

"SEA, LAND and AIR"

THE AUSTRALIAN NATIONAL MONTHLY

— OF —

TOPICAL INTEREST

Edited by S. E. TATHAM.

CONTENTS

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	PAGE.		PAGE.
Topics of the Month:		New Zealand Affairs	352
The Needs of Society	323	One Thousand Miles by Car.	354
New State Movement	324	The Woman's Corner	357
What Australia Offers the Tourist	325	You Can't Beat Fate	360
In the Wilds of Inland Papua	328	Aviation in Australia	365
Late Admiral Dumaresq	332	Night Flying in N.S.W.	366
Personal	333	Shipping Intelligence	370
Buffalo Hunting in Northern Terri- tory	335	The Motor World	372
The Wonders of Wairakei	338	Junior Mechanics' Section	385
Voyaging Along the Coast	343	Wireless Institute of Australia	392
Wild Animal Farm	347	Wireless Notes	394
A Link with the Past	350	Wireless Experiments	398

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SEA LAND AND AIR

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TOPICS OF THE MONTH

THE NEEDS OF SOCIETY

IT is an open question as to whether social reformers in Australia, or, for that matter, in any part of the world, receive full public recognition for their unselfish efforts to uplift society. This may be partly due to the fact that from time to time individuals are detected masquerading under the guise of social reformers whose real object is to achieve some far less worthy end. The natural consequence is that the public mind, which is more often swayed by sentiment rather than by reason, is apt to include in the same category all who profess a desire to see human nature remodelled and society placed on a higher and safer footing through the medium of improved social conditions. This is to be regretted, for it implies two things. First, that the great bulk of the people are indifferent as to the conditions of life which prevail generally, and, secondly, it means the curtailment, and perhaps abandonment, of the efforts of many workers who would otherwise perform useful service. The second phase is accounted for by the fact that in the face of popular opinion it takes something of a hero to undertake the task of uplifting society. Such work offers no direct or material reward, and the only recompense social workers have to look forward to is the knowledge that through their efforts the world is a little better place to live in, and many individuals are enjoying both morally and materially a better outlook on life.

Few people will deny that there is ample room for improved social conditions

in Australia. That our standard of life may be far above that of many other countries is not so much a matter for congratulation as a warning, that in years to come we may descend to their level unless we take care to keep our house in order. Experience teaches that as countries grow older their social conditions gradually become worse, and the prevalence of crime in Australia should serve as a warning that a like fate may be ours in a few years unless we do something to inculcate a higher standard of morality in the rising generation.

The ideal state of society would be one in which mankind would do right because it scorned to do wrong, where human life would be held sacred because every unit of society would have ambition and scope to climb to higher things. Unfortunately we find that when face to face with modern conditions of life such an ideal may be counted as visionary, but this knowledge should not deter us from striving to bring about a better state of society.

Punishment has its useful place in life, and has unquestionably done good service in deterring would-be evil-doers from following a career of crime. But punishment in itself is not sufficient, and a community which is prepared to sit down until some brutal crime occurs and then engage in a spectacular "man hunt" will find its code of morality going from bad to worse. Prevention is better than cure, and the proper course to pursue is to take hold of the human wreckage in which criminality has its setting and seek to uplift it. A crime

of the slums does not arouse the same degree of public indignation as one committed in a more refined environment, but both are grievous acts against society, and the latter is probably the offspring of the former. There is urgent need then for strong, courageous action to wipe out the plague spots of society which disfigure

Australian life. They are not numerous fortunately, but they soon will be if unchecked, and the time to take the matter in hand is now. It is everybody's business, and if the public mind is awakened to a consciousness of its responsibility in the matter it can, with proper backing from the authorities, accomplish much good.

NEW STATE MOVEMENT

THE New State Convention at Albury adduced many reasons why the various Governments in Australia should make an impartial investigation into the all-too-apparent growing unpopularity of country life. Few of our parliamentarians will deny that the country districts of most of the States have shown a marked falling-off in recent years, both in population and productivity, and with this knowledge at hand the obvious course is to prescribe a remedy. That is what members of Parliament are for. It should not be necessary for the people of any particular portion of the Commonwealth to have to rise up and demand a new State as a remedy for alleged inattention to their many needs. What Australia wants is men who can think ahead of public opinion, and at the same time possess the courage to expound their views. At the present time members of Parliament generally are apt to view the cry for the creation of new States as something in the nature of a vote of censure on them for their inactivity in formulating a really constructive policy for country development. If such is the case it probably explains why the majority of politicians show such hesitancy in supporting the present agitation. The public generally are inclined to view the proposal favourably, and when the average man is brought face to face with facts and figures indicating the serious condition of stagnation which exists in the country he at once affirms that "something must be done."

A perusal of the arguments in support of the new State movement show that the scale of expenditure as between city and country is hopelessly ill-balanced. One statement declares that up to 1913 New South Wales had borrowed £44,000,000, out of which £29,000,000 had been spent in and around Sydney. Another alleges that 85 out of every 100 immigrants who come to N.S.W. settle in Sydney. A contrast is then made between Australia and the United States of America, which has an area of 900 square miles less than we have, but, so far from having only six governments, possesses no less than 48.

Coming nearer home, the opposition which was raised to the secession of Victoria from New South Wales is quoted, an opposition which revealed itself in a majority of twenty-nine votes to seven against the proposal when the matter came before the New South Wales Council, sitting in Sydney. Fortunately the right of appeal to the Imperial Parliament was available, and that body granted the request. The outcome of it was that in ten years the population of Victoria increased from 77,000 to over 300,000.

Points like these carry a weighty significance for present-day legislators and the public. History has a habit of repeating itself, and there appears to be good grounds for believing that, so far from having too many governments, Australia has too few—of the right kind.

An illustrated special article, dealing in a popular manner with many phases of the great solar eclipse which is to take place on September 21, will appear in our next issue. Every man, woman and child needs to be well informed regarding the significance of this great event, and the article in "Sea, Land & Air" will tell them all they want to know.

WHAT AUSTRALIA OFFERS THE TOURIST

THE BEAUTY SPOTS OF THE MOTHER STATE

INITIATING A GREAT NATIONAL MOVEMENT

By J. S. CORMACK

(Director N.S.W. Government Tourist Bureau).

The following article is the first of a series designed to educate the people of Australia and, incidentally, our kinsfolk overseas, as to the wonderful beauty and fertility of this sunny land. Other States will be dealt with in turn.—Ed.

THE time when Australians believed they had to go outside their own country to enjoy the delights of spending a holiday amidst scenes of beauty and in a health-giving atmosphere has almost passed away. And not a day too soon! It is undeniable that a certain glamour attaches to the thought of spending a holiday overseas—a glamour which grows greater at the knowledge that one is thus counted as more fortunate than the majority of his fellow men. But this feeling no longer stirs the imagination like it did a few years ago, and gradually men and women are realizing that their own sunny land holds practically all the beauty of scenery and healthfulness of atmosphere which they could hope to encompass in a year's wandering abroad.

By every method in its power the Government Tourist Bureau is endeavouring to induce all in search of health and holiday first to exhaust the possibilities existing in their own homeland before going further afield. Whilst not denying the scenic wonders in other lands, it is claimed that no other country in the world has greater charm and attraction for the tourist or provides better opportunity for pleasurable and diversified holiday than New South Wales.

The Snowfields of New South Wales.

Kosciusko, Australia's highest mountain, 7,328 feet, is situated among the Snowy Ranges in the south-eastern portion of the State. Through the summer great snow-mantles hang around its broad slopes, whilst winter finds the entire district heavily snow-covered and ice-bound. Sixteen miles from the summit of this grand peak, 5000 feet above sea level and 50 miles from the nearest railway, is situated Australia's premier holiday resort—Hotel Kosciusko—16 hours from Sydney by rail and speedy motor. A hotel renowned alike for its unique situation, exceptional comfort and unrivalled cuisine—a rendezvous in winter for the devotees of snow sports and alpine carnivals, where enthusiasts may indulge in the varied delights of skiing, tobogganing, skating, sledging, together with the attendant indoor social festivities.

Summer brings its flowers and birds, its bubbling streams and

mild, bracing air. In summer Kosciusko becomes the home for those who prefer golf, tennis, shooting, trout fishing, riding or swimming in these milder latitudes to the hot and murky air of the warmer districts.

The Limestone Caverns of N.S.W.

Though many of these limestone caves exist, both in the old world and America,



Mr. J. S. Cormack.

—Sydney Riley Photo.

perhaps in no country do they occur so frequently as in Australia. In New South Wales alone there are twenty-six series which have been inspected and covered by Governmental reservation. As yet only five systems—Jenolan, Yarrangobilly, Wombeyan, Wellington and Abercrombie—are open for public inspection. The world may have larger caves than these, such as the Mammoth Caves of Kentucky, but the caves systems of New South Wales are unrivalled for the profusion, variety and delicate beauty of their formations.

Jenolan Caves.

Jenolan Caves are acknowledged as the finest and most magnificent limestone cavern system in the world; a marvellous series of eleven caves, revealing fantastic draperies, shawls, glistening stalactites and stalagmites in prodigal profusion and surpassing loveliness—all fashioned by Dame Nature during the ages through the constant percolation of tiny drops of water through the limestone strata. The Caves are connected with Sydney by speedy train and motor, and are distant but seven hours from the metropolis.

This wonderful masterpiece of nature is situated thirty-six miles beyond the Blue Mountains, in the heart of virgin country, and encompassed by some of the most romantically beautiful scenery the State affords.

Yarrangobilly Caves.

The chief characteristics of the formations at Yarrangobilly are the wondrous stalagmites, with domes and spires resembling the splendours of the best types of Indian architecture. These caves occur in the wild Talbingo Ranges, near the southern border of New South Wales, forty-seven miles from the railhead of Tumut, and are reached either by a magnificent round tour from Cooma, embracing the major portion of the rugged spurs of the Great Dividing Range, or across the wild Talbingo and Cumberland ranges from Tumut.

Abercrombie Caves.

Abercrombie Caves are situated twenty six miles from Newbridge, a railway town 168 miles west of Sydney, and are noted for the wonderful grand archway, 700 feet long, 200 feet wide, and 60 feet high, one of the greatest of its kind in the world.

Wellington Caves.

Wellington Caves are five miles from Wellington, an important centre on the great western railway, 257 miles from Sydney. Though limited in extent, they hold beautiful formations. The caves have considerable scientific interest from the fact that the fossil remains of the mammoth marsupials of antiquity have been found there.

Wombeyan Caves.

Wombeyan Caves lie in the wilds of the Southern Highlands, and are noted for the wonderful brilliancy of colouring and their unique basins. In this district also are the haunts of the lyre bird and the fast-disappearing platypus, both of which are strictly preserved.

The Blue Mountains.

Close to the metropolis, and accessible by a first-class service of speedy trains, are the ranges of the Blue Mountains, which form the mighty eastern wall upholding the central tablelands of the New South Wales plateau system. These mountains are famed far and wide for their scenes of rugged majesty, and for the peculiarly exhilarating and health-giving qualities of the air of their upland forests. It is these attractions which have made the many excellently-equipped tourist resorts in the Blue Mountain districts such universal favourites, not only in New South Wales, but also in the other States, and with visitors from other lands. In summer, when the moist warmth of the coastal regions or the drier heat of the central plains make a change to a cooler climate the most welcome method of spending the holiday season, the mountains afford an ideal resort for achieving this end; there is no over-violent contrast of temperature to be feared—none of the danger that might be incurred by rushing from warm summer weather into regions of snow and glacier—but the air is delightfully cool and bracing, and the scenery is far-famed for its majesty and grandeur. In winter the really bitter days are few and far between, and this season of the year is becoming increasingly a favourite with those who prefer to make their sojourn in the heights before the regular tourist season has opened. The scenery is magnificent, and is yet strangely different from that made

up of snowy peaks and glacier torrents which one is so apt to associate with the name of mountain. The Blue Mountains are a portion of the Great Dividing Range, and by railway are 100 miles across. Here are to be found sixteen famous holiday centres within three hours of Sydney, all adequately equipped and organized, situated amidst majestic scenery of gorge and waterfall, and in a region of exhilarating air.

The Lakes District.

Lying along the sea coast, between Sydney and Newcastle is a chain of lagoons, known as the Northern Lakes. These provide a veritable paradise for the sportsman, yachtsman, fisherman and botanist. Tourists could spend at least a month exploring these lakes and the intervening beaches. The bush, a dense jungle of truly tropical nature, in the vicinity of Kincumber, Narara, Ourimbah and Wyong, which lie along the northern railway line, between the Hawkesbury and Newcastle, is the haunt of innumerable native birds, whilst the lakes swarm with water fowl and fish. The best known of the lakes are Tuggerah and Macquarie. Lake Macquarie is a magnificent sheet of water, and its shoreline has a greater extent than that of Sydney Harbour.

To the north of Newcastle, and within a few miles of it, lies another extensive chain of rivers and lakes, whose extraordinary beauty is at present known to comparatively few. The broad sheet of Port Stephens, with the chains of lakes stretching northward to Forster, constitute a water maze of great compass and exquisite beauty. No other district has better attractions for an extended holiday or affords such a grand change of habit, air and scene.

The North Coast.

Lying between the Hunter River Valley and the northern border is a vast stretch of rich, fertile country, intersected by magnificent rivers. The North Coast offers an ideal winter resort, since between April and November the weather in the northern rivers is comfortably warm. The districts present a wealth of wonderful scenery and ideal holiday centres.

The district is responsible for two of the State's most potent sources of wealth—the dairying and timber industries. It

is unquestionably the most fertile tract of country in the continent, and within the last few years its progress and development have been phenomenal.

The Southern Highlands.

A veritable treasure-ground of scenic attractions, possessing ideal climate, together with adequate tourist facilities.

That portion of the tableland including the towns of Mittagong, Bowral, Burradoo, Bong Bong and Moss Vale is one of the most frequented and fashionable health resorts in the State. The roads in the district are ideal, thus allowing easy access to the many pleasant ferny glades, babbling cascades and murmuring waterfalls, which grace the district's beauty spots.

South Coast.

This district is known as Beautiful Illawarra, the Garden of the South.

Connected by train with the metropolis, it affords a fine holiday and recreation ground for Sydney residents. Glorious panoramas of sea, mountain and forest, of distant ranges and blue, mist-shrouded valleys, of blue ocean and golden strand, await the visitor. The entire district is studded with ideal seaside holiday retreats, combining scenic attraction and accessibility.

National Parks.

Within twenty miles to the north and south of Sydney lie the two great national forest reserves of Kuring-gai Chase and the National Park, which have an area of 35,000 and 36,300 acres respectively. Here nature is still free; the forest stands untouched by the axe, the enchanting fern-clad dells in the hollow of the hills are yet unspoiled. In the springtime the whole district is a mass of wild flowers.

The great national and commercial advantage of a regular flow of tourists to the State can no longer be denied. It, therefore, behoves every man in his own interests, as well as the interests of the State, to exert a definite, positive influence, not only in inducing people from other States and overseas to visit the Mother State, but in moulding sentiment throughout the length and breadth of our fair land to "See Australia First" and talk Australia all the time.

IN THE WILDS OF INLAND PAPUA

RUBBING SHOULDERS WITH MAN-EATING SAVAGES

A COUNTRY OF RUGGED GRANDEUR

By H. L. DOWNING

ALTHOUGH the British public has heard much more about Papua and the recently-acquired German New Guinea possessions than other equally remote parts of our Empire, the knowledge appears to be only superficial and indefinite. It is not at all uncommon even in Australia, where people are but a few days' sail from this great island of mystery, to find many who are even now hazy as to its name. They know that geographically it is situated somewhere on the roof of Australia, and that next to the continent itself New Guinea is the largest island in the world. In some minds, however, a belief exists that Papua is only a swanky name for British New Guinea.

Not many people know that this great island is one of the few remaining countries where cannibalism is still practised amongst the inland tribes, and where sorcery has such a grip upon the natives that even where they are under Government control death is seldom believed to come to them by natural means.

