing. Going to the spot he discovered a piece of twisted copper wire protruding from the hole, and on wrenching it several times he drew forth a cylindrical piece of lead weighing nearly two pounds. It was learned afterwards that the lead and wire were part of the wireless aerial of the aeroplane.

Royal Australian Air Force.

The Minister for Defence, Senator Pearce, has been notified through the Governor-General that the King has consented to the designation of "Royal" being attached to the air force in Australia. In future it will be known as the Royal Australian Air Force.

Lieutenant A. L. Long, flying his *Sopwith Dove* 80 h.p. machine, claims to have established a new flying record for the distance between Adelaide and Melbourne. The actual flying time for the trip was four and a half hours. Lieutenant Long, who was accompanied by a mechanic, maintained an altitude of 12,000 feet during the greater part of the flight.

Under the regulations governing civil aviation, which became operative on June 28, all pilots and machines must be licensed, and will be required to conform to the laws governing air navigation. An examination of all the pilots and machines engaged in civilian aviation had practically been completed prior to the regulations coming into force. It is estimated that the number of privately-owned planes in Australia at the present time is between fifty and sixty. As these are scattered throughout the Commonwealth, an idea can be gained of the amount of time involved in travelling round examining the machines and engines for registration purposes. This work has been carried out by Captain E. J. Jones and Captain

F. W. Follett, who were accompanied by Dr. T. C. Backhouse.

At a recent meeting of the Queensland and Northern Territory Aerial Services, Ltd, the Chairman supplied an interesting statement, showing the cost of commercial aviation. He stated that an *Avro Dyak* machine had flown 7,400 miles in 111 hours with 285 passengers at a cost in fuel, oil and petty expenses, while in the air, of 48s. per hour or 8½d. a mile. Exclusive of the pilot's salary, the cost of carrying each passenger was 4½d. a mile. This, it was maintained, was little, if any, above the average cost of running a three-seater motor car over roads in the same district as where the flights occurred.

A *B.E.2E.* machine had flown 6,370 miles; was in the air 98 hours, and had carried 296 passengers. This flight cost 41s. an hour, or 7½d. a mile.

A determined effort is being made to establish an extensive air service in Queensland. With aerial centres opened at Charleville in the south and Cloncurry in the north, and permanent landing grounds marked out at all intermediate towns and stations, it will go a long way towards opening up one of the most important air routes in Australia, connecting South Australia with the far north of Queensland and the Northern Territory.

An enterprising insurance agent has chartered an aeroplane to make a tour of the stations and settlements in central Queensland not served by railways. Previously the company had to transact most of its business in these regions by post. The agent and his companion will have to rely on their own resources in finding landing places, but they anticipate no difficulty owing to the extensive areas of open country over which they will travel.

The Australian Inland Mission Society has under consideration the establishment of a series of aerial routes from centres of population to outback areas. The idea is to make provision for the rapid transport of doctors and nurses to attend cases of sickness or accidents on the stations of the north or the sparsely populated regions of Central Australia.

The broad outlines of a plan, which the originators hope will develop into an extensive and useful organization, will shortly be submitted to the Federal Government.



PATENT

Unspillable Accumulators

STANDARD AEROPLANE PATTERN

Leaking Absolutely Impossible

Made in Sizes From 13 to 240 Ampere Hours
Arranged in Sets as Required

CELLS CAN BE DISCHARGED IN ANY POSITION

THE Chloride ELECTRICAL STORAGE COMPANY LIMITED

Works:

MANCHESTER,
ENGLAND.

Cables— "CHLORIDIC, Sydney"

Australasian Representative:

E. H. SHARPE,

Belmont Buildings, 15 Castlereagh St., SYDNEY.

Telephone: City 6563

WILLIAM ADAMS & CO. LTD.

ELECTRICAL DEPARTMENT

AGENTS IN N.S.W. AND QUEENSLAND FOR

BRITISH INSULATED & HELSBY CABLES LTD., ENGLAND

Insulated Wires and Cables. Dynamo Flexibles.
Insulators, etc. Instrument Wires. Switches. Fuses.

Selling Agents in N.S.W. and Queensland for METAL MANUFACTURES LTD.,
PORT KEMBLA

Bare Copper Wires and Cables. Bare Copper Rectangular Wires.
Copper Busbar. Copper Strip. Copper Rod.

Send us your enquiries for ANYTHING ELECTRICAL

WILLIAM ADAMS & CO., LTD.

OFFICE: 171 Clarence Street } SYDNEY. 'Phone: City 912-918⁰
SALES DEPT.: 337 Kent Street }

Howard Smith Chambers, Watt Street, NEWCASTLE. 'Phone: Newcastle 1171
Edward and Mary Streets, BRISBANE. " " " " " " 'Phone: 160

MOTORING

THE next interstate reliability touring contest will start from Brisbane on Tuesday, August 16, and finish in Sydney on Saturday, August 20. The route will be *via* Toowoomba, Warwick, Armidale, Muswellbrook and Mudgee. In order to meet the convenience of the New South Wales competitors who cannot spare more than a week for the contest, the starting day has, on this occasion, been fixed for Tuesday instead of Monday. It will now be possible to ship cars from Sydney on the Saturday so as to arrive in Brisbane on the Monday, in ample time to start on the long overland journey the next morning. It is intended to close the entries about the middle of July. The secretary of the Royal Automobile Club reminds competitors that as the week previous to the starting of the tour will be show week in Brisbane, it is advisable to arrange for hotel accommodation as early as possible.

Following are full details of the route:

First Day (140 miles): Brisbane to Ipswich (24), Grandchester (44), Laidley (52), Gatton (63), Helidon (74), Withcott Hotel (81), Toowoomba (87), Allora (124½), Warwick (140). Lunch at Withcott Hotel.

Second Day (198 miles): Dalveen (164), Stanthorpe (177), Wilson's Downfall (193), Boonoo Boonoo (210), Tenterfield (220), Bolivia (238), Deepwater (251), Dundee (261), Glen Innes (277), Glencoe (290), Guyra (317), Armidale (338). Lunch at Glen Innes.