The country itself is full of interest to the tourist and explorer. It is almost impossible to exaggerate the beauty and variety of the scenery, the rugged, thickly-wooded mountain peaks, the deep, silent gorges, and the swiftly-flowing streams. Bird and animal life is not as numerous as one would expect, but the variety is in many instances distinctive, and differs in most cases from those found in any other parts of the world. There are no man-eating tigers, lions, or birds of prey, and even monkeys are conspicuous by their absence.

It was the knowledge that in this great unknown country lay a wealth of interesting subjects for the student of primitive life and the explorer thirsting for a knowledge of strange lands that induced the writer to accompany a party on a recent exploration trip to Papua. The white

members of our party numbered four. They were Messrs. B. Boyce, M. M. Taylor (American journalist, who represented an important Chicago weekly), R. Humphries (a Papuan magistrate), belonging to the West Central Division), and myself (the photographer and first aid man). We had with us as escort twelve Papuan police, well trained in bushcraft and the handling of natives, and one hundred and twenty carrier boys. Our inland expedition was to commence from Yule Island, an important coastal outstation, sixty miles west from Papua's capital, Port Moresby, and about four miles from the mainland. The planned route was a northerly course inland to the German border, encompassing Mount Yule (10,400 feet), and then to make a circuitous south-easterly course back to the coast, linking up some new territory with previous patrols. The trip, according to the supply of provisions, was to take six weeks, and cover about two hundred miles of swampy and difficult mountainous country.

The Journey Begins.

It was about 4 a.m. when a blast from the *Morinda* announced that we were approaching Yule Island, the starting point of our journey. It was neither daylight nor dark, and our boat was steaming slowly through a break in the long line of white-capped reefs towards a dark mass ahead. The sea was like glass, and a silence, which somehow we all wanted to observe and keep, reigned over all. The mountains in the far distance were majestic and rugged, and their delicate bluey-grey tints suggested that in their confines were hidden many queer and mysterious things. Against this massive and imposing background of grey lay the airiest of fleecy white clouds and rising mists, which overhung the foothills and swamps of Mekeo. The foreground was composed of a sandy



Typical Scenes in Inland Papua.

(1) Two members of the party wading the Akaifoa River. (2) Making a crossing in canoes. (3) Native carriers in the swampy grass country of Mekeo. (4) Men's Club House, Mekeo District.

white palm-studded shore, which bounded a calm silver-green sea, on whose bosom lazily drifted half-a-dozen large and picturesque native canoes. Marvelling at this beautiful and fascinating aspect of nature, I understood why men will not only sacrifice the pleasures and comforts of civilisation, but risk the dangers of the trail in order to obtain at intervals like this that wonderful expanding feeling which plays upon every chord of the emotions. In Papua this is the patrol officer's only reward.

Immediately on landing we commenced preparations for our journey. Each native was issued with a blanket, and either a tomahawk or scrub knife. The following morning we set out upon our long trek. Large but frail native outrigger canoes transported us across the bay, and some fifteen miles up the beautiful, but treacherous, Ethel River. Difficulties cropped up early, for we frequently had to get out of the canoes and literally carry them over the sand banks. This, in view of the fact that the mangrove swamps near the sea were infested with crocodiles, made us very cautious. As we progressed the river improved. Stately niva, sago and other beautiful palms and vines lined the banks on both sides, and at times provided some protection against the sun's scorching rays.

At the quaint but large village of Boto, on the banks of the river, we decided to send the canoes back and proceed on foot. Our inclination to partake of a meal before proceeding further was frustrated by the millions of deadly mosquitoes which attacked us within a few minutes of our landing. They were so thick as to resemble a filmy mist hanging over the muddy pools. Rest was impossible. We tried to put away a hasty meal by munching and keeping on the move, but gave up and "beat it" out of the district with a forced march at double quick time.

For several days our course lay through flat country, which was covered with long jungle grass and thick undergrowth. There was but little protection from the burning rays of the sun, and we were not sorry to reach the higher levels, which were partly forest-clad.

For the first week we were in comparatively safe country, controlled by the Government and missionaries. The district of Mekeo through which we passed was a thickly populated one. The villages were numerous, and averaged about thirty huts, each of which contained between ten and twenty persons. These huts, built up about five feet from the ground, were constructed of split bamboo, laced together with lawyer vine, and thatched with pandanas leaves.

They were arranged in an orderly manner in a single line of oval shape, facing a sort of cleared parade ground. At one end or in some prominent position stood the "Dobu," or men's club house, a kind of Town Hall for men only, bigger and of different construction to the other houses. Surrounding each village are tall, healthy cocoanut palms, which give the whole a picturesque setting, and enable travellers to pick out the living centres from some distance away.

As we increased our distance from the coast the trail became much harder, for we were approaching the lower slopes of the great Main Range, which runs through the heart of Papua and New Guinea generally. At a place called Orro-Ro Petana it became necessary to negotiate a rapidly flowing river. The experience of making that crossing was an exciting one, and might have been disastrous but for the skill with which the boys handled their frail-looking craft.

Several days later we reached Maipa, which is the farthest point in that part of Papua where Government influence extends.

Entering Danger Zone.

Upon leaving this friendly village it became necessary to take greater precautions to protect ourselves and our carriers. Our police guard was strengthened both in front and rear, and a couple placed about the centre of the line to give the alarm if either end became molested by armed savages. We had only left Maipa two days when an incident happened which added greatly to our confidence in the Papuan police boy, and increased our respect for his bush training. Whilst moving forward along the banks of a raging river, which we were endeavouring to cross, the party got split into two sections, and the rear half became temporarily lost in the very thick forest and undergrowth through which we were cutting our way. Knowing that they would eventually find our track and come up with us, we pushed on in search of a place to cross. When we reached the other side we decided to prepare a meal and wait for the others to come up. Whilst waiting a terrific tropical mountain downpour came upon us, and in a few minutes the river, which was narrow, became a raging torrent, and rose about eight feet. The rear was thus cut off, and we became a little anxious about them.

Whilst we were wondering what ought to be done we heard vigorous chopping commence some little distance away near the water's edge. Three of the police had slipped away, and were busy upon a forest giant, with the object of felling it across the river, and so getting a party and provisions over. It was a laborious job, but after nearly three hours' hard work the tree crashed with a deafening noise among the smaller ones lining the opposite bank. It fell exactly where planned, and stuck firmly. The noise of the crashing trees gave Humphries and his boys the direction, and they were not long in working their way over the fallen tree to where we had pitched camp. The rain continued, and we turned in that night in an uncomfortably wet bed. All were dead tired, but it was not intended that we should get to sleep for some time, for a couple of wild pigs came around and commenced to snort and nose about for what they might find. A few nights previously Taylor had had the top of one of his boots chewed, and found it about twenty yards away from his stretcher. We had no wish to have this happen again, so after discharging a revolver shot in the direction of the noise to scare them off we looked around to make sure our boots were not near the edge of the fly. Whilst flashing his torch in the blackness Taylor caught sight of something moving up one of the legs of his camp stretcher. He thought it was a snake, and, remaining still, gave the alarm. Humphries and myself cautiously got out of bed, and discovered the intruder to be a big blue centipede—by far the largest I have ever seen.

Our trail lay for several days up the Aikafoa, a wide, swift, but shallow, mountain course, with its bottom covered with round flint boulders. Frequently for hours at a time it was necessary to wade against the current; a very fatiguing business. In places it may have been dangerous but for the crystal clearness of the water, which enabled us to see where we were stepping. Several of the boys were upset in the water with their loads owing to a false step, and the rushing torrent washing them off their feet. Beyond a few bruises and a rough handling they recovered themselves before much damage was done by gripping some friendly boulder or branch.

At this time we were well up with some of the lower ranges, and daily our altitude

was increasing. The trail became still more difficult and tedious, and most of it now had to be cut by the police with axes and scrub knives. Regularly every afternoon from about 3 o'clock it would cloud over and rain, and the further we progressed towards the higher mountains the more severe and frequent these storms became. We were now in practically unknown country, which offered everything in the way of difficulty. The dampness made these regions a veritable home for leeches, which were everywhere in millions. Our discomforts had already reached what we believed to be the limit, but the leeches and scrub itch, which was also attacking our legs and

timid of our approach, for we were much stronger numerically than they. Seeing that we had no sinister intentions, however, they became quite friendly, and we then had some difficulty in avoiding their greasy embraces. Whenever possible the men, from the chief down, would sidle up to one of us and try to touch some part of our body or hold our hands, believing that by doing so they would obtain some of our strength. The womenfolk were very shy, although, at the instigation of the men, they went out to their gardens and brought in gifts of sugarcane, yams, sweet potatoes and Taro. These we reciprocated with gifts of beads and salt. Salt with them is



Portion of a cannibal village, showing the tent flies of the exploring party. The altitude at this point is 7,500 feet above sea level.

bodies, far exceeded all other unpleasant and annoying conditions. A few hours on the track, and there would scarcely be a carrier or policeman whose feet were not covered in blood from leech bites.

Amongst the Cannibals.

The first wild cannibal village we came across was one of about seventy inhabitants, called Kapoli poli. It was situated upon the crest of a high hill, commanding a fine view of the surrounding country, and rendering it quite safe from surprise attack. The savages here were at first very

a delicacy, and a craving. It is eagerly sought after, and in places we were able to obtain more than a quarter of potatoes for a tablespoonful of salt.

Our altitude was now about 5,000 feet, and the nights were becoming decidedly cool. The carriers, who were all coastal boys, had a superstitious dread of the mountains, as well as a horror of the cold. Our arrival in these regions and among tribes they knew nothing whatever about made them uneasy, and their threatening manner alarmed us not a little. Every evening as soon as it became dark the boys

would huddle together in their shelters and set up a monotonous and most melancholy dirge. This usually lasted until the early hours of the morning, when they would go to sleep from sheer exhaustion. They believed that in the ranges they were now approaching dwelt the evil spirits which gave their own village sorcerers their power. Many of the boys who up till now had behaved in a most exemplary manner became arrant cowards, and their actions proved that their fears were deeply rooted. A climax was reached when a violent tropical storm, which for thunder and lightning I have ever seen equalled, enveloped the whole party. It was a combination of a pyrotechnic display and a bombardment, and reminded me of certain air raid experiences in France. This was too much for the boys, and the following morning the men went on strike. A situation arose which was only overcome by tact and a knowledge of the Papuan and his ways.

From now on for several days we were either plunging into deep gorges and ravines, or ascending to the summit of some mountain slope, over which our course lay. The country was extremely wild and rough, and for miles at a stretch progress was only accomplished by constant use of axes and scrub knives. The probabilities of an accident to some member of our party were painful to contemplate, for getting an injured man back to the coast would have been a slow process, taking many weeks and the untiring energies of at least half-a-dozen men. These risks constitute part of the day's work of a Papuan magistrate and patrol officer. They are only incidental to his other duties, but, combined with the weeks of loneliness and isolation, are enough in themselves to supply the acid test of a staunch and stout-hearted man. Several years ago a patrol officer, with many big patrols and much valuable exploration work to his credit, met with an accident, which, though not very serious at first, almost proved fatal in the end. Whilst conducting a patrol in search of several evilly-disposed "Pourri Pourri" men in one of the mountain inland districts he made a false step through a mass of moss-covered roots and badly grazed one of his shins. He immediately turned back, but by the time he had reached the nearest outstation his leg was in a very bad state of infection, and he was in a high fever.

He was taken to Port Moresby, where he lay in hospital several months.

Just a few miles ahead of us lay the border of late German New Guinea. We were now gazing on Mount Yule from the north, and our altitude must have been at least 7,000 feet. Quaifa, our most northerly objective, was reached without mishap, and here, on these mountain ranges 8,000 feet in the air, we enjoyed our second complete day's spell.

(To be continued.)

LATE ADMIRAL DUMARESQ



Vice-Admiral Dumaresq, late head of the Australian Navy, died at Manila on July 22, after a two-months' illness. His appointment terminated in April of this year, and he was returning to England via Manila when pneumonia gripped him.

The late Admiral was born at Glen Innes, N.S.W., in 1873, and entered the Royal Navy at the age of 13. He made rapid strides upward, and filled several important naval posts during the late war. In March, 1919, he was appointed as one of the two executive heads of the Australian Navy. In 1921 he was appointed Naval A.D. to the King. Admiral Dumaresq, who was only 49, was widely popular in naval circles, and his untimely death is generally deplored.

PERSONAL

HIS EXCELLENCY THE STATE GOVERNOR, SIR WALTER DAVIDSON, was obliged to suspend his activities temporarily a few weeks ago owing to an attack of laryngitis. His Excellency is a keen worker on behalf of the numerous bodies with which he is connected, and general regret was expressed when his indisposition became known.

* * *

The Federal Treasurer, Mr. S. M. Bruce, on a recent visit to Sydney delivered a highly interesting lecture on the League of Nations. Mr. Bruce was senior Australian delegate at the meeting of the League, and is, therefore, well qualified to speak of its work.

* * *

Sir Arthur Rickard, President of the Millions Club, has made good progress towards complete recovery, after being laid up for some considerable time.

* * *

A recent distinguished visitor to Sydney was Sir William Lathlain, Mayor of Perth (W.A.). During his visit Sir William attended quite a number of functions, amongst them being a dinner tendered by the Millions Club.

* * *

The high esteem in which Flying-Officer H. Johnson, M.S.M., of the Royal Australian Air Force, is held by his comrades was testified recently when, on the occasion of severing his connection with the R.A.A.F. he was made the recipient of a handsome presentation and overwhelmed with good wishes.

Flying-Officer Johnson has been attached to the R.A.A.F. since its inception, and was stationed at Point Cook, Victoria, where he carried out the duties of wireless officer and officer commanding Headquarters Section of No. 1 Aircraft Depot.

Recently he decided to transfer his activities to another sphere, and the occasion was marked by a farewell dinner, arranged by members of the R.A.A.F. at Point Cook. The function was presided over by the

commanding officer, Squadron-Leader Murray-Jones, M.C., D.F.C., who proposed the toast of "Our Guest" in a highly eulogistic speech, in the course of which he traced Mr. Johnson's career from the time of joining the First Australian Flying Corps at Point Cook in February, 1916, and his subsequent meritorious work abroad during the great war.

On behalf of his fellow members the Chairman then presented Mr. Johnson



Flying-Officer H. Johnson, M.S.M.

with a handsome and appropriate gift in the shape of a clock mounted in the boss of a German two-bladed propeller. The presentation, explained the chairman, was a small token of the high esteem in which their guest was held. It was impossible to convey their true feelings, either in words or deeds, but he felt sure Mr. Johnson would understand, and appreciate how they felt towards him.

The toast was supported by Flying-Officer A. W. Murphy, D.F.C., A.F.C., who voiced the regret felt by all members of No. 1 Station at losing their capable and genial comrade. Flying-Officer Murphy,

it might be mentioned, possesses the distinction of wearing the "Order of the Nada," a decoration presented by the King of the Hedjaz (Arabians who assisted the A.I.F. in Palestine and Syria). There are only eleven of these orders in the world, and three of them are worn by members of the R.A.A.F., the other two possessing the coveted distinction being Wing-Commander Williams, O.B.E., D.S.O., and Flying-Officer F. C. Hawley, D.F.C.

A number of other members present supported the toast, the tenor of their speeches being a cordial appreciation of the guest's many sterling qualities.

Flying-Officer Johnson, in responding, thanked all present for the handsome presentation they had made him, and the many generous sentiments which had been expressed. He had many regrets at leaving the R.A.A.F., and particularly at parting with the many good friends he had made there. They had had both good

and bad times together, and he could assure them that the R.A.A.F. and its *personnel* would always hold a pleasant place in his memory.

At the conclusion of the speech-making a very enjoyable evening was entered upon, and amongst the many amusing items served up for the enjoyment of all present was an exhibition of scientific wrestling between Flying-Officer Fryer-Smith and Flight-Lieut. Coates, M.C.

The work on the propeller which formed the setting for the clock presented to Flying-Officer Johnson was all carried out at Point Cook by members of the R.A.A.F., under the supervision of Pilot-Officer J. D. Jarman. It displays excellent workmanship on the part of all concerned, and the *personnel* of the wood working section of R.A.A.F. have every reason to be proud of their craftsmanship.

Mr. Johnson has rejoined the staff of Amalgamated Wireless (A'asia), Ltd., as a sub-inspector.



St. Kilda Road, Melbourne.

BUFFALO HUNTING IN NORTHERN TERRITORY

EXCITING EXPERIENCES IN THE WILD FAR NORTH

BEAST THAT CHARGED A CINEMA CAMERA

By FRANCIS BIRTLES

The Northern Territory buffalo was originally imported from the Straits Settlements, herds being brought over into Port Essington. Eighty years ago this pioneer Territory settlement was abandoned, and the flocks of buffalo, Brahmin and zebu cattle, Timor ponies and horses, were sent adrift. To-day they roam the low-lying coastal districts in scores of thousands, feeding on the fertile plains, and taking shelter in the impenetrable mangrove and tidal swamps.

Thousands Slaughtered.

Buffalo hunters slaughter thousands every season, shooting mostly the old bulls for their hides. As far as possible they do not kill the young cows or calves. The meat is excellent, being of the same flavour as beef, and is far more tender. The tongues are a delicacy, but, like other game foods, are not appreciated by the hunters, who get too much of a good thing.

A stranger should be careful in eating this meat, or, in fact, any game or meats which may have been chased or worked to extreme exhaustion. Owing to a toxin poison which permeates the blood of the tired quarry, it is inadvisable to eat of the flesh until it is at least twenty-four hours old. The unwitting consumer may otherwise speedily suffer from some of those serious ailments so common in the Northern Territory.

A Tropical Botanical Garden.

Here follow some extracts from my diary whilst engaged in buffalo hunting in the course of a recent trip:

About midday I stretched my mosquito net beneath the cool shade of a blood-

wood tree. Nearby was a deep, clear lagoon, its placid surface covered with white and red water lilies. The surroundings were like a tropical botanic garden. Big shady trees were scattered about, and the green couch grass gave the appearance of a well-kept lawn.

Buffaloes and Crocodiles.

After boiling the quart pot and satisfying inner requirements I felt drowsy, and crawled under the net and fell off to sleep. A low growl from my dog aroused me. Down towards the waters came a cow buffalo and two calves, and a few minutes later another cow and a big bull came playfully trotting down. On the edge of the pool they drank deeply, and then swam out into deep water, quietly eating the tops of the water lilies and softly squawking to each other.

A hundred yards away the heads of two crocodiles greedily and vainly looked at this supply of succulent beef, but did not dare to attack. Suddenly the old bull started nervously to blow. The small herd started to heave and splash, and raced towards the opposite shore. The wind had changed, and they had caught a sniff of my camp. Clattering away over a rocky bar, the beasts trotted into the gloomy depths of a ti-tree forest.

Feast of Pigeons.

Evening, and a glorious sunset. Purple, orange and gold reflected on the mirror-like waters. Flock pigeons now came in a rapid flight to their drinking spots. Alighting, and then nervously running to the water's edge, they drank. They made an excellent target for my rifle, and after

I had satisfied my voracious appetite the dog feasted on the bones and feathers.

A few mosquitoes drove me into the shelter of my cheesecloth net. Dimly against the waters I could see numerous buffalo drinking. About midnight the dog again woke me. From all around the camp I could hear squawks, croaks, sniffs and noises like several children's trumpets being blown. The huge, inquisitive buffalo cannot make a loud noise; a squawk or croak is all the sound which they can utter. The trumpet noises are made by the young ones.

A Buffalo Charge.

The dog was lying low and quivering with excitement. With a rattling crash and stamping of hoofs the brutes charged. Hastily grabbing my always-loaded rifle from beneath my bunk, I frantically dived out from under my net. I could faintly see them. They were charging—away from me, and towards the skyline. Cursing them for the scare, I turned in again and slept, only to be awakened again by another mob. It may have been the same lot, but they came from another direction.

I fired off the rifle several times to try and frighten them, but their nocturnal racketing kept me from falling asleep. Slipping on my shoes and taking my automatic rifle, I crawled up behind a tree. Amongst a clump of bushes I could hear a bull squawking. I determined to shake him up a bit, and loosed off the contents of the rifle magazine, firing the shots in rapid succession. Out he came, full-tilt toward me. Rushing to a rough barked tree, I hastily scrambled up, leaving pieces of bark off my bare shins and legs to decorate the landscape.

A Vicious Bull.

My four-legged friend rushed in, and the bull came up to the foot of the tree. My rifle was down below somewhere. Yelling at the dog to go back to camp was of no avail. Over the top of a ridge the moon came up to lighten the serio-comic tragedy. Some calves came up to investigate. The dog grabbed one by the tail, and was carried away into a cane-grass swamp. Meanwhile the bull followed up and struck vicious blows with his fore paws at any obstacle in his path. As he turned away I noticed that half of his flank had been

torn away. Probably when he was a calf a shark or a crocodile had attacked him.

Morning, and I was once more moving. Buffaloes would arise from shady trees or swampy pools and gaze wonderingly at my car. Out on a big plain hundreds were peacefully feeding. Two young bulls attracted my attention, and these I started to stalk with my cinematograph camera. One bull was amusing himself by driving his long, powerful horns into a big ant bed and then, with an upward swing would throw the earth all over his back.

Attack on an Anthill.

Nearby a cheeky brolga was anxiously waiting to get a chance at all the wriggling tucker. The buffalo, sighting this big bird, charged. Result, a dead even sprint for fifty yards, and then the brolga flew, the buffalo just passing underneath. Another buffalo was now resting on the other side of the antbed, his back against the hummock. The playful buffalo now turned, and struck the anthill full-tilt. Down came a tumbling mass of earth on to the other sleeping beast. A ton of charging meat, and half a ton of earth struck the resting animal. Scared, they both raced away. This alarmed the whole mob. From the outlying regions they gathered together in a tremendous congregation, and then, with thunderous sounds of hoofs, tore into a big bamboo thicket. Out of this jungle wonderful sounds arose. A steady booming as of surf on a coral reef, and spitting sounds as of shrapnel burst every few seconds. In a couple of minutes peace and restfulness reigned once more.

The Blackfellow's Prey.

In the far distance I could hear shots fired in rapid succession. Over the skyline came a buffalo, and half a mile behind was an aboriginal steadily running and pausing now and then to take a hurried shot. I ran over, accompanied by my dog, and headed the beast off. He was limping, being wounded in the foreleg. The poor brute pulled up short, pathetically squawking and croaking, but all the same he was a very dangerous customer, and I was armed only with my rifle.

Warily I approached and took a photographic snapshot. The panting blackfellow now came up and dropped the animal. A

few minutes later some packhorses arrived, the hide was peeled off and hoisted on to the back of one of the skinny nags. The warmth and weight of a fresh hide had a marked tendency to keep the horses in poor condition.

Charging the Cinema Camera.

A mob of buffaloes were quietly grazing out on the grassy plain. Suddenly there dashed out from a belt of pandanus palms a white horse, spurred on by an energetic rider. The buffalo herd broke into sections, wheeled, circled into mass formation, and at a 25-miles-per-hour lumbering gallop came tearing down past where I stood with my cinema machine.

The old bull leader, sighting me, turned out from the mob, and charged from a distance of 200 yards. The mounted horseman, too, charged down, endeavouring to turn the brute. The well-trained horse ranged up alongside. The rider, holding his short-barrelled rifle in one hand, pointed the weapon at the beast, and pulled the trigger. The cartridge failed to explode, and the big beast came straight on.

It was a chance of a lifetime to get a picture. Ready to jump, I kept the handle turning. Twenty feet away the bull turned slightly, and, with swinging lowered head between his wide forelegs, missed the camera by three yards. This old fellow had all the hair scalded off him, owing to the habit of camping in mud wallows and thence sleeping out in the hot sun. He left behind him a trail of dust, buffalo flies and a powerful odour of stale musk. He got clean away.

A Bicycle Journey.

A few days later I left the car and set out per bike on a special route. A howling head wind, accompanied by blinding dust, made the going very slow—about one and a half miles per hour. I walked and pushed the heavily-loaded cycle through soft ground, the wheels jamming every minute down to the hubs in deep cracks in the ground. All day I battled, and missed two waters en route, as it was impossible to see more than a few yards away. My water supply was very low, and I only had a quart pot full left for the night. The cyclometer showed that I had only travelled

fifteen miles during the day, and I had at least ten miles to go to the next water. In the morning the wind was worse than ever. I started away without breakfast, and went along three miles; then made a pannikin of tea. One more pannikinful I kept in reserve, as I knew that I had very little chance of seeing water on account of the heavy clouds of dust. All surface waters here were very scarce, but it was plentiful ten feet down, and could be located near creek beds. Owing to the befogged atmosphere, I could not see further than a hundred yards.

Thirst.

I was rapidly knocking up. Getting under the lee of a sheltering bush, I laid down, only in a few minutes to move away again. The place was swarming with black ants. My dog still kept going all right, although he looked a pathetic object, with his face khaki-coloured from the dust and his eyes watering. Towards evening I camped. Peculiar ringing sounds were in my ears, I was aching all over, and my fingers seemed paralysed. I woke up later on; my tongue would not move, and I kept on dreaming of rain. I was in George Street, Sydney, on a wet day. It was all very real. Owing to peculiar mirages just before sunrise, the country for miles around arose in distinct detail, showing scenes far beyond the normal horizon. Away ahead a belt of timber showed in intermittent patches. Here I knew that water could be found. I travelled along in a semi-conscious kind of way, but tried at the same time to think of other things beyond that of drinking cool waters. Some time toward midday I could see the trees in reality, but the dust wind had started to blow, and I hurried to get there before the air was too dense. I hunted along numerous branches of the dry creek bed, and at last the dog came up to me wagging his tail and soaking wet. I could almost have kicked him in my envy and weariness, but second thoughts made me ashamed and grateful.

A few hundred yards out on the plains I found a muddy billabong, into which I jumped and drank of the dirty but beautifully cool liquid. In the shade of a tree I camped, and ate some salt beef and damper.

THE WONDERS OF WAIRAKEI

NEW ZEALAND'S LITTLE-KNOWN BEAUTY SPOT

By WYNFRITH REVELL.

WITHIN the last few weeks the residents of Taupo have been considerably alarmed by thermal disturbances at Wairakei, the most wonderful portion of the Hot Lakes district of New Zealand. Almost continuously now for some time earthquakes have shaken the district. Although the 'quakes for the greater part have not been particularly severe, there have been one or two large ones, and the activity has been sufficiently continuous and out of the ordinary to alarm the residents of the district and to set the scientists a-twitter over the possibility of a big "blow-up."

Wairakei is almost unknown to the average New Zealander and Australian. For years the more widely-known Rotorua district has overshadowed Wairakei. Yet, of the two, Wairakei is the more interesting. It has all the wonders of Rotorua, and many more besides. The hot bathing springs possess all the healing qualities of those at Rotorua, but they have not yet been developed to the limit of their possibilities. At Rotorua, of course, the bath-houses, etc., are on a bigger and grander scale, having been artificially developed to a far greater extent

than is the case with the Wairakei pools. However, the charges at Wairakei are not nearly as high as at Rotorua, and, while at the latter resort they are prohibitive, at the former they are extremely reasonable.

The journey to Wairakei is extremely interesting after the main trunk express has been left at Waimarino early in the

morning. Stepping off the slow, jolting train, one breathes the clear mountain air with a feeling of relief. The Waimarino Plains lie at the foot of and around the volcanic mountains Ruapehu, Ngarahoe and Tongariro. Ruapehu is never free from snow, and is no longer active; Ngarahoe is still smouldering, and is at times quite active, while Tongariro may best be described as a crumbling mass of volcanic ruins. The region is known as the New Zealand National Park, and was



The Champagne Cauldron, Wairakei Valley.

presented to the Dominion by Te Heu Heu Tukino, a former Maori chief.

From Waimarino the tourist is taken over forty-four miles of soft pumice road in a motor car to the shores of Lake Taupo. Ruapehu is left behind, and Ngarahoe and Tongariro, dark and frowning, with lava-torn fissures and furrows on

their sides, are reached. As we pass under them we can see, high up on the slopes of desolate Tongariro, clouds of steam rising from the famous hot springs of Kititahe. The mountains are left behind, Lake Rotorira is passed, and the car is speeding across the open plains within sound of the rushing Waikato River. A few more minutes and the straggling village of Tokaanu is reached, and the car draws up in front of the quaint little inn and accommodation house. This is the mecca of fishermen the world over, and every tourist is expected to catch trout, eat trout, talk trout, photograph trout, and lie about trout. If you do none of these things you are quickly regarded as "peculiar."

feet into the air every fourteen minutes.

Just off the main road, before the village is reached, several pools, apparently bottomless, are grouped together; the water, a cruel, greenish blue, eternally bubbling in the centre. Into one of these a Maori wife jumped to her death, after being ill-used by her husband. Yet her daughter did not object to posing for me alongside the very pool into which her mother took the fatal plunge.

The next stage on the journey to Wairakei is to cross the lake in the small steam packet which daily plies between Tokaanu and Taupo, and then join the motor car towards Wairakei. En route a detour is made to visit the famous Huka Falls. A mile to the east of the village of Taupo the



A Maori girl sitting beside a bottomless pool, into which her mother had plunged to her death.

Tokaanu gives the tourist his first glimpse of the Hot Lakes district, and prepares him for the greater wonders of Wairakei. The village is on the thin earth crust which runs from east to west, and a few yards up the street are endless hot pools and popping miniature hot mud vents. From amid the ti-tree scrub in the still evening air rise many clouds of steam, and even the little river has a film of steam floating upon its surface. Beside many of the houses are to be seen the cooking holes, wood-lined, and with wooden covers, where cook the sweet potatoes or kumaras and the fragrant fresh trout. In a larger and cooler pool will be found a whole native family sitting up to their shoulders, laughing and splashing. One pool there is which sends a gusher twenty

car branches off the main road into a glade of pines, and, leaving the car, the tourist crosses a suspension bridge, traversing the outlet of the Waikato River from Lake Taupo. Here the lake finds an outlet through narrow walls of solid rock, hurtling through the awesome gorge at a rate of untold gallons per second. Walking down the right bank of the river for a short distance, one stands on the rocky shore of the pool into which the water descends. It is not so much the height of the falls as the tremendous volume and force coming from so narrow a channel that attracts the eye of the onlooker. The gorge above the falls is barely a chain in width, and the falls themselves are little more than three hundred yards from the lake. The bottle-green water, of remarkable

clearness, hurtles down seventy feet; yet, within a few yards of the raging pool at the foot of the falls, a big river flows placidly away. The Aratiatia rapids are also well worth a visit. Within half a mile the river drops three hundred feet over these rapids in wild, boiling turmoil.

Wairakei is Reached.

Sir James Hector has described Wairakei as having the thinnest crust of earth in the world, and the thermal disturbances at present going on there would seem to prove this. The hot pools in the hotel grounds are larger and more picturesque than those seen by the tourist at Tokaanu, but they give no idea of the vast volcanic forces at work just under the earth's crust at every point of the compass. Three of the largest of these pools have been artificially enlarged into bathing places. The Fairy Pool, the smaller of the three, is usually regarded as the ladies' pool; at the Honeymoon Pool mixed bathing is the rule, while larger than both of these is the Swimming Bath. None of these pools have been developed to anything like their possibilities, but if Wairakei still exists when the thermal activity has subsided there is little doubt that they will be developed on a par with the Rotorua pools. The water in them is extremely clear, and a perfect blue in colour.

The first of the many wonders which the tourist is shown is the Blow-Hole, or, as it is known to the Maoris, Karapiti. This geyser is always visited at night. Dinner over, the visitors are taken by car a couple of miles along the road. Here the cars are left behind, and the tourists strike out across the desolate country of the Taupo Plains. At once a distant and continuous roar is borne fitfully on the evening breeze to the ears of the sightseers. Shepherded by the guide, in single file, they descend into a pocket of the plains until the party suddenly comes on a vast jet of steam, like a pillar of cloud being forced from beneath their feet.