Third Day (173 miles): Uralla (352½), Bendemeer (384½), Tamworth (410½), Warral (417½), Duri (421½), Currabubula (430), Werris Creek (439), Quipolly (445), Quirindi (450), Braefield (455), Willow Tree (461), Ardglenn (468), Murrurundi (473), Blandford (478), Wingen (485), Parkville (491), Scone (496), Aberdeen (504), Muswellbrook (511). Lunch at Quirindi.

Fourth Day (126 miles): Denman (522½), Gungahlin (539½), Merriwa (554½), Bow Creek (561), Cassilis (582½), Green Hills (596½), Ulan (608½), Budgee Budgee (627), Mudgee (633). Lunch at Dalkeith Station, Cassilis.

Fifth Day (169 miles): Mullamuddy (641), Cudgegong (656), Ilford (669), Capertee (685), Ben Bullen (691), Cullen Bullen (697), Lidsdale (704), Marangaroo (708), Old Bowenfels (714), Little Hartley (722½), Mount Victoria (726½), Springwood (756), Penrith (768), Prospect (782), Parramatta (787), Sydney (802). Lunch at Mt. Victoria.

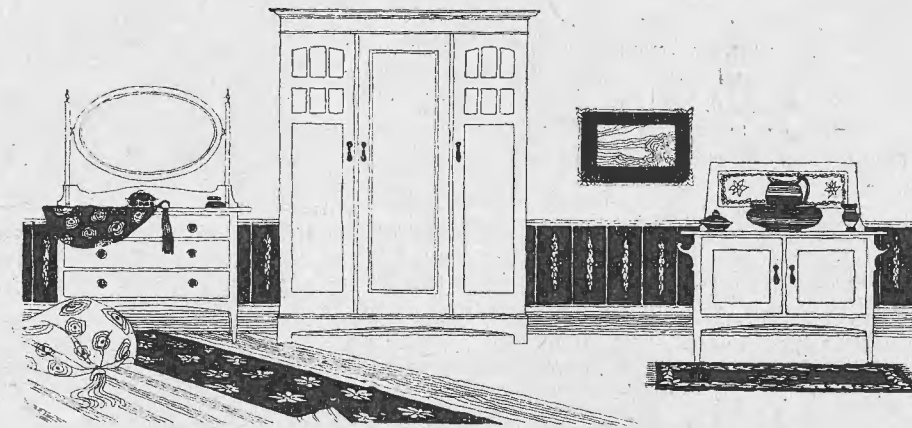
The contest will be under the joint control of the Roads and Tours Committee of the Royal Automobile Club of Australia and the Royal Automobile Club of Queensland (Brisbane).

Entries close on July 23, and members desirous of accompanying the contest as official observers are requested to notify the Secretary at once.

The Tramway Department is determined to prevent, as far as possible, the dangerous practice indulged in by boys who jump on and off tram cars while in motion. It is recognised that the practice is dangerous for the boys as well as nerve-racking to the drivers and conductors of trams, and motor drivers.

A suggestion has been thrown out that a most effective advertisement for motor lorries would be to run one through the principal city streets, fully laden with wool accompanied by an ordinary horse-drawn lorry similarly laden. The outstanding advantages of the motor propelled vehicle would then be apparent even to the most casual observer.

The attention of the world's leading motor car makers has been attracted by the *Straight Eight* motor car engine, a revival of which is now taking place owing to most of the contestants in the forthcoming French Grand Prix having adopted it. The engineer responsible for the revival is a Frenchman—M. Ettore Bugatti, who was working on the engine in Alsace when war broke out. The *Straight Eight* has recently been tried out successfully by the French Army laboratories, and following this test it was adopted by both the French and American Governments for aeroplane work.

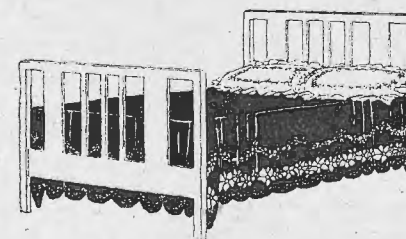


5ft. WARDROBE two-thirds hanging space, one-third shelves
3ft. 6in. DRESSING TABLE
3ft. CABINET WASHSTAND

£47/15/- *The Chartrelle
Bedroom Suite*

(Illustrated above) is one only of the many Suites showing in our fitted furniture rooms. Originally designed for service in a flat or moderate sized cottage, it has come into the place of great favour which its simple outlines, good materials and workmanship, and moderate price deserves.

Inspection, without which little idea of quality can be had, is strongly urged.



The BEDSTEAD illustrated and designed for the Suite can be supplied in double size for £5/5/- Without Bedding.

Pure Bedding, freshly made for each order, has always been a speciality of our house.

BEARD WATSON & CO. LTD.

361-363 George Street

Harold Parsons, one of the finest motor cycle riders Australia has ever produced, is to have his name perpetuated by a memorial, for the erection of which a movement is now on foot. The accident which resulted in Parson's death was caused by a stone being thrown at some straying horses. It is believed that when the accident happened he was travelling at a very high speed, as he was picked up fully forty-five yards from the point of the mishap.

It is claimed that Australia has fewer transport facilities than any other country. Owing to our strained financial resources little capital is available for railway extension, but it is interesting to learn that in New South Wales alone motor vehicles are carrying mails and passengers through railless territory a total distance of 11,000 miles. It would cost £153,637,000 to construct a similar length of railway. This huge capital expenditure is thus saved, and a safe and speedy means of transit provided for thousands of passengers and huge quantities of mail matter, by the use of mechanical road vehicles.

The protection of spare tyres from light, air, and moisture has been rendered much more simple of late by the use of a protective paint specially manufactured for this purpose. The paint is black, and an application considerably enhances the appearance of the tyre. It is easy to apply, dries quickly, and has no injurious effects such as would follow the use of ordinary paint.

The Motor Traders' Association has recommended all its members to, as far as possible, use Australian leather for body purposes. The local article is recognised as being superior to imported leathers for this class of work, and the request of the M.T.A. is certain to be largely acted upon.