From a hole in the ground, about three feet in circumference, a jet of superheated steam rises from the bowels of the earth at an estimated pressure of 180 pounds to the square inch. The force at work is rarely appreciated until the guide lights a sack saturated with kerosene, and

throws it into the mouth of the vent. At once the sack is fanned into a sheet of flame, and the sparks from the blazing sacking fly upwards to a height of between 150 and 200 feet. The steam becomes illuminated almost to a flame, and condensed by the action of the fire, is a sight that baffles description. A kerosene tin is thrown into the mouth of the vent, and the next minute is hurtling high into the air.

The Wairakei Valley.

A mile and a half to the south of Geyser House lies the wonderful Wairakei Valley. A bridle path, one and a-quarter miles across pumice land, leads to the valley. The first impression gleaned of the valley is of a long and narrow depression, from which ascend at every few yards clouds of steam. It might not inaptly be dubbed "The Valley of a Hundred Smokes." The short and sharp descent into the valley is in a region where one step off the beaten track would mean the possible loss of a foot, if nothing more serious.

The Maoris called this valley Wairakei—"Sparkling Water"—and the name is an apt one. The waters of the geysers sparkle and bubble like some rare old champagne vintage. It is the wonderland of geysers, and in the narrow confines of the valley are geysers and volcanic wonders of all descriptions.

The first to attract the attention of the sightseer is the Champagne Cauldron. The guide shepherds his charge down a few steps to the bottom of the valley—a descent that must be made with care, for a mis-step means certain death. The tourist is now standing on the brink of the boiling cauldron. The boiling waters appear in various shades of blue and green, and jets of steam bubble up here and there, throwing up gushers of water into the air. Every few minutes the water becomes more disturbed, and then suddenly a great gusher shoots high into the air. The scene is magnificent and awe-inspiring.

Further up the valley is the Wairakei Geyser, at one time a magnificent display, but now its action is less and more uncertain as the result of an earthquake some four years ago. At almost regular inter-

vals of ten minutes a great volume of water is hurled skywards to a height of thirty feet. Before the earthquake just referred to took place the gusher was driven to a height of ninety feet, and must have been a wonderful sight.

Close beside this geyser is the Waitangi Pool, the water in which is kept at a temperature of 225 degrees Fahr. by the action of the super-heated gases from below. A lighted piece of paper will ignite these gases as they break through the water, a flash of metallic blue flame, not easily observed in daylight, resulting.

The next spectacular display is from the aptly-named Dragon's Mouth. The precipitated deposits have over a course

varying in temperature with every puff of wind. The view from this ledge is comprehensive, and many geysers may be seen playing at different moments, but at their allotted times.

Lower down the valley is the miniature mud volcano known as "The Lady's Toilet." The small volcano is surrounded by a circle of earth that quakes at regular intervals, and outside this circle is another ring of mud deposits of various hues, from creamy white to rose pink, that bubbles and blobs incessantly. The mud contains certain alkalis that cause it to be regarded as a great beautifier, and ladies rub it on their hands and faces.

The Opal Lake, a vivid pool of boiling



The Huka Falls.

Outlet of Lake Taupo and source of the Waikato River.

of many years given the mouth of this geyser all the appearance of a dragon's head and mouth, a dull pinkish grey in colour. The water bubbles incessantly in the dragon's throat, and every seven minutes is shot out in a great gusher, part of which flows into the Lightning Pool, so called on account of the gases flashing through the water like sheet lightning.

A very good view of the geysers can be obtained from the small terrace of bright red volcanic soil, which runs above the dragon's mouth. All around are little jets of steam forcing their way through the broken and treacherous-looking ground of the terrace. The air is moist and hot,

water, set among ferns and mosses, is passed, and the Eagle's Nest is reached. This spluttering, spitting cauldron of boiling water contains three geysers—the Big Eagle, the Little Eagle and the Eaglet. Perhaps three feet in diameter the nest is set in tall ti-tree scrub. The walls of the cauldron rise to a slight cone, and laid upon this are the remnants of many branches petrified and frosted over with mineral deposits. Every half-hour the Big Eagle and the Little Eagle play in unison, pause for three minutes, and play again. Slowly the boiling increases, until the water rises to the crest of the nest. It then subsides, sends up a preliminary shot,

momentarily subsides, and then comes the great gusher, hurled skywards by some hidden power below. The Eaglet plays after the other two.

Running the gauntlet of "The Devil's Toll-Gate," an unpleasant geyser of uncertain action, past the very brink of which the footpath runs, and the tourist comes upon the Champagne Water Fall. About thirty feet above the heads of the onlookers is another ever-bubbling pool, invisible save for the eternal steam and a few stray drops of water. Suddenly the geyser plays, and down the terraces and beneath and past the very feet of the spectators flows a steaming cascade of bubbling, sparkling water. It would seem here that pink terraces are in the act of formation.

But the most interesting wonder in the valley is the Twin Geysers, comprising the Paddle Wheel and the Dancing Rock. This complicated geyser practically defies description, and no account, however comprehensive and well written, gives an ade-

quate idea of it. The Twin, the Dancing Rock and the Paddle Wheel are held in a pear-shaped basin, the Twin playing every four and a-half minutes and the Paddle Wheel every ten. Looking into this basin, the visitor watches spellbound the Dancing Rock, which is submerged and said to weigh half a ton. Suddenly the rock heaves upwards, falls back, and then, without warning, suddenly heaves its face to the surface of the water, ejected from its usual position by the terrific force of gas which rushes upwards. Slowly the rock falls back into position, while, the gas freed, the Paddle Wheel commences to thresh and throb its way through the water like the paddle wheel of a steamboat. The Twin shoots up a few preliminary spouts of water, and then a big gusher is hurled from the fountain of the geyser.

There are many other wonders in the Wairakei Valley—but they are too numerous for description here. They are all impressive, and many are unique, but those mentioned are the best displays.

THE HOME OF THE PEARL



A fleet of pearling luggers at Broome, W.A.

VOYAGING ALONG THE COAST

MELBOURNE TO SYDNEY IN A FORTY-FOOT KETCH

INTERESTING EXPERIENCES AND IMPRESSIONS

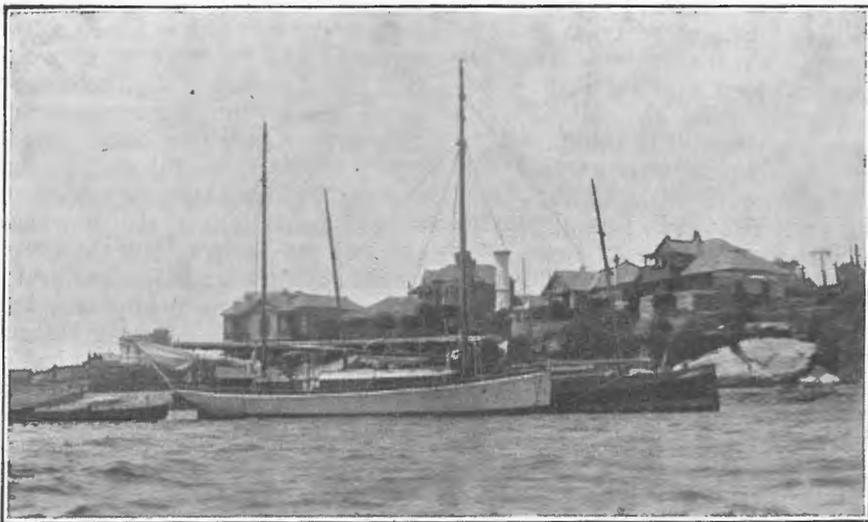
By G. A. ROBINSON.

The following story has been compiled from the log of the "Atalanta," and gives a very realistic impression of the experiences encountered on the voyage from Melbourne to Sydney.

TO voyage from Melbourne to Sydney in a ketch, forty feet long, may not be as hazardous an undertaking as many seafaring men are accustomed to, but nevertheless it provides plenty of experience, and, if the weather proves contrary, not a little element of danger.

My first determination on purchasing the *Atalanta* was to stipulate that she be delivered to me in Sydney, with the proviso

judicious departure about 7 a.m., anchoring in Cole's Channel a little below St. Leonards. Later that day we went outside nearly to Cape Schanck, but for various reasons (barometer 29.80 to 29.50), came back to Queenscliff. We tried it next day, and got to Cape Schanck, but put back with three reefs in the mainsail and nothing else, and went to Swan Island Naval Depot, where we stayed for three days. The ves-



The ketch "Atalanta" in Sydney Harbour.

that the owner, Captain Leggett, should call for me at Twofold Bay.

This plan, however, like many other well-intentioned ones, went by the board, and eventually I found myself, in company with Captain Leggett, engaged in fitting out the ketch at Williamstown, preparatory to making the voyage. The weather at the time was most unfavourable, the barometer jumping between 29.20 and 29.90.

We went first to Portarlington, where we spent a night, and made a hurried but

sel surpassed expectations as a comfortable cruiser. Owing to the bad weather that we encountered we had very little rest, but otherwise the trip was most enjoyable.

Captain Leggett is a University man, who, partly for health and partly by inclination, abandoned a mastership at the Hutchens School, Hobart, for the doubtful joys of running ketches around Tasmania. He is a good companion, a finished cook and a most *complete* seaman. I hope to live and prosper so that I may have the privilege

of asking him to accompany me on something larger on a longer and more hazardous voyage.

The following day we set out on our adventure, leaving Swan Island at 8 a.m., and clearing the heads ninety minutes later. A light north-east wind was blowing at the time, and it continued to fan the ocean all day, changing late in the evening to the south-east and then round to east. We beat about all night, and at 4.30 next morning found Cape Schanck away to the north-east about seven miles, indicating that we had lost considerable ground during the night. The early morning brought gloomy skies and misty showers of rain, so, with a light south-east breeze blowing, we decided to make for the east entrance of Westernport and anchor at Newhaven. A few hours after we had taken shelter a strong westerly wind sprang up, and late in the afternoon it reached gale force, rapidly churning up a heavy, breaking sea outside. All next day we remained in our haven of refuge with the barometer reading 29.80 and heavy rain squalls accompanying the wind, which still blew with hurricane force. Next morning the wind had fallen, but a fairly heavy sea was still running, and we deemed it advisable to wait another day before venturing out. A fresh supply of provisions and firewood was procured, and early next morning we put to sea once more, favoured with a fresh south-west wind. Aunt Sally was abeam at 10 a.m., and we had a splendid run to Wilson's Promontory, passing en route Cape Patterson, Cape Liptrap and Citadel Island. At 8.45 p.m., when abreast of the Promontory, the wind fell to a light breeze, but the sea was very lumpy, and the square-sail alone was set in order that we might get as quiet a night as possible. In the early hours of the morning we passed Clifty Island, and, favoured by a light S.E. wind, we continued steadily on our way until, at 8 p.m., the reckoning showed that we were thirty-five miles south from Gippsland Lakes Entrance. The weather at the time bore every indication of a change, and as appearances denoted that it would come from the north-west we stood close in to land to get the full benefit of it.

At seven o'clock the next morning we were four miles from Ninety Mile Beach,

and about five miles to the east of Lakes Entrance. For a few hours an intense calm prevailed, but just before noon a steady south-easter sprang up, and we bowled along till we came to the entrance to Snowy River. Marlo Village, situated at the mouth of the river, could be seen about seven miles off just before dusk, when we stood out to sea.

During the night the wind dropped till not even a zephyr disturbed the surface of the water. A long swell kept the ketch continually rolling, and we were heartily glad when, a few hours before dawn, a light north-easter came to help us on our way. When we were able to ascertain our position we were about ten miles from Conran Point.

During the day we had extraordinary mirages. Mountain ranges appeared and disappeared suddenly. The beach that was well out of sight thirty miles away was lifted half-way up the distant (real) mountain ranges with every detail clear. Fantastic crests appeared and disappeared on Point Hicks Hill and Everard Hill. The scene to landward became a phanta magoria in the afternoon. At 7 p.m. Cape Everard light was E.N.E. twelve miles. The light wind remained N.E., barometer 29.80. At sunset the lower limb of the sun, blazing red, touched the horizon, but the deep-red orb would not sink for at least several minutes, during which time it appeared in a dozen fantastic shapes. As weak tea and coffee were the strongest liquors we had on board the blame for these nightmares must be laid upon refraction, and the vagaries of the Master of the Shadow Show. The extraordinary appearances of this day made us very apprehensive of the night, and we felt that unless we could round Cape Everard before long we should have trouble. The wind went very light north at 11 p.m., and by carefully taking advantage of every puff we had the Cape bearing N. ten miles at daylight, when the wind fell altogether.

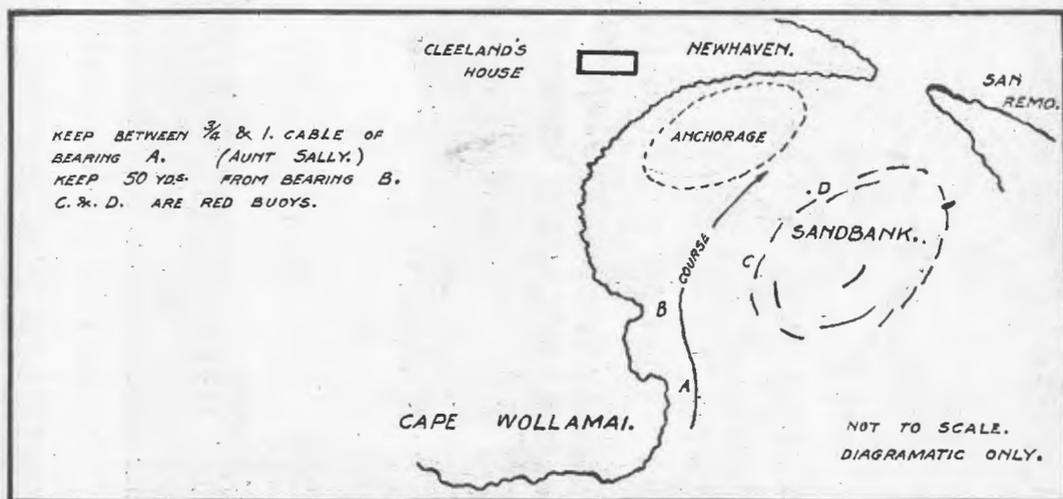
A fine display of rapidly-shifting cloud banks all round the horizon greeted us at sunrise, and immediately afterwards we were struck by a westerly squall, which reduced us to double reef mainsail and stay-sail. A course was set for Gabo, which point we passed at 12.40 p.m. in a mode-

rate gale, with a heavy following sea and terrific rain, the wind turning to the south. Cape Howe was passed at 1.30 p.m., and Green Cape at 4.30 p.m., when the violence of the wind died down.

At 8 a.m. on January 20 Montague Island was abeam, and four hours later we were abreast of Moruya Heads. The strong wind of the previous night and early morning had almost died down, but a heavy sea was still running. We had shaken out the reefs during the day, and were doing well, but at 4 p.m., with very little warning, a heavy S.E. squall, with rain, enveloped the ketch. It was very violent for two hours, reducing us to close-reefed mainsail and staysail. The land was invisible during the remainder of the afternoon, but when night fell

we began to fear that the conditions mentioned indicated waterspouts. Our doubts were set at rest a few hours afterwards by the advent of a strong southerly, which brought up heavy rain. For three hours we were subjected to a severe buffeting, but as we neared Sydney the fury of the elements decreased, and to our great satisfaction and relief we entered Sydney Heads at 5.30 p.m. on January 21.

In order that other voyagers may benefit from the experience gained on our trip a sketch of the eastern entrance to Westernport, at Cape Wollamai, is reproduced herewith. This entrance, though little used except by local people, is safer and much shorter than at West Head and Grant Point, and may be used by vessels up to fifteen feet at least. It is perfectly safe in



Sketch of Eastern entrance to Westernport, at Cape Wollamai.

we picked up Jervis Bay light, and ascertained that our course was correct. Frequent bearings were taken until, at 11.15 p.m., when the light was nearly abeam, we were able to shape a course for Sydney.

At sunrise we were clear of Crookhaven Bight, and although there was no definite roll the sea was continually rising to a pyramid of small pinnacles, which broke as soon as they formed. As far as the eye could reach the ocean was enveloped in this strange phenomena. No land was visible, and although heavy rain clouds hovered around we could find no explanation of the mysterious occurrence. A feeling of uneasiness gripped us, and

all winds and weather. The sailing directions in the books, being intended for larger craft than yachts, make the entrance appear more risky than it is, and certain beacons which are mentioned do not exist. The only dangers are the reef at A and B and the sandbank on the starboard hand. This bank breaks the sea in all gales. There is a telegraph office at Newhaven, and a store at San Remo. Westernport appears to be an admirable cruising ground if voyagers have time to spare. Cape Wollamai is a magnificent spectacle when the sun shines on its red granite face. It is a mutton bird rookery, and one of the sights is to watch the birds come to land by the million at dusk.



Kempsey Bridge, North Coast, N.S.W.

This fine structure spans the Macleay River at Kempsey, and is one of the big bridges built in connection with the North Coast railway. It possesses the longest timber spans of any bridge in N.S.W.

WILD ANIMAL FARM IN THE HEART OF MISSOURI

By MARY MARLOWE.

“COME quickly, and bring your camera. We've found a wild animal farm.”

I was in the wilds of Missouri, U.S.A., travelling with a Shakespearean company, when this wonderful discovery was made by some of our members. In making a train connection we had “stopped over” at a small country town, playing one night in the local Town Hall, and spending the week-end there. On Sunday several of the men went tramping, with the result that soon Petruchio came flying back to the hotel to fetch me. I attribute the compliment less to my popularity than to the fact that I possessed the best camera in the company.

toss of his head, but apparently they were a happy family, and knew that the moment for facing the cold world would come soon enough.

We learned from a preliminary chat with the farmer of this Noah's Ark collection turned out to grass that this was the breeding-ground of most of the animals supplied to the Wild West shows. It was the cradle of the circus and the nursery of many a wonder troupe. We began to understand how beasts that we expect to be ferocious, from the very nature of their species; exhibit a lamb-like docility in the ring.

He told us that as many animals as are bred there are requisitioned by the circus



How the animals treat visitors.

With winged heels we set off for the discovery ground, about a mile out of the town. It was in the midst of the flat Indian corn country, so typical of the Middle West. Breakwinds of spruce and furs sheltered the compounds, and rough sheds were erected in a somewhat haphazard fashion for housing the animals. The fencing was of the post and rail variety, and, while there was plenty of room for the stock to graze and move about, there was no attempt to pen them separately, or to protect the neighbours from vagrant elephants or inquisitive camels on the prowl. Any one of the animals could have broken through the boundaries, or uprooted the posts with a

proprietors, and orders for Palestine donkeys, zebras, camels, elephants and miniature horses—preferably piebald or skewbald with a strain of Shetland—come in almost weekly.

It is true that the wild animal farm is not yet the home of the lion or the tiger, and occasionally rare animals must be procured from their native soil, but a second generation frequently opens its wondering eyes within the precincts of the farm, and veterinary work is done by the farmers, who are qualified vets.

“The circus has come to town!” is, even in this advanced age, quite the most thrilling announcement that can be made in

many hundreds of the small towns of America. It is the event of the year, and baby elephants and accommodating camels that will permit themselves to be ridden for a dime around are the legitimate rivals of the ephemeral screen charms of Mary Miles Minter and Marguerite Clarke. The picture show ye have always with you, but the circus! We, who live in blasé cities, have no idea of its real glory. The upkeep of this philanthropic-cum-commercial organization is colossal. Frequently expensive animals that are brought from abroad to swell its attractions cannot stand the strange climate, and die after a few weeks in harness. The wild animal farm helps to combat this financial speculation. If the animal can be bred in the country where it will have to work it is more likely to live and thrive in that country than one whose constitution will be affected by varying degrees of temperature and vagaries of climate. Thus an enormous initial expense is saved.

The Palestine donkey, with the strange dark markings of the cross on its back, is one of the most timid of animals, but the single one that was in residence at the Missouri farm allowed us to approach him and stroke his nose. His solemn and infinitely sad eyes looked beyond us to the waving fields of corn, but the wistful yearning of his brown orbs turned to even deeper reproach when our stock of turnips gave out.

There is something very matey about a zebra. The baby one, who made friends with us, found my camera specially fascinating, and made several efforts to prove its possible edibility. The black smudge of his nose lent it a foreshortened aspect, and his comic countenance, with the giant toothbrush effect of his mane, easily made him the comedian of the compound. He followed us all over the farm, acting as a sort of cicerone, and, nosing his way between the elephants when they formed a scrum, he seemed to indicate that he was "breaking trail," and we might safely follow him. At a close-up his markings were the most symmetrical I have ever seen, and the startling contrast of the black and white made him the most effective of all the animals on the farm. In his native decorative scheme he is far more wonderful than any creation of man or modiste.

Where the stripes broke over his flanks and shoulders they braceleted down his legs like well-adjusted puttees. As we fed him one of the miniature elephants slyly commenced to raid one of the boy's pockets, and the youthful zebra's forehead tuft quivered in either protestation or curiosity—we couldn't decide which—and he abruptly pushed away the hands extended with the proffered forage with his smutty, velvety nose, chased the groping elephant about his business, and returned to make a private investigation of the contents of that pocket. He was the self-constituted censor of all forbidden fruit. Before I left the farm I had faithfully promised myself that when I could afford it I would keep a baby zebra. He would be the best tonic in the world for a damaged sense of humour.

There were a number of camels in various stages of growth in the compound, and we noticed that when they were not lying down they were continually on the march up and down the estate. These desert-seekers took their ease like sybarites, however, and would lie down beside the food troughs, and even in them when they were ground troughs, and munch at their leisure. One camel was particularly fond of lying in the water trough, and, under the blazing sun of that Middle Western day, I was inclined to think he had chosen the oasis of his own private desert.

We took rides in turn on one specially affable camel, who boasted no saddle and moved to the merest touch of the driving rein, which was worn round his nose and attached to a rope harness like a skeleton aeronaut's cap, with loops for his ears. With a light hand switch or the end of the rope tickling his hide one could drive him from the saddle hump, but most of us were content to let one or another of our number pull on the rope and trot us round the enclosure. I think he must have been rather a vain fellow, for we took so many photographs of him in various attitudes, with ourselves draped about his person, or using him as a bulwark, and never once did he make any difficulty about being effectively posed. Maybe the flares of the circus were already in his blood, and he recognized the value of free publicity.

A lone dromedary, with a haughty stare, received our overtures somewhat stiffly. I cannot truthfully say that our visit made any marked impression on him. A hippo, who had come in for veterinary attention, was too neurotic to be approached, and we were asked to leave him to his sorrows in what we learnt was a hypochondriacal condition, though, let it be said in justice to the farmer, he didn't call it that.

"When the beasts have been out with the circus they become much more nervous than what they are here," he told us. "We don't train them, we only breed 'em. They don't know anything about the whip or the spur here. They get used to human beings, but the tricks come later." So the neurasthenic Mr. Hippo, sat on his tail and dusted summer gnats off his pachydermis with his low comedy nose, emitting hysterical grunts the while.

The piebald ponies were a joy to behold. Two leggy cinnamon-and-white foals, only a few days old, were the offspring of the daintiest little Shetland pony, also piebald, that in all my wanderings I have ever seen. She was as timid as a faun, and the babies were more like deer that had lost their antlers than young horses. After a great deal of coaxing the mother permitted me to stroke her forehead and the graceful white arch of her neck as the markings

splayed out in a triangle from between her ears; but at the first hint of a human hand being laid on her children she became almost savage, and, with a warning snort, called them to her side, and all three scampered to the far end of the compound, rumps quivering and tails tossing.

After a morning of the most absorbing interest the elephants escorted us to the gate. Again the compliment was not a personal one, but such perfect sympathy exists between the farmer and his queer flock that, with dog-like fidelity mixed with inquisitiveness, they follow after.

The afternoon train whirled us back to the cities, and a few weeks later we had returned to the bright lights of Broadway, but I believe that day on the wild animal farm made an indelible impression on all of us who were lucky enough to make the find.

"Katherine," said Petruccio to me in the railway car, "does it strike you that those little beggars are in the same profession as we are. Servants of the public, all of us, whether we be Shakespearians or circus actors!"

The winds of chance blow us about the world. To-day I am wondering in what arena are my friends of the wild animal farm.

THE DIFFERENCE

By MARY CAROLYN DAVIES.

One man gives his heart to the sea,
 And one to the mountain peak,
 One to the mine, where bright rocks shine;
 And one goes out to seek
 On the hundred roads of the ribboned earth
 One thing by night and day,
 And what he seeks may be little worth;
 But he is away, away!

One man gives his heart to the sea,
 And one to the mountain peak,
 And neither listens nor heeds at all
 When the little houses speak;

The little houses with panes alight,
 With candles shining far,
 With ready hearth-fires glowing bright,
 Where the patient women are.

One man gives his heart to the sea,
 And one to the mountain peak;
 And for all strange treasures that there
 may be
 Over the world they seek.
 But the women listen and wait and weep
 Bitterly, bitterly;
 For never a woman gives her heart
 To the mountains or the sea!

A LINK WITH THE PAST

NEWCASTLE MAN'S EXPERIENCES

SHIPWRECKED TWENTY YEARS AGO

THE average person will no doubt feel that he is delving into fiction when reading of some of the thrilling experiences which, many years ago, befell a present-day Newcastle resident, Mr. Thomas E. Gaites, who for some years carried on the business of monumental mason at the west end of the northern township. But it is only another instance of where "truth is stranger than fiction," and it is fitting that the romantic story of Mr. Gaites's experiences on ocean and battlefield, as told in a recent issue of the Newcastle "Sun," should be widely known.

It was on May 27, 1903, that Mr. Gates boarded the steamer *Oakland*, bound for the Richmond River.

The vessel, only one of 400 tons, was owned by the North Coast Company, and was in command of Captain Slater. The cargo comprised coal and a miscellaneous collection of other merchandise, including twenty cases of monumental stones, which Mr. Gaites was taking to the northern rivers.

Danger Ahead.

When off Nobby's the skipper, one of the bravest of seafaring men, judged from the gale then springing up that there was danger further ahead, but, as he had encountered many rough days at sea before, he believed that he would eventually anchor in a haven of safety. Unfortunately his faith was not realised, for when the steamer was in sight of Port Stephens the force of the gale had become terrific, equalling in severity, it was asserted, a typhoon of the China Seas.

The *Oakland* was unable to withstand the strain, and when at Cabbage Tree Point, three miles from Port Stephens, the force of the gale sent her broadside. During the passage so far Mr. Gaites was enjoying his sleep.

A rude awakening came, however, when he heard the captain ordering the sailors to the wheel.

"All Hands On Deck!"

This was followed by another command: "All hands on deck!" The order was no sooner given than it was obeyed. Then commotion reigned. The sea was rolling mountains high, and disaster for the steamer seemed inevitable, while fear entered the hearts of the men on board.

The starboard lifeboat was launched, but the belaying pin was stove through the bottom, and the ropes had to be cut in order to free her. The boat quickly filled, but the whole of the eighteen souls on board the doomed steamer, including Mr. Gaites, succeeded in clinging to the gunwale.

Four of the crew were washed off and drowned, and as the steamer was sinking fourteen men were holding on to the lifeboat. While doing so the vessel plunged head forward and sank.

The weather was bitterly cold, and rain was falling heavily at the time. The sufferings endured can be more easily imagined than described. On the mind of Mr. Gaites and his comrades, who escaped a watery grave, it left a lasting impression.

Eleven Deaths.

Some of the crew died from sheer exhaustion. The captain saw his chief engineer die alongside of him. Then the captain succumbed, and the reason of others left them. The number of deaths was eleven out of the eighteen who left Newcastle a few hours before.

After the captain's death the second mate, John Howes, took command of the lifeboat, which was tossed about on the water for eight hours. Then a vessel was sighted in the distance, in the direction of Port Stephens.

At the risk of overturning the boat the mate had a handkerchief tied to the oar, and succeeded in attracting the attention of the men on board the vessel, which proved to be the *Bellinger*. She immedi-

ately steamed to the distressed men, reaching them just as the boat had captured a second time.

The survivors were exhausted, and the master of the *Bellinger*, Captain Taugler, declared that the boat could never have reached land. After the men had received the kindest attention the *Bellinger* returned to Port Stephens, and thence went on to Newcastle.

Soudan Episode.

Thirty-seven years ago the eyes of the world were upon England and the Soudan, which were engaged in war, and when the news of the death of General Gordon at Khartoum was received in Sydney Mr. W. B. Dalley, Attorney-General in the Stuart Government—the Premier was absent from New South Wales at the time—decided to offer troops to assist England. Mr. Dalley promised that two batteries of horse artillery and 500 infantry could be landed at the Soudan within 50 days.

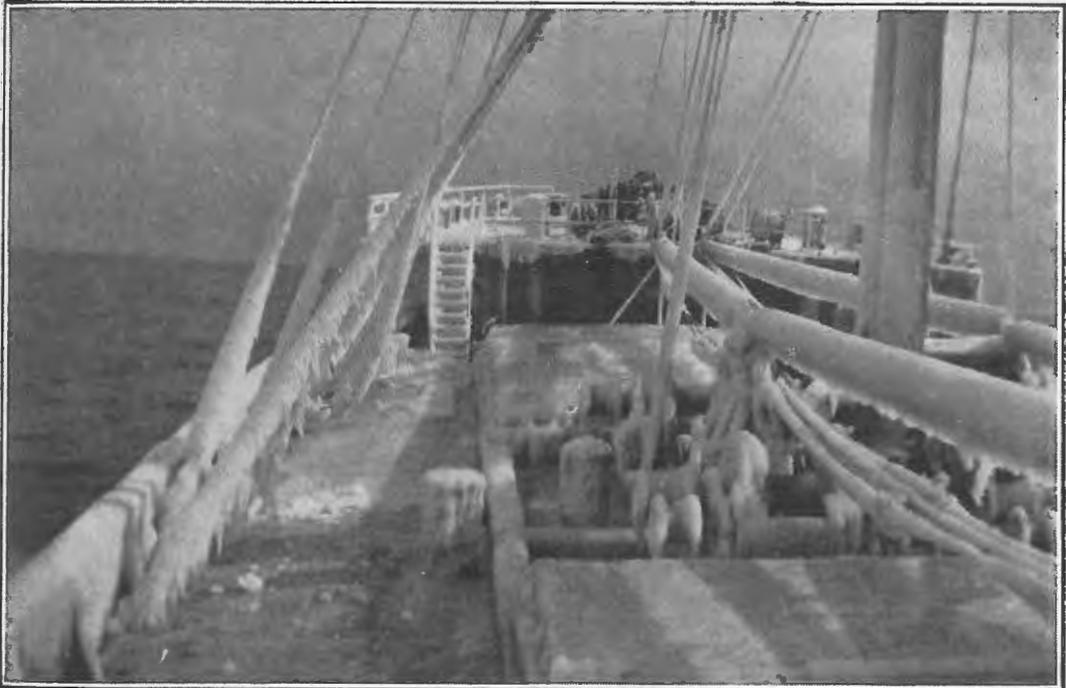
Newcastle Volunteers.

Mr. Gaites was one of the first to volunteer from Newcastle, and, with the other members of the contingent, arrived on the battlefield within the fifty days, after a march of eighteen days through the desert.

The Australians were placed shoulder to shoulder with the picked men of the brigade, the Scots, the Coldstreams, and the Grenadier Guards.

The fighting, however, was of short duration, but it gave the Australians their first baptism of fire. They were praised by General Graham, on behalf of Great Britain, and they were also accorded a vote of thanks in the House of Commons.