Sir Howard Grubb is the inventor of the new device which, it is claimed, solves the problem of headlight glare. The device consists of two lenses which can be fitted to any lamp, and which, although eliminating the glare, enables the motorist to see clearly a distance of forty-five yards ahead. If the invention will do this it

will not only solve the glare problem effectively, but most economically. The lighting clause in the New South Wales Metropolitan Traffic Act, stipulates that lamps of any size and bulbs of any power may be used, but the lamps must be so arranged that no part of the main beam of light will rise higher than 3ft. 6in. from the road surface at a distance of twenty-five yards in front of the vehicle.

A leading American motor expert declares that hot water has a decidedly deteriorating effect on the varnished surface of an automobile body. Tepid water is ideal for cleaning purposes, although cold water may be used without harmful effects. An important point in finishing off the polishing job is to rub until the last trace of wet polish has been removed. If this is not done a coat of dust will soon collect on the moist surface.

Boon to Motorists.

The British Imperial Oil Co. has issued a new lithographed oil recommendation chart, which is bound to prove of immense value to motorists generally.

The chart shows at a glance the correct grades of oil to be used for the various makes of motor cars, trucks and cycles. Information of this nature is of inestimable value to motor owners and drivers, and it is needless to add that the information contained on this chart, which is of handsome appearance, will be largely availed of by motorists all over Australia.

Mr. A. J. Rowledge, who has joined Rolls-Royce Co., Ltd., under a long engagement, was for many years chief designer for the Wolseley Motor Company, and previously filled a similar position in the Napier Company for seven years. Mr. Rowledge is well known as an eminent designer, particularly in connection with aero engines.

The Stanley steam car, which has attracted attention of late, is shortly to be demonstrated in Australia. The company intends opening up here, and the first shipment of cars will be accompanied by an expert engineer from the factory and a thoroughly experienced demonstrator.

Motorists will be interested in the attempt, now being made in England to discover a process of colouring petrol in



Colo Tyres

Made in Australia

**The hard wearing qualities of
COLO TYRES**

**Testify to the high quality of their
construction. Ask your Garage**

The Colonial Rubber Co. Ltd.
5 and 7 Barrack Street, Sydney
MELBOURNE, BRISBANE, NEWCASTLE, ADELAIDE, PERTH and AUCKLAND

SWEDISH GENERAL ELECTRIC LTD.

LONDON AND SWEDEN

A.C. MOTORS
D.C. MOTORS
TRANSFORMERS

MOTORS.

Large stocks on hand and
arriving shortly, from 1
H.P. to 150 H.P.

TURBINES
GENERATORS
SWITCHGEAR

For EFFICIENCY, RELIABILITY and DURABILITY
Cannot be Beaten.

Sole Agents for
New South Wales: **Austral Electric Limited**

97 Clarence Street, Sydney.

Telegrams: "Expanse," Sydney.

Telephone: City 4255.

order to make the various grades easily distinguishable. If the attempt is successful, that is, if the colouring has no injurious effect upon the quality of the petrol, it will be welcomed by motorists generally.

An attempt was made in the House of Representatives recently to have the duty on single-seated motor bodies reduced from British preferential £30 each to British preferential £15, intermediate £20, general £25 each, and on double-seated bodies from British preferential £50, intermediate £54, general £60, to British preferential £25, intermediate £30, general £35. The attempt was unsuccessful.

At a general committee meeting of the Royal Automobile Club of Australia, on June 30, reports were received from officers

and various standing committees of the Club. The following new members were elected: Messrs. J. H. Bate, E. P. Bradley, F. R. Chesney, L. R. Davis, G. Dobell, J. D. Handley, P. W. King, John Magney, C. L. Malley, Clyde Malley, R. H. Malley, L. W. Marks, K. B. McEvoy, H. D. McLachlan, H. Pickles, E. G. Shaw, H. S. Wadley and R. C. Young.

A motor car outing to the South Coast was tendered to the Springboks by the South African Union Club, in co-operation with a number of members of the R.A. Club, on Sunday, June 26. Owing to rain having fallen the previous night the roads were not in the best state, but despite this the outing was thoroughly enjoyed, particularly by the visitors, who expressed themselves as being delighted with the beautiful scenery, the view from the top of Bulli Pass being especially admired.

Air Mail Service in the Philippines.

The Philippine Islands are soon to have a postal aerial service, according to recent reports from Manila. Regular lines will be maintained from Manila and Cebu and also from Manila to Zamboanga. Cebu is the premier city of the Visayas and Zamboanga of the southern part of the Philippines.

Five seaplanes have just been received by the Insular Government from the United States. The airplanes will be operated by Filipino aviators trained by the Philippine National Guard.

Girl Aviator Breaks Loop-the-loop Record.

Miss Laura Bromwell, 23, broke the world's loop-the-loop record at Mineola, N.Y. (U.S.A.), on May 15, when her airplane, starting at a height of 8,000 feet, performed 199 loops before landing. The flight took place at Curtiss field. Miss Bromwell wore the uniform of Lieutenant in the New York Aerial Police Depart-

ment. Last year she established a record of eighty-eight loops. Her latest flight consumed one hour and twenty minutes.

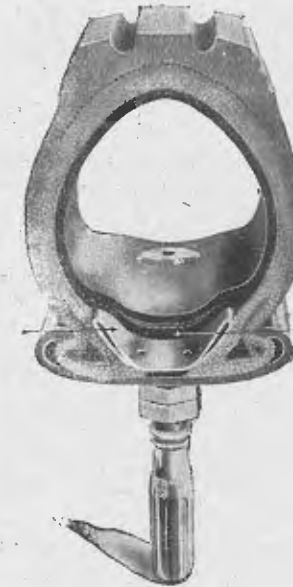
New Airship for Japan.

The Vickers-built airship recently completed for Japan has been deflated, and the whole structure taken down and packed for shipment to Japan, where the vessel will be reassembled for service in that country. She is of the sea-scout type. The airship R80 visited Barrow, from Howden, Yorkshire, in one of her cruises.

Studying the Pyramids from an Aeroplane.

Professor Breashed, of Chicago, has obtained air photographs disclosing remains of prehistoric cemeteries too faintly defined to be observed from the ground. These photographs are expected to be of great assistance in uncovering the ruins of this ancient world, now buried in the desert sands.