When the two steamers chartered for the troops were leaving Sydney Harbour—the *Australasian* and the *Iberia*—a collision occurred between the steamer *Nemesis* (conveying friends to see the volunteers outside the Heads) and the *Iberia*, resulting in the loss of two lives and severe injury to a number of others on board.



In the Grip of Ice.

This remarkable photograph, taken by Mr. F. R. Hughes, Wireless Officer of the steamer "Canadian Seigneur," shows the forepart of that vessel smothered in ice when off the Newfoundland Coast. The spray which dashed over the steamer was frozen by the extreme cold, and hung around in icicles as shown in the picture. So great does the weight of ice become at times that a number of the crew have to stand around and break it off with axes.

NEW ZEALAND AFFAIRS

CATERING FOR TOURISTS

By HENRY BATESON.

(Special N.Z. Correspondent to "Sea, Land and Air.")

A VERY important venture has just been launched in New Zealand. This is the amalgamation of all the motor services of both islands with a view to establishing an aerial service between Wellington and Blenheim, and Wellington and Nelson. The proposal originated with Mr. M. B. Macdonald, manager of the Kaikoura Motor Company, and at time of writing the Star Tourist Association, as the combined companies are to be known, includes such well-known South Island firms as the Mt. Cook Motor Company, Pilkington's Christchurch to Akaroa Service, Mockett's Culverden to Hammer Springs Service, Clement's Service (Franz Josef Glacier), Emm's Motors, Ltd. (Takaka), Messrs Newman Bros., Ltd. (Nelson), and the Kaikoura Motor Company. No North Island firm has yet been admitted to the association's membership, but Mr. Macdonald is now touring the North Island enlisting the support of all motor and taxi firms.

The association intends advertising extensively, both within and outside the Dominion, the object being to bring the tourist resorts in the Dominion under the world's notice. Directly a visitor lands he will put himself in charge of the association, who, working with the Tourist Department, will supply him with information, help him to choose the field of his holiday to suit his fancy, and to see that he enjoys his vacation without discomforts and vexations. It is contended that a better service will be maintained at cheaper rates.

The aerial service across Cook Strait will be in charge of Mr. Macdonald and Mr. T. Newman. It is proposed to use *Handley-Page* buses, of a similar type to those being utilized in the Paris-London service. It is expected that Mr. R. L. Wigley, of the New Zealand Aero Trans-

port Company, and managing director of the Mount Cook Motor Company, will be chiefly responsible for the association's purchasing of 'planes, and will guide the association in all matters connected with this portion of the service. The *Handley-Page* machines will be of the 24-seater pattern, and will be of the amphibious type. If a third machine can be obtained it will be used in the Wellington to Christchurch service. The machines will leave the wharves, and it is anticipated that the trip will be made in forty-five minutes. It is expected that the motor service will be in operation by September.

Secretary for Marine Retires.

Mr. Robert Duncan, Secretary for Marine, has just retired on superannuation. Mr. Duncan arrived in New Zealand in 1884, and served as a chief engineer with the Northern Steamship Company and the South Sea Island Mail Service. In 1890 he became a Government inspector at Dunedin, and three years later was promoted to the post of chief inspector. Towards the end of 1919 he was appointed Secretary for Marine in succession to the late Mr. George Allport.

Tainui's Record Trip Home.

The Shaw, Savill and Albion liner *Tainui* arrived at Southampton on June 15, after a record passage of 36 days. The *Tainui* left Wellington on May 10, and went home via the Panama Canal. No mail steamer employed on this run has yet done the trip in less time, but, of course, in these days of little cargo there is no violent hurry for ships either to get home or to reach New Zealand. Many lines prefer to economise on coal and make average trips rather than put up record runs and have a large coal consumption.

“Maunganui” Relieving “Marama.”

The Union Company's steamer *Maunganui*, which has been laid up at Port Chalmers since she ceased work in the transport service at the end of the war, has been put into commission again to relieve the R.M.S. *Marama*, in the San Francisco mail and passenger service. The *Maunganui* is the largest vessel which has been laid up in New Zealand waters. There are still many vessels laid up at the four chief ports, but the revival in trade which is following on the higher prices being received for meat and wool will no doubt result in a number of the vessels now lying idle being recommissioned after the present winter, or even before.

Death of Well-Known Shipping Man.

The death occurred in Wellington recently of Mr. Joseph William James Preston, of the head office of the Union Steamship Company. The late Mr. Preston was well known in shipping circles throughout the Dominion. He joined the company at Auckland in 1889, and in 1905 he was appointed branch manager for the company at Burnie, Tasmania. From January to June, 1907, he was traffic manager of the Wellington branch, and was then appointed branch manager at Gisborne. Until August, 1920, he held that position, but he was then transferred to the head office as examiner of working costs, a post he held until his death.

Northern Steamship Company.

The annual meeting of the Northern Steamship Company was held in Auckland recently. Mr. C. Rhodes, chairman of directors, presided over a very large attendance. According to the report, the net profit of the working account for the year ending March 31 last, after making provision for insurance, depreciation and boiler and repairs account, was £12,097. The balance brought forward from April 1, 1921, was £3,460, while transfer fees amounted to £7, making a total of £15,556. The amount of cargo carried by the company, compared with last year, showed a decrease of 14,000 tons, while the ordinary passenger traffic showed a falling off of some 11,000 passengers, plus fully as many more holiday excursionists. The retiring directors,

Messrs. M. A. Clarke, N. Alfred Nathan and G. T. Niccol, were re-elected.

Auckland's Maritime Trade.

A return is available of Auckland's maritime trade. This shows that for the year ending December 31 last the imports totalled £14,677,394, while the exports amounted to £11,943,224. These figures, when compared with those of the previous year, show a fairly heavy falling off in the importations and a slighter increase in the exports. In 1920, the boom period, the imports totalled £18,732,082, which was £4,054,688 higher than the figures for 1920. The exports for the same year totalled £9,383,603; so that the exports last year have increased by a sum of £2,559,621.

The Auckland Customs returns for May show an increase of £16,636 over the figures for the previous month, and an increase of £8,820 over the figures for the corresponding month last year. The figures for last month were £131,449, and for April £114,813. The amount collected in May, 1921, was £122,629.

Civil Flying.

The New Zealand Air Board's return of civil flying for the month ended April 30 shows that a total of 552 passengers were carried for the month, and that the approximate mileage flown was 4,190 miles. The number of flights was 291, and the average mileage per flight 14.4. The New Zealand Flying School, Auckland, was the most active company during the month, carrying out 198 flights, covering 2,113 miles, and carrying 378 passengers. The average mileage per flight was 10.6 miles. The Canterbury Aviation Company, Sockburn, conducted 55 flights, carrying 107 passengers a distance of 1,510 miles. The average mileage per flight for this company was the highest of the three—27.4 miles. The activities of the New Zealand Aero Transport Company, Timaru, were not extensive, only 38 flights being made, 67 passengers carried, and 567 miles covered. The average mileage per flight in this case works out at 14.9. The New Zealand Flying School has been carrying out many harbour trips with their supermarine flying boat, and this is responsible for them heading the list.

ONE THOUSAND MILES BY CAR

AN INTERESTING TRIP THROUGH N.S.W.

VISITING THE STATE'S BEAUTY SPOTS

THE *Scat* was brand new, just out of the body-builder's hands, when three enthusiastic motorists started off early one morning on a holiday tour.

A pleasant run was made via Camden to Moss Vale, the roads generally being good, especially over Razorback. From Moss Vale to Goulburn the road was bad, but nevertheless Goulburn was reached early in the afternoon. Leaving there the following morning soon after 9 o'clock for

perch being fairly plentiful. The car was brought to a standstill under a beautiful spreading tree, and lunch partaken of. Then commenced the climb up Talbingo Mountain, a steady ascent for six miles, and one which serves as a splendid test for the hill-climbing capabilities of any car. The *Scat* kept cool throughout this long climb, and proved herself specially suitable for extremely mountainous country. The view from the summit of Talbingo Mountain is



The foot of Talbingo Mountain, where the ascent to Kosciusko commences.

Tumut, all went well until Tiranna was reached, where, unfortunately, the road to Collector was taken in error. This necessitated a very stiff climb over the Cullarin Range of mountains, a grade of one in six being met, but the car responded excellently, and Gunning was reached in due course. From Gunning to Tumut the roads are good, so speed was put on and the latter town reached in good time. On the morning of the third day we found the roads to Talbingo bad, but the district is a very pleasant one, the thoroughfare passing through large areas of cultivation. Talbingo is prettily situated at the junction of Journama Creek and the Tumut River, which at this point is a fine stream and an excellent fishing ground, cod, trout and

very fine. Indifferent roads were met onwards to the Caves House at Yarrangobilly, where a stay of three days provided a highly enjoyable time. The caves are very fine, and as some miles of paths have been made along the sides of the mountains pleasant walks in the gullies can be enjoyed, and, in addition, there is the swimming pool of tepid water, clear as crystal, pouring out of the mountain side in a never-ending stream. At the outflow from the bath a fine douche bath has been provided, and is much appreciated by visitors. The house is under Government control; and is run on first-class lines, amongst the conveniences being a number of garages for the use of motorists. As a health resort, Yarrangobilly has pure mountain

air with the scent of the gum trees in it, a natural warm mineral bath and excellent accommodation.

Leaving Yarrangobilly, a short run over excellent roads brought us to Kiandra, the highest and also coldest town in Australia, once a famous place for gold-mining, but now bereft of its old-time glamour.

After a pleasant run over good roads through Adaminaby and Jindabyne Kosciusko was reached, and next morning after breakfast a trip was made to the summit, 7,328 feet above sea level, being the highest point in Australia. Our car made the ascent without the slightest difficulty or trouble, thus setting the seal on its hill-climbing capabilities. It was ex-

twenty-three miles by a good road from Goulburn. From thence the road to Moss Vale was taken, followed by a visit to Fitzroy Waterfall. We then descended Barrangarry Mountain, passed through the beautiful Kangaroo Valley, and made the ascent of Berry Mountain, a very stiff climb over a bad road; but the view from the summit amply repaid us. Jervis Bay, the Shoalhaven River and surrounding country can be seen as from an aeroplane. This mountain is covered in parts with dense brush timber, and the soil is of rich volcanic variety. Kiama was reached in the afternoon, and next day a visit was paid to the Blow Hole, and then on to Bulli over the most atrocious roads met



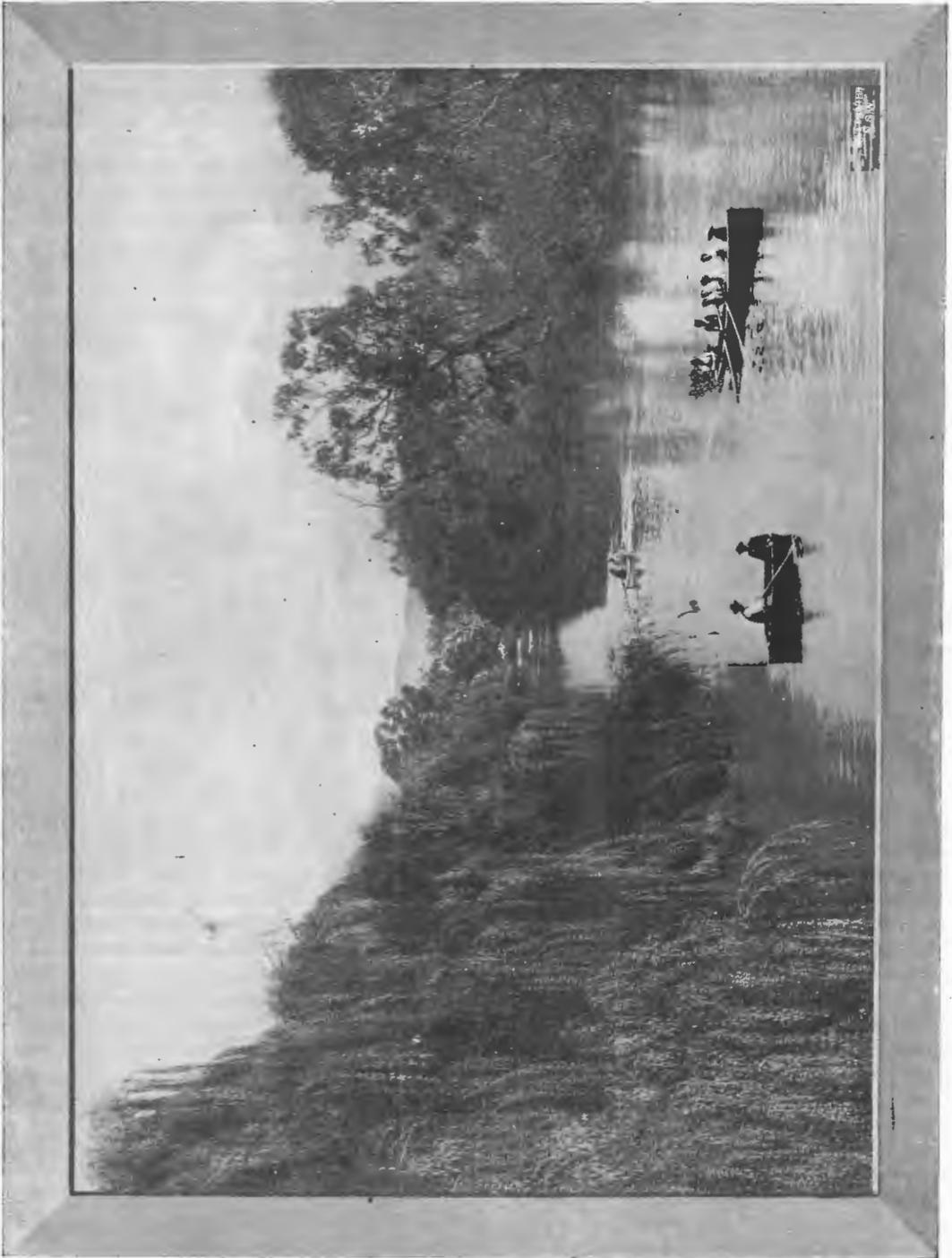
At the summit of Mt. Kosciusko—the highest point in Australia.

tremely cold at the summit, the atmosphere making a fire very acceptable and also luncheon. The next morning we set out for Cooma, the roads being very good, and from thence enjoyed a pleasant run to Queanbeyan. The following day was spent at Canberra, and after lunching at the pretty Cotter river we walked up to the dam, which is well worth seeing. We returned to Queanbeyan the same evening, and next day motored to Goulburn, where Sunday was spent quietly. On the Monday we drove to the Bingonia Caves. These caves are not very interesting, as apparently no stalactite or other formations exist in them. Ladders and paths, however, enable visitors to go a long way underground, but it is necessary to provide your own lighting, and there is no guide. The view from the lookout over the Shoalhaven River and gorge is very fine, and well worth a visit, being only

with on the whole tour. Loose blue metal was met with throughout, and as this part of the country is very hilly it tests the skill of the car driver. A stay was made at Bulli, but the beautiful brush lands, with its wealth of palms and ferns, is quite smothered up with a thick growth of blackberry and lantana. Next day—the fifteenth since leaving Sydney—the last part of the tour was made via Appin-Campbelltown and by Woodville Road to Parramatta and back to Sydney.

The road from Bulli to Appin was good, thence to Campbelltown and Liverpool fair, and Woodville Road excellent.

During the whole of this trip beautiful fine weather was experienced, and no adjustments whatever were made to the car. A subsequent examination of the tyres gave no indication of the distance travelled, there being very little wear.



Tumut River.
Showing a picturesque scene near the township.

THE WOMAN'S CORNER



By MARY MARLOWE

HIGHWAY OF FASHION.

“THE new clothes for the coming spring season are like a tonic,” is the verdict of one of Sydney’s leading modistes. “There is a decided trend of the Oriental over everything. I have never seen anything lovelier, and one only regrets that it takes the Australian woman nearly a full season to get used to the new styles.”