A Security Plate on each Tube

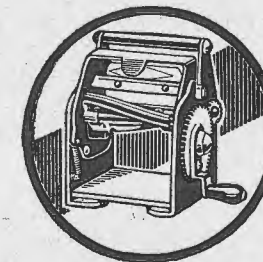


Every Perdriau heavy red motor tube is fitted with a security plate which grips the beads of the cover, holding them firmly in position.

PERDRIAU Motor Tubes

Note the extra thickness of the rubber where the tube touches the beads and security plate.

Perdriau Rubber Co. Ltd.
270 GEORGE STREET, SYDNEY
AND ALL STATES



POST FREE
DO IT NOW

Rotastrop

SHARPENS SAFETY RAZOR BLADES

Gives a Life of 600 Shaves to Every Blade
AND YOU DO IT YOURSELF WHEN AND WHERE YOU PLEASE

ECONOMY PROMPTS YOU TO SEND 35/-

S. SCOTT-YOUNG LTD., 76 Pitt St., Sydney
COMMERCE HOUSE, MELBOURNE

The Central Press

In the centre of Sydney for Service and Satisfaction in the production of
10 CENTRAL ST. Art & Commercial PRINTING. Telephone City 7559

JONES & PIKE Tel. 404 PET.
CABINET MANUFACTURERS
Specialties:
LETTER FILING, CARD CABINETS
AND GENERAL OFFICE FURNITURE
Macquarie Street, Leichhardt, Sydney

EDWARD WATERS & SONS
(Established 1859)
Patent and Trade Mark Attorneys
905 CULWILLA CHAMBERS,
67 CASTLEREAGH ST., SYDNEY
Tel. City 1187 (And at Melbourne)

WIRELESS INSTITUTE OF AUSTRALIA

NEW SOUTH WALES DIVISION

The Fifty-first General Meeting was held on Tuesday, June 14, at "Wireless House," the chair being occupied by Mr. H. A. Stowe.

After the reading and confirmation of Minutes the Hon. Secretary read the report of the Second Annual Meeting of the Queensland Division. This disclosed a satisfactory record of progress at which members present expressed their appreciation.

Mr. Stowe continued his lecture on Elementary Electricity, the subject covered being Dynamic Electricity.

A demonstration of instructional gear, arranged by courtesy of Amalgamated Wireless (Australasia), Ltd., which was set down as the main business of the evening, was then conducted by Mr. S. E. Tatham, whose explanations and descriptions of the various apparatus proved very interesting. It was possible, from the demonstration, to form a very accurate estimate of the quality of the work carried out in the Wireless School.

A very hearty vote of thanks was accorded Mr. Tatham at the conclusion of the meeting.

SOUTH AUSTRALIAN DIVISION

The Monthly General Meeting of the South Australian Division was held at Alfred Chambers, Currie Street, Adelaide, on Wednesday, June 1.

The Minutes of the previous meeting were read and confirmed. One application for membership was received and approved.

Mr. Austin, one of our Council members, who had some time ago approached the Secretary on the subject of flying pennants by members who have aerials, submitted a list of prices of different makes, explaining that he wished to see this idea carried into effect in this State. Now that several other Divisions have adopted it, it would enable members to know at a glance, when they saw an aerial, whether the owner was a member of the Wireless Institute. Members from other States would also know where they would receive a welcome.

After discussion it was decided to request members to fly the pennant, the design of which will be decided by the Council.

A resume of the work of the Council at its previous meeting was given by the Secretary, who informed members that the Council had agreed to the affiliation of the Wireless Institute of Australia with the Wireless Society of London, as requested by the New South Wales Division. The members were also informed that Mr. Maddock, a member of the Victorian Divisional Council, has been requested to act as a proxy delegate, representing this Division at a conference with the Post-

master-General, which is being arranged by the Victorian Division, with the object of obtaining a reduction of the license fee, and the issue of transmitting licenses.

The good wishes of Mr. Conry, late Hon. Secretary of the Victorian Division, who attended our Council meeting as a representative of that Division, for the purpose of arranging for a delegate, were conveyed to the members of this Division by the Secretary.

The action of the Council was adopted by the Meeting.

A very interesting lecture on the Electronic Valve was given by Mr. J. M. Honner, who briefly explained the electronic theory, the Edison theory, with the experiments of Edison. Mr. Honner then gave an account of the work of Fleming and his two electrode valve, working up to the present three electrode valve. The terms "space charge" and "saturation point" were explained, as were also the functions of the "grid condenser" and "grid leak." Mr. Honner also explained the difference between hard and soft valves, winding up his lecture with circuits for use with valves. The lecture was clearly illustrated by means of the blackboard. A hearty vote of thanks to the speaker was moved and by carried by acclamation.

At our next meeting Mr. Dunstone will lecture on Dalton's Atomic Theory, and at the August meeting Mr. Honner will continue his lecture on the Electronic Valve.

"Sea, Land & Air"

VOLUME No. 3

April, 1920—March, 1921

NOW READY

Price 16s.

Post Free

Binders and Index, Volume 3

6s. Post Free

Index Only - 1s. 6d. Post Free

Send all orders to—THE CIRCULATION MANAGER

"SEA, LAND & AIR"

97 CLARENCE STREET—SYDNEY

QUEENSLAND DIVISION

THE Second Annual Meeting of the Queensland Division of the Wireless Institute of Australia was held in the Institute Rooms, Edward Street, Brisbane, on Friday, April 29, at 8 p.m.

Present: W. M. Nelson, President; S. H. H. Smith, Vice-President; the Honorary Secretary, S. V. Colville, and a good attendance of members.

The Minutes of the last Annual Meeting were read and confirmed.

The Secretary delivered a report on the work of the Council for the past twelve months ended March, 1921, as follows:

The progress of the Institute has been fairly good and some very interesting and useful work has been accomplished. The main drawback to the rapid progress

June 25, 1920: An Amateur Receiving Set, by W. I. Monkhouse.

July 30, 1920: Crystal Rectifiers as Applied to Wireless Reception, by S. V. Colville.

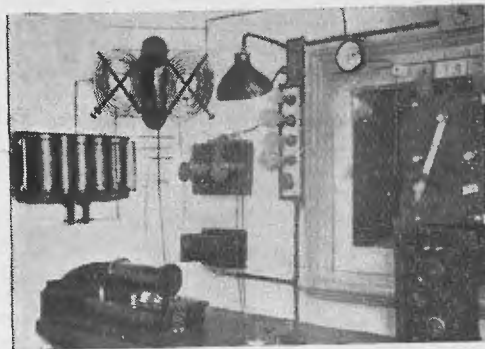
August 27, 1920: Electronic Theory as Applied to Valves, by S. V. Colville.

November 26, 1920: Electrical Oscillations, by E. C. Barton.

January 28, 1921: Wireless Waves and Wave Motion, by S. V. Colville.

March 25, 1921: Valves and their Application in Wireless Telegraphy and Telephony, by L. S. Lane.

Membership: At the end of last year the membership was, accepted members 38, but of whom only 17 became active and financial. The balance did not attend nor



Transmitting Instruments at Wireless Institute, Brisbane.

which promised early in the year was the lack of support by members in the matter of lectures and papers. Your Council has had to convert itself into a working committee for the purpose of installing the present apparatus that you see here. Our thanks are due to about a dozen members who came forward to assist in this connection. Although the number of lectures delivered and papers contributed was not very great, quite a large quantity of interesting matter has been dealt with by discussion at the ordinary meetings.

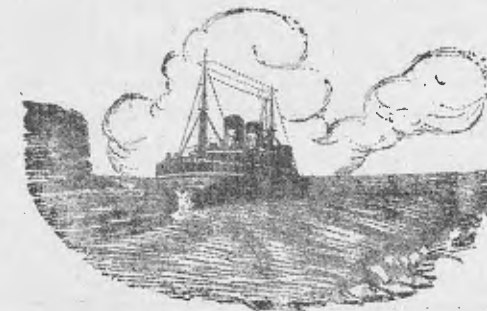
The following lectures and papers have been delivered before general meetings:

April 30, 1920: Electro-magnetic Induction, by W. I. Monkhouse.

May 28, 1920: Submarine Cable, by S. H. H. Smith.

did they respond to appeals for the fulfilment of their financial obligations. This year 21 new members were accepted, of whom 17 are active and financial, making a total active membership of 34. The Council desires to express its appreciation to the Department of Public Instruction for the free use granted us of the Lecture and Research Rooms during the past nine months, and to the New South Wales Division for assistance in various matters. Discussion on the report then followed, in which Mr. S. H. H. Smith expressed, on behalf of the Officers and Council, appreciation of the Department of Public Instruction for the excellent accommodation given the Institute in the Education Buildings. Mr. S. V. Colville also spoke in support of Mr. Smith in this connection and

The Magic Flight of Thought



There is nothing your friends on their ocean voyage will appreciate more than a Marconigram message of greeting from you

• • •

Hand in your message—Business, pleasure—at any Telegraph Office ashore, and it will be forwarded to the ship by the fastest service in the world

• • •

Rates to Australasian Coastal, Intercolonial and Canadian Mail Steamers—6d. per word

• • •

Amalgamated Wireless (Australasia) Limited

• Operating an Organised Radio Service •

requested permission, which was unanimously granted, to communicate the appreciation expressed at this meeting to the Department. It might be mentioned here that although the Institute was officially opened in March, 1919, suitable accommodation was only secured in July last (1920) when thanks to the courtesy of the Department of Public Instruction, rooms were granted us, free of rent, in this building. The report was adopted.

The Chairman then requested the Hon. Treasurer (S. V. Colville) to deliver the Annual Statement of Receipts and Expenditures, also Balance Sheet for the year ending March 31, 1921.

The statement showed a cash balance of 19s. 1d. for the year, there being no outstanding debts. The Treasurer was thanked for his careful handling of the



Receiving Instruments Installed at Wireless Institute, Brisbane.

small, though none the less important, funds of the Institute.

The election of officers resulted as follows:

Patron: Professor R. W. Hawken, B.A., B.E., M.I.C.E.

President: W. M. Nelson.

Hon. Member: R. A. Wearne, B.A.

Vice-Presidents: S. H. H. Smith, C. Chilton, L. S. Lane.

Hon. General Secretary and Treasurer: S. V. Colville.

Assistant Hon. Secretary: P. A. Wilson.

Librarian: W. Shepley.

Assistant Librarian: A. E. Dillon.

Council: A. L. Moore, E. Littler, H. McLean, W. Finney, G. Tucker, E. Gibson.

Research Committee: A. L. Moore, S. V. Colville, C. Chilton, L. S. Lane, P. Wolstenholme.

Hearty votes of thanks for their valuable assistance during the year were accorded the President W. M. Nelson, Vice-President S. H. H. Smith, the Hon. Secretary and Treasurer S. V. Colville, the Committee, and a number of members.

The business of the Meeting was concluded at 9.30 p.m., when, at the invitation of the President, the members visited the Research Rooms where a quantity of apparatus, in addition to the Institute sets, was on exhibition. Mr. A. L. Moore demonstrated to those present the receiving apparatus, whilst the Hon. Secretary explained the transmitting sets and other apparatus on view. The whole of the apparatus installed herein has been constructed by the Working Committee and members of this Institute during the past nine months. The greater part of the

work has been executed on ordinary meeting nights in the presence of the members, who have had an excellent opportunity of learning the "Art of Construction" of Wireless Apparatus. Many members who, on joining up with the Institute, did not even know the A B C of wireless, have since constructed complete receiving sets, giving good results.

The transmitting sets comprise (1) spark transmitter and (2) buzzer transmitter. The spark set is of the usual type, employing a six (6) inch spark coil working off 120 watts (10 amps.) charging a bank of condensers of the jar type, having a capacity of 0.01 m.f., which in turn, discharges across either a fixed or rotary gap of the usual design through the oscillation transformer primary, which is constructed of copper strip (cut from sheet) half

A. GONINAN & CO.

LIMITED

ENGINEERS and
IRONFOUNDERS

NEWCASTLE

NEW SOUTH WALES

have recently completed machining two 40-ton Steel Castings, the biggest job of its kind ever attempted in the Southern Hemisphere.