Petunia is the fashionable colour, but a great deal of black and neutral shades will be worn, depending on their linings for a splash of colour. Sleeves are all shapes, as long as they are large, and in evening frocks draperies are attached to the shoulders and form flowing sleeves before they achieve their ultimate object of becoming long, wispy trains. Long slender lines are universally aimed at, and even the flounce now takes the form of a drapery, dipping fanwise to one side.

That godsend to women, the one-piece frock, is severely snubbed this season by those who set the decrees of fashion, and its place is being taken by the trimmed costume, either braided or beaded, with a coat or shoulder cape to match with a vivid lining. A little wrap, shaped like an old-fashioned umbrella skirt with arm-holes, is going to be popular; and any woman who can capture a Chinese coat will be the envy of her sisters. The sleeveless ones are the most charming.

Jersey cloth is still favoured for day frocks, and the serviceable moracain and crinkled silk also take a strong lead, while satin is much used for evening wear. A black satin gown, with monkish sleeves of tango georgette and skirt panels lined with the same colour; another of black

charmeuse embroidered in Chinese motifs of blue and gold; a crepe roman of myrtle green falling straight from a Florintine neck to the ankles, with hip scarf and flat velvet flowers are some of the models that are to be shown soon.

Hats are either very big or definitely small. Black varnished lace stretched over wire frames is in demand, and organdie and georgette will be used in the same way. Red-brown crinoline, with varnished ribbon in cartwheels, is one of the pretty models; others are of crepe de Chine and paille de laisse, with ribbon or flowers to match the costumes they are to be worn with. Flowing veils are again popular, and in some cases even light shawls are cascading over the brim of the hats.

AUSTRALIAN PRIMA DONNA.



Miss Florence Austral, Of Melbourne, who made her first appearance at Covent Garden, London, as Brunnhilde in “The Valkyrie” with great success.

Florence Austral (her real name is Wilson, and she is a Melbourne woman), who has made an almost sensational success as Brunnhilde in *The Valkyrie* and *Siegfried* at Covent Garden, was on her way back to Australia, via England, after a discouraging time in U.S.A. in the pursuit of that elusive

fairy, Success, when, to use her own words,

London's Beauty Writers

Selections from Noted Beauty Experts Writing for the English Press.

Simple and Effective Methods.

By OLGA AMSDELL, London, England.

Removing Her Skin.

The quickest and surest way to make a good complexion out of a bad one is to actually remove the thin veil of faded or discoloured outer skin from the face. This can be done easily, safely and privately by any woman. The process is one of gentle absorption.

Get some pure mercolized wax from your chemist and apply it at night like cold cream, washing it off in the morning. In a few days the energy in the wax will have absorbed the disfiguring cuticle, revealing the fresh young skin underneath. You will have a beautiful, clear, natural complexion. The process is pleasant and harmless, making the face look brilliantly attractive and youthful. It also effectually removes such blemishes as freckles, tan, moth patches, liver spots, pimples, etc. Every woman should keep a little mercolized wax on hand, as this simple-old-fashioned remedy is the best known complexion beautifier and preserver.

Naturally Wavy Hair.

Good stallax not only makes the best possible shampoo, but has the peculiar property of leaving the hair with a pronounced natural "wave," an effect presumably desired by many ladies. A teaspoonful of the stallax granules, dissolved in a cup of hot water, is ample for a luxurious head wash, and leaves the hair with a peculiar lustre and fluffiness obtainable from nothing else, as far as known. It is perfectly harmless, and can be obtained from most chemists in sealed packages, enough to make up to 25 individual shampoos.

Grey Hair Unnecessary.

One need not resort to the very questionable expedient of hair dye in order not to have grey hair. The grey hair can easily be changed back to a natural colour in a few days' time merely by the application of a simple old-fashioned and perfectly harmless home-made lotion. Procure from your chemist two ounces of tammalite concentrate, and mix it with three ounces of bay rum. Apply this to the hair a few times with a small sponge, and you will soon have the pleasure of seeing your grey hair gradually darkening to the desired shade. The lotion is pleasant, not sticky or greasy, and does not injure the hair in any way.

"I broke my journey in London to have a look round." A sudden opportunity presented itself for her to make an appearance in Wagnerian opera, and the critics praised her voice as "a delight." One reviewer writes of her: "As 'Brünnhilde' her greeting of the light had richness and depth without any effort. One could rest in the quality of the notes as they succeeded one another with extreme confidence."

NECKLACE OF MILK.

A recent discovery is a process by which milk can be converted into bead necklets, brooches, bangles and similar trinkets. After certain nutritious properties have been extracted for making a patent food the residue is first moulded into long sticks, and then cut by a machine into various shaped beads; these may be tinted to the colours required. The factory is at Scarborough, in Yorkshire.

HOW TO KEEP YOUNG.

Any day to your back door, madam, may come an old knife-grinder, who will sharpen your carver for sixpence. It will be worth your while to have a chat with him, for he carries the secret of the elixir of life. Nearer eighty than seventy (you will probably take him for fifty-five), he is hale and jovial, and has never had a day's illness in his life, except the time the red spider bit him. If you are sympathetic he will show you the marks on his calf, diminished by time, but not obliterated. Time was in hospital when doctors looked grave and declared in consultation that he must lose his leg. He told them he needed it, and refused the operation.

As they stood about his bedside, amazed at his tenacity and hold on life, one doctor asked him the secret of it. "'Unny,'" said the knife-grinder, "'unny. Nothin' but 'unny. Every mornin' o' me life I takes a big scoopful of 'unny.'" The doctors looked from one to another, and he who had questioned spoke again: "Ah, my man, you know too much. It's a fact that ten thousand pounds of honey are used yearly in the making of patent medicines." "And," continues the near-octagenarian, "come to think of it, ain't 'unny made up of all the juice of all the 'erbs in the world? Them bees goes from flower to flower, from 'erb to 'erb, gettin' the

best o' them all. 'Unny is natural food. 'Unny is wot keeps me 'earty. Never miss it any mornin' o' me life.'

The old knife-grinder is the genuine homœopath.

FIRST WOMAN BARRISTER.

Miss Ivy Williams, the first woman barrister in England, has been called to the Bar by the Masters of the Bench of the Inner Temple. Charles Lamb died too soon.

VAN DYCK FOR AUSTRALIA.

The Van Dyck portrait of Rachael de Ruvigny, Countess of Southampton, is being shown at the National Gallery, in Trafalgar Square, before being shipped out to the National Gallery in Melbourne. It was recently acquired by the Felton Bequest.

THE POSTCARD VENDOR.

The Oberammergau Passion Play, revived this year for the first time since the beginning of the war, was first performed 288 years ago on account of a vow made by a handful of villagers, who were the sole survivors of a local pestilence. Seven hundred people take part in it. The role of the Christ has been played by the same man, Anton Lang, three times in succession. In normal life the occupation of the girl cast for the role of the Virgin is selling postcards in a local shop.

WOMEN FARMERS.

A farm consisting of 93 acres at Lingfield, Surrey, is run entirely by girls under the guidance of the Women's Farm and Garden Association. The girls wear a uniform of crash coats, three-quarter length, dungaree breeches and high leather boots. To save the strain on their arm muscles when carrying heavy buckets, etc., a yoke is attached to their shoulders with solid chains hanging from it with large meat-hooks at the end to connect with articles to be carried.

SANDALS COME TO SYDNEY.

In choosing shoes it is well to know that a shoe with a strap over the instep is less tiring for a woman who has much walking to do than one without. Low heels having grown in popularity, the sandal shoe is

now introduced. These are cut right down at the sides, and a strap running up the arch of the foot joins one that crosses the instep. This year coloured antelope uppers to patent leather shoes will soon be seen in the shops. Crocodile and lizard skin are always firm favourites, as they are hard wearing and last for several seasons; also they cannot be imitated in common materials.

STORK TRAVELS BY AEROPLANE

Far away in the "warm bush places," where the stork finds it hard to shoulder his bundles over "the long measured track and the far untrodden spaces," a message is being carried to the lonely women of the bush that before very long an aeroplane medical service is to be instituted on their behalf and solely for the benefit of the future mothers of Australia. Instead of anxiously straining the ears for the rattle of the country doctor's trap, or depending on the good nature of a woman neighbour, the cheerful whizzing of the aeroplane will announce the advent of the doctor. This is good hearing, and marks progress. This is the aerial "male" service we need.

MISS THEA PROCTOR

Miss Thea Proctor, who is a pupil of George Lambert, is the only woman in Sydney practising lithography as a fine art; she is, in fact, practically introducing the art to Sydney. A native of this State, she has spent nearly 20 years in London, and during the war did patriotic work at Australia House. Her lithographic work, which is remarkable for its strength of line and beauty of colouring, has been exhibited in the Royal Academy, the International, Venice, and in the galleries of the South Kensington Museum, London. Miss Proctor says that the French have for long been keen on lithography, but that it was not so popular in England until the seventies, when Whistler began to make it better known. Now there are English artists who do nothing but lithography, such as John Copley, Spencer Pryce and Ethel Gabain. It is Miss Proctor's intention to settle down in Sydney, for she says that there is the finest colouring here of any place in the world.

You Cant Beat Fate

By Harold de Polo*

A MIDDLE-AGED gentleman, muffled to his ears in a luxurious fur coat, stepped out of a taxi into the whirling snow and haughtily bade the driver follow him with his grip. It was slightly past two in the morning, and the lobby of the exclusive New York hotel into which he went was deserted.

The hotel clerk, however, was at the desk immediately.

"Yes, sir. We have precisely what you wish. Twelve dollars a——"

"You were not asked the price!"

"Pardon, sir."

As the other signed his name on the line indicated the clerk further studied him. The costly fur coat, falling almost to his boot tops, the golden *pince nez*, the cropped Vandyke beard, the penetrating gray eyes, all proclaimed him a man of importance.

"Yes, Mr. Bassett," bowed the clerk.

"I wish to be called at eight," the middle-aged gentleman flung over his shoulder, as he followed the boy with his baggage to the elevator. "Have to make the 'nine' train for Philadelphia. Don't forget!"

Again the hotel clerk bowed most obsequiously—but could he have seen the individual who had registered as Irving J. Bassett, of Buffalo, New York, some five minutes later it is not stretching it to say that he would nearly have been paralyzed with astonishment.

Scrupulously locking the door, after having regally tipped the bell-boy, the prosperous-appearing Mr. Bassett, as he styled himself, allowed a confident and sort of gloating smile to cross his usually severe features. Following this he stood before the mirror of the bureau, unbuttoned his long fur coat, and removed it.

And beneath it, strange to relate, there was no suit of clothes. Indeed, he was garbed in a most strikingly peculiar costume. His shirt was immaculate, his collar was likewise, and the cravat he wore was in excellent taste.

Below the shirt-tails could be seen underwear of pure wool, of a far from reasonable brand, and his socks and shoes were of the finest. If this had been all one might have thought any one of a number of things. That he was an extremely careless individual who had actually forgotten to properly dress, or that his suit might have been stolen, or perhaps that there was a wager of some sort, or an election bet to pay. But, hanging just above his knees, secured by elastics, each leg was apparelled with the bottoms of a pair of trousers, so that, with his overcoat on one would deem him, naturally, fully dressed!

His queer garb, however, did not seem in the least to disconcert him. In fact, it rather pleased him. Carefully—and it might even be termed tenderly—he removed the trousers bottoms, opened his rather elegant valise, and very methodically put them away—into a hidden and secret partition at the bottom. After that he arranged his toilet articles on the dresser, got into his pyjamas, slid between the soft linen sheets, and, clicking off the light, went peacefully off to a sound sleep, with a truly blissful expression on his face.

Next morning, when the telephone rang promptly at eight, to awaken him according to his orders, the middle-aged gentleman, cheerful though he seemed as to face, was again gruff as to voice.

"You're about two minutes late," he complained, and put down the receiver angrily.

* In "Wayside Tales."

Leisurely he took his shower and got into his underwear and socks and shoes, and then put on his immaculate shirt and collar and cravat. Briskly he once more stepped to the instrument on the wall.

"Hello, hello!" he called testily. "What's the matter with this service, anyway? It's eight minutes past eight, and you said you'd have my suit here sharply on the hour! . . . What's that? Well don't do so much apologizing, but send a boy up with the clothes instantly!"

He sat down in a huge and comfortable rocker now, and languidly lit a cigarette. Puffing it, and watching the smoke rings he created, he looked much like the fabled cat waiting at the mouse hole. And in three minutes—or perhaps four—he was rewarded. Again the 'phone rang:

"What? . . . *What suit?* . . . Hang it, man, the suit I gave the boy who showed me my room—a sort of a brownish mixture. Yes, he promised to have it sponged and pressed and to bring it back at eight sharp. Kindly hurry and hunt it up, for I have to catch the nine o'clock train for Philadelphia!"

Once more he hung up, and once more he flopped comfortably down in the arm-chair and studied smoke spirals pleasantly. And once more—this time in perhaps five minutes—the bell tinkled. Now, when he answered it, he had the air of a hunter who was ever and ever more closely and more surely approaching his quarry:

"How's that? . . . The boy is gone—off duty? You can't find any trace of it at your tailoring department? . . . Why—why, hang it," he exploded, his voice rising, "but I tell you that I have to catch that nine train for an important conference in Philadelphia, and that I have nothing else but a dinner-suit with me. I—I— . . . Send me the manager instantly, do you hear—instantly. Something must be done."

In a moment or two he slipped on his *pince nez*, regained his stern and forbidding expression that made him seem like a man of affairs, and stamped heavily up and down the room while he grumbled and muttered.

Presently a discreet and courteous knock sounded on the panel of the door, and he hastened forward and jerked it open.

"The manager, eh?" he snapped. "Well, will you kindly tell me what this means? I must confess that this is my first visit to this particular hotel, but I assure you that I was led to believe it was a responsible one."

And so on, in the same vein.

He paused, breathing heavily, and glared fiercely at the manager. The latter, who had been studying his man with the shrewd eyes of his profession, had undoubtedly come to the same conclusion as had the clerk the night previous regarding the standing of their guest.

"My dear Mr. Bassett," he purred gently, "I can promise you that no one more deeply deploras this unfortunate occurrence than I do, and I can likewise assure you that it is the first time it has happened in this hotel. It is probably some mistake of the boy's, for the tailor has not the slightest remembrance of having received your clothes to press. If you will just be patient while we further look the matter—"

"*Be patient? Further look the matter—*"

The irate Mr. Bassett became positively apoplectic. He purpled, he puffed, he shook with a mighty wrath.

"My good man," he finally managed to get out in a booming voice, "are you endeavouring to have *fun* with me? Did I not tell you that I have to catch that train? Did I not tell you that I have only a dinner-suit with me? Did I—"

"Just a moment, Mr. Bassett, please, I shall try—"

"You shall try?" roared the other. "Man—do something. But you shall suffer for this, don't forget. I shall sue this beastly hotel. I shall inform my business associates and all reputable men of Buffalo, I shall publish it in the papers at my own expense, I shall—"

He said much more, and his gestures and his voice were marvels of superb acting. He threatened numerous suits for damages, he shrewdly mentioned the names of several big business men of Buffalo whom he had taken care to learn made this hostelry their headquarters but were not here now, he dwelt on the gigantic deal that awaited him in Philadelphia, and, lastly, he pleaded and commanded that the manager "do something—do something!"

There is no doubt that the hotel man was impressed—exceedingly impressed. He was sure that he was dealing with a man of great importance, for outside of the other's looks, outside of his palpably expensive fur coat and baggage and other articles, he had so glibly mentioned the names of several big men from his own town. He realized, too, that any notice of the story in the papers would undeniably work a certain amount of harm to the irreproachable name the hotel possessed.