Specialists in Mining and Heavy Machinery of all kinds. Railway Waggon Builders. Contractors to N.S.W. Government and all important Coal Mines.

an inch wide and spaced half an inch apart on hardwood formers. The secondary of same is of two such inductances as the primary, having seven complete turns per unit and connected in series. The couplings of all units are variable, giving the necessary fine adjustment in tuning. The transmitted wave has a length of approximately 320 metres and the range of same is, up to the present, about 100 miles, with an aerial radiation of one ampere.

The Buzzer Set is of a Navy design and although some excellent distances were obtained in transmitting, the tuning, on short waves especially, was not all that could be desired owing to the fact that the condenser across the break had to be of large capacity in order to convert the sparking thereat, which was of an arcing nature, to an oscillatory one. Such a condenser would have a capacity of approximately 0.03 m.f., thereby increasing the wave length of that circuit to about 750 metres. The necessary loading to the aerial circuits in such a case was large, and greatly decreased the radiation with very little improvement in the tuning. Owing to the low voltage of such a set auro-transformation from closed to aerial circuits had to be employed and although a wave length of about 750 metres was used, considerable Q.R.M. was available on 600 metre receivers. The buzzer transmitter has, on this account, now fallen into disuse.

The receiving apparatus comprises both crystal and valve sets. Comment of the crystal set is unnecessary, except that the usual stations, ship and shore, within a radius of 1,500 miles are generally readable using galena crystal.

The valve set is of the panel type, employing both the ultraudion with L.F. Amplifier and regenerative circuits. Practically all the Australian stations are readable on 600 metres and several other stations on longer waves, including a number of American arc stations on wave lengths up to 20,000 metres are copied regularly. These arc stations are readable day and night and when conditions are favourable they are easily copied with a one-expanse valve receiver.

Three types of tuning units are employed, the first being one of the solenoid

type having slider adjustment for primary and tapped secondary designed for a maximum wave length of 1,000 metres. The second is of similar design, but larger, having both primary and secondary tapped and has a maximum range of 3,500 metres. The third comprises a set of three honeycomb coils, maximum range 12,000 metres without added capacity and with condenser in shunt about 20,000 metres. All these coils have been constructed by the members and give excellent results. The short wave unit tunes in practically all the Australasian stations, whilst on the long wave set American arc stations are copied both day and night.

The valves employed are of the "Tron" type, being "Expanse" Morehead and Jap. makes. A number of other types of valves have been tried by various members, including Osram, Ediswan, Marconi Q, Marconi V.T., Marconi V.24, Expanse, Japanese trons (three designs), Morehead, General Electric, and Telefunken. Of these at the present time the Expanse is accepted as a good all-round valve for either rectifying, amplifying or oscillating.

The aerial used in conjunction with the above-mentioned apparatus is of the old Navy type containing 1,400 feet, 16 gauge H.D. copper wire made up in four cages each of six wires. Two cages are 70 feet in length while the other two are 50 feet long. The construction is of the inverted "L" class; horizontal spread being 70 feet, down leads 50 feet, and lead into operating room 15 feet of two lengths of 7/19 aerial wire. The average height is 45 feet above the galvanised iron roof of the building. The natural wave length of this aerial is approximately 260 metres.

The long wave receiving set is only a recent addition to the station, and up to the present, only a few stations have been listened in for. The results obtained are very gratifying and will no doubt be greatly exceeded in the near future.

The Honorary Secretary will be pleased to receive enquiries from any experimenters, and to give information concerning the construction of the apparatus covered by this article, to any member of the Institute.

[Hon. Secretary's Address: S. V. Colville, Box 387, G.P.O., Brisbane, Queensland.—Ed.]

Commonwealth Bank of Australia

HEAD OFFICE

SYDNEY.

BRANCHES ARE OPEN FOR THE TRANSACTION OF

General Banking Business

Established 1912

In the principal Cities and Towns of Australia and Rabaul (New Britain), and London (2).

Banking and Exchange Business of every description transacted within the Commonwealth, United Kingdom, Canada, United States and abroad

Agents and Correspondents throughout the World

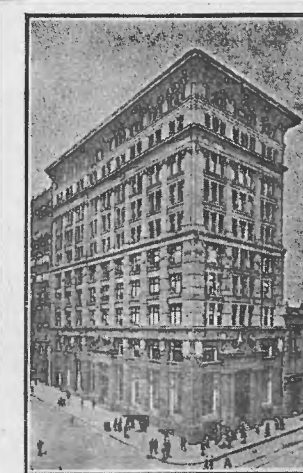
Savings Bank Department

At all Branches and Savings Bank Agencies at 3049 Post Offices in Australia, Papua, New Britain, Solomon Islands, and the Pacific.

Interest at the rate of 3½% up to £1000 and 3% on balance in excess of £1000 up to £1300, payable from 1st July, 1920.

1921

Sir DENISON MILLER, K.C.M.G., Governor



Head Office, Sydney.

READ AERONAUTICS

The Recognised British Authority on all matters concerning Aeronautics

and keep yourself well informed of the Mother Country's Progress in Aviation.

Fill in this Form and post To-day To "Aeronautics" Subscription Dept.

I enclose £1 10 4, for which sum please post "Aeronautics" regularly to me for one year:

Signed.....

Address.....

Date.....

BENN BROTHERS Ltd., PUBLISHERS
8 Bouverie Street, London, E.C.4, Eng.

INSURE with

The Liverpool and London
and Globe
Insurance Company Limited

Assets Exceed £17,400,000

LOWEST RATES

Fire - Accident - Marine

Head Office for Australasia:

62 Pitt Street, Sydney

C. DANVERS, Manager for Australasia
P. HEATH, Assistant Manager for Australasia
W. B. CLARKE, Local Mgr. for New South Wales

LIST OF WIRELESS OFFICERS ATTACHED TO VESSELS OF THE AUSTRALASIAN MERCANTILE MARINE

Revised to June 22, 1921.

Table with columns SHIP, OPERATOR, SHIP, OPERATOR. Lists various vessels and their wireless officers.

(Continued on next page.)

(Continued from last page.)

Table listing wireless officers for various vessels like Talawa, Talune, Tarawera, etc.

Amalgamated Wireless (A'sia) Operators Temporarily Attached to M.I.M.C. Co's Ships.

Table listing wireless officers for Rupara, Wattle, and New Guinea Expedition.

WIRELESS CALL LETTERS.

We have received the following additions and cancellations to the above list for June, 1921:

Table listing additions and cancellations of wireless call letters.

The following from a "popular" weekly is a gem of the gemmest gem, and we believe this sort of thing wins prizes. So it should! Here it is:

Planting Seeds from 'Planes.—An airman has invented an aerial grain sower. It is an aeroplane which will sow grain as it passes over a field, planting a row 36 feet wide at each passage.

A system of perforated metal tubes, laid parallel at short intervals, extends from front to back of the lower wings. Air pressure shoots the seeds from the tubes with sufficient force to bury it at the right depth in loose soil.

Flying at 40 miles an hour, 640 acres can be planted in six hours. To plant the same acreage in the ordinary way a farmer would have to work 22 1/2 10-hour days.

The cost of teams for such wholesale sowing, and of the wear and tear on thirty-eight drills, would be a very big item compared with the nine gallons of petrol an hour consumed by the aeroplane.

Phew! Next, please.

HUGHES & CO. CIVIL and NAVAL TAILORS. SPECIALISTS IN NAVAL AND Mercantile Marine Uniforms. All work executed on our premises BY EXPERTS. 70-72 Erskine Street, Sydney. Established 1882.

EXPANSE "B" VALVE Manufactured by Amalgamated Wireless (A'sia) Ltd. Low Filament consumption—Low plate potential—Two Filaments. PRICE 35/- GET ONE TO-DAY AND HEAR SIGNALS FROM EUROPE. AUSTRALECTRIC LIMITED - 97 Clarence St., Sydney. Telegrams: "Expans" Sydney Telephone: City 4255

NEW YORK TIMES RADIO CHAMPION

SECOND DISTRICT COUNCIL PRESENTS A SILVER CUP AS REWARD FOR BREAKING RECEIVING RECORD

The Second District Executive Radio Council at a dinner in the Hotel Pennsylvania last month acclaimed B. G. Seutter, operator of the *New York Times* Transatlantic Radio Receiving Station, champion of the world in having established a new record by receiving 48 $\frac{3}{5}$ words a minute with only two typographical errors. In recognition of his feat, Mr. Seutter was presented with a silver loving cup.

The presentation was a feature of the dinner which marked the close of the first convention of the Second District Amateur Radio Council. The presentation was made by J. O. Smith, Chairman of the Convention Committee, and toast-master for the evening.

"Mr. Seutter has succeeded in making copy with only two very slight errors at a rate of 48 $\frac{3}{5}$ words a minute, Continental Morse," he said. "In presenting you with this cup as a testimony of your ability as a radio operator, I congratulate you on behalf of the Second District Radio Council."

The cup is 14 inches high. It is inscribed: "World's Championship Speed Contest—Continental Code reception—awarded by the Executive Council Second District Radio Convention and Exhibition—won by B. G. Seutter, March 18, 1921. Reception speed 48 $\frac{3}{5}$ words per minute."

Mr. Seutter won his title in a contest with more than sixty operators. At a speed of thirty words a minute about one-third of the contestants were eliminated, and finally only Mr. Seutter and N. Bernstein, of the Western Union, were left. So close and so well matched were the pair that it took three trials before the judges declared Mr. Seutter the winner. The toast-master described the contest. Mr. Bernstein, he said, got up to 48 words a minute but lost because of the errors.

The former record, 47 words a minute, with three errors, was held by Tony Gerhart, of San Francisco, an employee of the Radio Corporation of America.

The dinner brought together wireless men who had often picked up each other's signals but most of whom had never met. The speakers were H. C. Gawler, of the Commercial Department of the Radio Corporation of America; Mr. F. H. Schnell, traffic manager of the American Radio League; Dr. Alfred N. Goldsmith, of City College; J. Andrew White, Editor of *Wireless Age*; H. P. Maxim, Arthur Batchellor, Lieutenant-Commander D. C. Patterson, of the Naval Communication Service; K. B. Warner, Editor of *Q.S.T.*, and P. F. Godley.

PRINTING is a silent salesman.
Our service will make a strong appeal to discerning business men who know the value of high-grade printing as a business getter. Phone, City 1870
29 CUNNINGHAM STREET, SYDNEY

PHONE CITY 1870



SHEPHERD & NEWMAN

COMPLETE PRINTING SERVICE

TYPOGRAPHIC ARTISTS
COMMERCIAL COLOR AND
HALF TONE PRINTERS.

HAVE YOU GOT ONE ?

THE VEST POCKET

DICTIONARY OF TECHNICAL TERMS

Used in Wireless Work—By HAROLD WARD

Is a handy little companion which no WIRELESS AMATEUR or OPERATOR should be without

CONTAINS OVER 14,000 DEFINITIONS

PRICE 4/- NET.

Postage 3d. Extra

THE WIRELESS PRESS

97 CLARENCE STREET, SYDNEY

432 Chancery Lane, Melbourne

Australasia Chambers, Wellington, N.Z.

BACON & CO. LTD.
Artists and Process Engravers
31a PITT STREET
Phone City 4837.

BATSON & CO. LTD. PRINTERS, SYDNEY

BATSON & CO. LTD.
ART AND COMMERCIAL PRINTERS,
Bookbinders and Account Book Makers.
Phone 8420. 99 CLARENCE ST., SYDNEY

BATSON & CO. LTD. PRINTERS, SYDNEY

S. O. S.
Sure Of Signals

WITH EXPANSE WIRELESS APPARATUS AND ACCESSORIES

	£	s.	d.		£	s.	d.
BUZZERS, Nickelplated	0	5	6	MARCONI SHORT RANGE SET..	50	0	0
BUZZERS (Silent for testing) ..	0	12	6	INTERVALVE TRANSFORMERS	3	0	0
½-in. SPARK COILS	4	0	0	BALDWIN'S MICA DIAPHRAGM			
ROTARY OIL CONDENSERS	2	15	0	PHONES	7	7	0
CONDENSER PLATES, Aluminium				BROWN'S 8,000 ohms ADJUST-			
fixed and movable doz.	0	1	0	ABLE PHONES	6	0	0
PICTURE SIGNALLERS' SETS ..	1	5	0	BROWNLEY'S TELEPHONES,			
2 SLIDE TUNING COILS	1	14	0	2,000 ohms	5	0	0
POST OFFICE TELEGRAPH				EXPANSE "B" VALVES	1	15	0
KEYS	3	3	0	ADAPTOR for Ditto	0	12	6
SOUNDER & KEY COMBINED..	0	15	0	DEAD-END SWITCHES	1	12	6
LEYDEN JARS, MARCONI TYPE	1	0	0				

AustralElectric Ltd.

WIRELESS HOUSE, 97 CLARENCE STREET — SYDNEY.

Phone: City 4254.

QUESTIONS AND ANSWERS

Under this heading the Editor will be pleased to reply to any questions within the scope of the magazine, provided the following conditions are observed:—

1. Questions to be numbered and written on one side of paper only, and not to exceed four in number.
2. All questions must be accompanied by the full name and address of sender, which is for reference and not for publication. Answers will be published under any initials or nom-de-plume selected by the questioner.

G.R.R. (Melbourne).—Question (1): Is there a wireless training school in Melbourne?
 Answer (1): Yes. The Marconi School of Wireless situate at 422-24 Little Collins Street. Their advertisement appears on another page of this issue.

Question (2): Is there any fixed age to begin training? I will be 17 at the end of June.

Answer (2): There is no fixed age, although 17 is just about the right time to commence training as you cannot be issued with a Certificate of Proficiency until you are 18 years old. You should therefore commence immediately in order to be thoroughly conversant with the subject when you are eligible to receive your certificate.

J.S.W. (Armidale).—Question: Where can I obtain wood suitable for making model aeroplanes?

Answer: We suggest you write to the Australian Aircraft & Engineering Co., Ltd., "Union House," George Street, Sydney. They may be able to supply your requirements or advise you where obtainable.

No. 29 (Narrabri).—Question (1): What is the capacity of a four wire T aerial, 160 feet long,

leading in wires 56 feet long, spacing between wires approximately 3 feet, and height of 47 feet? Gauge of wire 18 hard drawn copper.

Answer (1): Probably between .0008 and .001 microfarad, but impossible to say accurately as so much depends on surroundings, trees, buildings, etc.

Question (2): What is the inductance of a coil of the following dimensions: Length 10 in., diameter 3 in., wound full with No. 22 D.C.C. wire to 16 turns to inch?

Answer (2): Approximately 500 microhenries. Note: 16 turns to 1 in. is very wide spacing.

Question (3): What is the capacity of a tubular condenser of the following dimensions: Diameter of sliding cylinder 1 1/8 in., diameter of fixed portion 1 1/8 in., length of overlap 2 1/2 in., dielectric waxed paper?

Answer (3): Approximately .00008 microfarad.

Question (4): What wave length will a set as per diagram supplied tune?

Answer (4): If used as plain aerial circuit maximum wave length about 1,100 metres. If used as coupled circuit (auto-transformer) maximum wave length of secondary 370 metres.

SOME THINGS NO MOTORIST CAN UNDERSTAND

Why one invariably biffs into a stone wall, or another car, just when one's insurance policy has lapsed? and

Why, having parted with guineas in exchange for a portentous-looking piece of parchment which indemnifies us from all liability, one consistently pursues the bumpy, but blameless, path whereon accidents are unknown?

Why one should sustain four punctures in rapid succession when the spare wheel has been left at the vulcaniser's?

Why someone doesn't devise a "Cape cart" hood beneath which it is possible to sit without being reminded of the pier-head during a gale from the sou'-west?

Why makers continue to bring out "new and improved" models when (on their own showing) last year's was "the acme of perfection," "the last word in automobile engineering," and so forth?

Why his car never emulates the miraculous hill-climbing feats (said to have been performed by the demonstrators)?—*Autocar.*

"SEA, LAND and AIR"

THE AUSTRALIAN NATIONAL MONTHLY

— OF —

TOPICAL INTEREST

Edited by S. E. TATHAM.

CONTENTS

(All Rights Reserved)

	Page.		Page.
Topics of the Month	319	Russia	350
Conquest of the Air	320	Launching of the <i>Echuca</i>	354
Limitation of Armaments	321	Shipping Intelligence	355
The New Immigration Movement	322	The Late Harry Hawker	359
Landing Grounds for Airships of Vital Importance in Preventing Accidents	325	Stevenson in the South Seas	361
The Headland Where the Sea Dashes Up	326	The Motor World	365
Wireless for Physicians	328	Points to Watch in Motoring	368
The Australian Aborigine—A Child of Nature	329	Aviation in Australia	369
Keep the Old Flag Flying	332	India's Hundred Aeroplanes	371
Motor Trucks in Transportation	333	Aviation in Parliament	372
Australia's Plague	338	"The Nail"	374
American Air Insurance	339	Naval News	377
Some Interesting Phenomena in Every-day Physics	340	Boy Scouts Reviewed	378
How the <i>Atua</i> was Saved	348	Practical Testing for the Wireless Experimenter	380
		Wireless Time Signals at Sydney Observatory	388
		List of Wireless Officers	392
		Wireless Institute of Australia	394

The Editor will be pleased to receive, for consideration, contributions on Aviation, Wireless, the Navy, Mercantile Marine or other subjects within the scope of *Sea, Land and Air*. All MSS., photographs, drawings, etc., submitted must bear the sender's name on back and be accompanied by postage stamps for return if unsuitable. Although every care will be taken of all contributions received, no responsibility is accepted.

All business communications should be addressed to

THE MANAGER, THE WIRELESS PRESS, 97 CLARENCE STREET, SYDNEY.

All Editorial communications should be addressed to THE EDITOR, *Sea, Land and Air*, 97 CLARENCE STREET, SYDNEY.

Sole European Agents: THE WIRELESS PRESS, LTD., 12 AND 13 HENRIETTA STREET, LONDON, W.C. 2.

Sole Agents for United States of America: WIRELESS PRESS INC., 233 BROADWAY, NEW YORK. Singapore: KELLY & WALSH.