"My dear Mr. Bassett," he said, taking the matter into his own hands, "I shall do my best. I suggest, sir, that in order for you to make your train, or perhaps a slightly later one, we send out now and purchase the best ready-to-wear suit that can be procured under the circumstances. On the next block there is an establishment that—"

"But, dammit," snapped out the other, still in the grip of his rage, "I tell you that my clothes are made by the finest man in Buffalo, the finest man in the world, I claim. I have the reputation, sir, of being a well-dressed man, and for this conference in Philadelphia I—"

"Please, my dear sir," broke in the manager, "allow us to do what we can. I shall send for several suits now, and, of course, we shall ask you to be good enough to accept a sufficient amount to enable you to purchase clothes such as we lost, and we beg you to forget—"

"But, hang it," growled the guest, "I tell you, sir, I'm the best dressed man in Buffalo. I should be. I pay my tailor a hundred and twenty-five for a business suit and—"

The anger of the gentleman, however, gradually wandered under the soothing and expert handling of the hotel man. It is true that he continued with his grumbling, even during the period when a salesman from the select establishment on the next block was deftly assisting him in trying on several suits of clothes. He kept it up, too, after he had chosen a plain blue serge that really was quite presentable. Nor did he completely stop, either, when the manager, at the desk below, handed him a hundred and twenty-five dollars in crisp bills and begged him to kindly remedy the fault of the hotel when he

got back to Buffalo. He switched, however to the bellboy.

"Do you know what you should do to that boy, sir?" he said irately. "You should have him hanged and drawn and quartered! Nothing less—nothing less!"

"I assure you, Mr. Bassett, promised the manager, "that we shall most certainly discharge him. And I likewise assure you, sir, that on your next trip on from Buffalo we hope to have the honour of having you stop with us!"

"You probably shall," conceded the man in the fur coat, as he followed a boy with his grip to the taxi.

Then the gentleman with the *pince nez*, sinking back most comfortably into the soft leather of the taxi seat, watched the driver spring to his place with a happy smile. As the car started he broke into a chuckle—a chuckle of inordinate glee and triumph. But this quickly stopped in a second or two, when the door of the machine was rudely jerked open and a man with a pair of hard blue eyes jumped inside, sat down beside him, and again slammed the door shut.

"So you're Bassett, eh? Irving J. Bassett of Buffalo? I didn't think it would be such a cinch, but I'm admitting luck was certainly playing with me when I happened to be in the hotel lobby and heard the manager mention your name and the place you came from!"

"What — precisely what does this mean?" asked the man in the fur coat, creditably holding his poise.

"None of that, friend, it don't go. I guess you got the swag there in that bag. But, say, if I was goin' to run off with all the jack that belonged to my partner I'm blamed if I'd use my own name."

"But I'm not—"

The gentleman in the costly fur coat did not finish his speech. His brain was a rapid worker, as it had to be in the profession he had chosen. By some weird streak of coincidence, he realized, he had this time chosen the name of a man who had apparently run off with the funds of his business partner. It would do him no good now to profess that he was not Irving J. Bassett, for the detective had already heard him admit that he was.

He might as well go along to the station house. There, anyway, he was doomed. In a few minutes, of course, they would learn the truth, and the game with which he had been working the big hotels of the United States for the past three years would be ruined forever. Ah, well, there

would probably be a jail sentence when the managements prosecuted. He wondered idly how long a term he would get. Then he turned to his captor with a sigh.

"You can't beat fate," he said, thoughtfully—"can you?"

WATER FOR LOCOMOTIVES.

How Supply is picked up in England.

Locomotives are hard drinkers. On the famous non-stop run to Plymouth of the Great Western "Cornish Riviera" express—the longest daily journey of its kind in the world—the engine needs to be refreshed with a modest total of some 40 tons of water while covering the 226 miles between Paddington and North Road.

Such a weight is equal to that of the largest and heaviest dining-car, and it would be a very uneconomical proceeding to haul right through the run a tender capable of holding this vast quantity of "drink." Actually the water storage capacity of the tenders coupled to these engines is about 3,500 gallons.

Thus, in order that the train shall not be compelled to stop specially for water, arrangements must be made to pick up at speed the precious fluid. This is done by providing between the rails those long, shining "ribbons" of water, with the sight of which every long-distance traveller is familiar.

The "track-trough" has a length of just over a quarter of a mile, is about 18in. wide and 6in. deep, and is generally constructed of steel. A perfectly level and fairly straight piece of line must, of course, be selected, as the site, with an abundant supply of good water in the immediate vicinity.

As the engine approaches the trough the driver lets down under the tender a mov-

able "scoop," shaped somewhat like a shovel. The sharp lower edge of this scoop cuts off the "top layer" of the water, and the momentum of the train forces this up through a large vertical pipe with a mushroom head into the tender tank.

Correct Speed.

From 2,000 to 3,000 gallons of water are "picked up" in some 15 or 20 seconds, the exact quantity varying according to the speed of the train. Curiously enough, the greatest quantity is not lifted at the highest speeds, as very fast travelling tends to scatter the water in spray.

The right speed for taking the maximum amount is about forty miles per hour.

An important part of the equipment of the troughs is the large storage tank at the side of the line, with its sensitive ball-valve, which enables the long trough to fill again rapidly after each train has passed over.

Without this arrangement, if two trains were following one another across the trough at a short interval, the engine of the second would have to go thirsty.

These numerous installations of track troughs are the secret of the many non-stop runs of over 100 miles performed daily in Great Britain, numerically without parallel in any other country in the world.

LADY READERS

Will be interested to learn that, commencing with this issue, "The Woman's Corner" becomes a special feature of "Sea, Land & Air." It is now conducted by Miss Mary Marlowe, one of Sydney's leading lady journalists, and contains much of interest to the feminine sex.

FLYING INSTRUCTION

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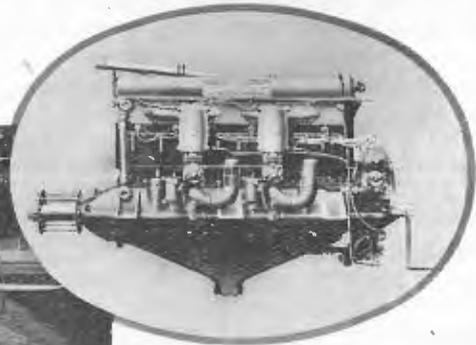
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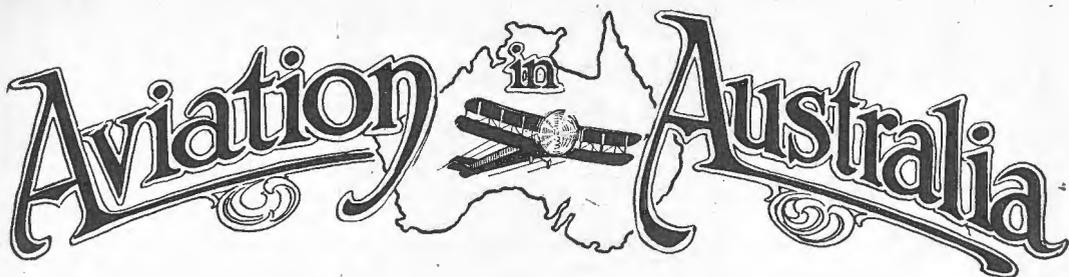
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Export Department, 12 Princes Street, Hanover Square, London, W.I.

Cablegrams: "Subeamoco, London."

Codes used: A.B.C. 5th Edition; Marconi; International; Motor Trade; and Bentley's.

Aviation in Australia



Flying to New Zealand.

IT is announced that Captain G. H. Keat, who possesses a fine record of war service, will shortly undertake a flight across the Tasman Sea, from a point in N.S.W. to Christchurch, in a *Sopwith* plane. The pilot will be Mr. Bruce Ross, formerly a partner of Major Blake, who is now flying round the world. Captain Keat is a native of Victoria.

Medical Service by Air.

In a recent issue the *Inlander*, the magazine published by the Home Missions Board, dealt fully with the need for establishing aerial medical services for the benefit of people who live in outback centres. In these outposts, the article continues, the need for doctors is sometimes desperately urgent, and there is in most cases no chance of getting a medical man to the spot. A call by wireless and a doctor by aeroplane would solve the problem and save many lives. It is proposed to divide the inaccessible portion of the continent into aerial districts, each with headquarters. Upon receipt of an SOS call an aerial doctor and nurse would proceed to where the patient was and administer first aid. The nurse would then remain, or the patient might be brought by aeroplane to where he could receive the best attention. It is hoped to bring these aerial medical services into existence, and to maintain them by voluntary subscriptions from people who may need such services. Already a movement for aerial medical service is afoot in Queensland. A committee has been formed in Brisbane, and the first experiment is to be made at Charleville. The aeroplane has already proved to be of great value in cases of sickness in the remote districts of the Commonwealth.

Air Mail Services.

The Minister for Defence, Mr. Massy Greene, explained recently that the latest hitch in commencing the aerial mail service between Adelaide-Sydney-Brisbane was due to a dispute on technical points regarding the establishment of an aerodrome at Ballina. The matter was, however, soon adjusted, and, all going well, the service will be in operation before the end of the year.

Previously the Minister had explained that, while the whole of the routes had been carefully surveyed and prepared to a degree that should entirely obviate any danger to life or limb of the pilot or passengers, the cables from England recently had foreshadowed delay in commencing the service. The recent engineering strike had considerably hampered Messrs. Vickers, Ltd., and Handasyde in manufacturing the planes. Strong representations were being made by the Prime Minister, through the High Commissioner, to induce Messrs. Vickers to give delivery of the aeroplanes in accordance with the terms of their contract, and it was hoped that these representations would have the desired effect. It was most unfortunate that trade disagreements in England should have such an adverse effect on a new Australian industry, that the Government is striving in every way to foster.

"The Western Australian service between Geraldton and Derby (1,200 miles) had been running for some months now, with almost 100 per cent. efficiency. The facilities as regards carriage of mails were being increasingly utilized week by week. Passenger and freight traffic between Geraldton and Carnarvon had so expanded that the contractors are considering the purchase of considerably larger machines for operating over that stage."



Night Flying in N.S.W.

LIEUTENANT BUTLER'S second night flight over Sydney was easily the most spectacular event of its kind that the public of N.S.W. have yet been treated to.

The conditions were favourable for the flight, and the fact that wide publicity had been given to the exploit, coupled with the prospect of finding a prize coupon out of the 20,000 which were distributed by the airman and his companion on behalf of one of Sydney's leading firms, added an



Lieutenant Butler.

additional spice of interest. Viewed from the ground, the aeroplane presented a most picturesque spectacle, and when at intervals red and white Verrey lights were discharged a striking effect resulted.

The aviators' own impressions of the flight were that it was a most exhilarating experience, and the spectacle presented by the countless thousands of twinkling lights which greeted their vision on every hand was a most unique one.

The course was from the Mascot Aerodrome, which was left shortly after 7 p.m., over the city, thence across the Harbour

to the northern suburbs, and back towards the aerodrome. The flight lasted over an hour, and in that time the plane circled over practically every corner of the metropolis. Over the Spit and Taronga Park the aviators struck bumpy patches, the machine pitching and tossing about a great deal.

The watchers on the city roof-tops first saw the aeroplane, like a hurricane lantern swung in the clouds, when it was swooping over the western suburbs. It slid with startling speed over the rim of the sky, and the whirring of the cylinders could be heard for a moment as it headed over the Harbour for the water suburbs. Here it dallied for almost a quarter of an hour, tumbling all over the sky, and discharging red and white Verrey lights at intervals. From far down on Port Jackson came the deep, husky cock-a-doodle-does of the ferry boats, as it spun round, and drummed over the city itself.

With Lieutenant Butler in the aeroplane was Mr. P. H. Vyner, of the Aircraft & Engineering Company, who took several photographs of Sydney by night, and made observations of the temperature and humidity of the atmosphere.

Their altitude varied from 1,000 feet to 4,000 feet. Temperatures taken were: Ground, 52deg.; 1,000 feet, 45deg.; 2,500 feet, 50deg.; 4,000 feet, 45deg.



A flashlight photograph of Lieutenant Butler's 'plane when about to take off on the recent night flight over Sydney.

Aerodynamic Laboratory.

The new aerodynamic laboratory in Melbourne is rapidly nearing completion. The laboratory will house the aviation material recently purchased in England. The most important part of the equipment is a wind tunnel, in which sections of aeroplane wings and struts may be subjected to a blast of air generated by a motor-driven fan. The designers of aircraft rely on such experiments to obtain data for their calculations. This wind tunnel will be the only one of its kind in Australia, and will be most useful to the Defence Department and to private aviation firms. In addition, many types of aviation engines have been secured for experimental work, together with a large assortment of plans and diagrams for demonstrating the construction and working of the various kinds of aeroplanes.

"AVROS" FOR MELBOURNE.

The two *Avro* planes constructed by Australian Aircraft & Engineering Company for the Defence Department, were flown to Melbourne on July 20 by Major Barnwell and Flight-Commander Nigel Love. Both pilots reported a good trip, the planes behaving excellently.

SIR KEITH SMITH FOR CHINA.

Sir Keith Smith, who has been spending a holiday on his father's station property at Mutooroo, South Australia, expects to

arrive in Sydney about September 7. On September 13 he proposes to sail for China. Sir Keith's many friends will wish him a pleasant voyage, and trust that the harrowing experiences of the past few months may in the near future be obliterated from his mind.

Department of Defence,
Melbourne, 27th June, 1922.

Applications for two Positions as **AIRCRAFT INSPECTORS** will be received up to 31st JULY, 1922, by the Secretary, Department of Defence, Melbourne.

Appointments in the first instance will be temporary, with pay at the rate of £400, inclusive of all allowances except travelling.

Full particulars appear in the "Commonwealth Gazette," which may be seen at all Post Offices.

T. TRUMBLE,
Secretary.



Macdonald River.

A tributary of the Hawkesbury. Few rivers in Australia boast such great scenic beauties as the Hawkesbury, and it is little wonder that in the summer season it forms one of New South Wales' most favoured picnic resorts.

INFLUENZA

Prevalent in Sydney

HOW TO COMBAT THE EPIDEMIC

BY A QUALIFIED CHEMIST.

An epidemic of influenza is sweeping over Australia. At present it is not of a serious type, though it is severe. There is no need for alarm; but there is urgent need for preventive measures being adopted by everyone to minimise the risk of infection; for, if prophylactics are not used, there is no telling whether or not the deadly pneumonic type of influenza will scourge Australia as it did a couple of years ago. At that time it was proved beyond all doubt that one of the most effective means of combating the terrible pandemic was the occasional taking of Heenzo, and in a number of establishments, where staffs were attacked, the only members to escape infection were those who used Heenzo, either in its liquid form or in the medicated lozenges known as Heenzo Cough Diamond Jubes. That "prevention is better than cure" applies to no ailment more aptly than to influenza, for when once infection occurs, and the germs enter the blood stream, they must run their course. Though the seriousness of their effect may be reduced by the use of Heenzo, wise people will use this excellent preparation before infection. As most people know, Heenzo has something more than its prophylactic and curative properties to commend it, as with two shillings worth of it anyone can, in a few moments, prepare a family supply of mixture—as much as would cost £1 or more for ordinary ready-made mixtures. Heenzo and Heenzo Cough Diamond Jubes are stocked by all leading chemists and stores.

To build up the system after an attack of influenza or other
debilitating illness take

HEAN'S TONIC NERVE NUTS

THE FINEST TONIC EVER.



New P. & O. Liner.

THE new P. & O. liner *Moldavia* is nearing completion in England, and has been placed in the programme of the P. & O. Company for the Australian mail service. The *Moldavia* is scheduled to leave London on her maiden voyage on October 12, and is to sail from Sydney on the return voyage on December 12. According to the new programme, a stay of 24 days

the necessary facilities for rapid bunkering. The main tank has a capacity of 10,000 tons. It is 116 feet in diameter and 40 feet high. Originally the *British Fern* was intended for a cargo vessel, but owing to the large demand for oil tank steamers during the war she was converted whilst being built, and what would have been cargo holds were made to serve as oil-drums. The *British Fern* was built in 1917 for the Admiralty, and was not taken over



The sailing vessel "France," wrecked near Noumea.

is to be made in Sydney by P. & O. liners instead of the 16 days allowed under present conditions.

* * * Persian Oil Shipment.

From the Persian Gulf with the first oil cargo in bulk the steamer *British Fern* reached Sydney recently. She proceeded to the new depot in Berry's Bay, recently established by the Anglo-Persian Oil Company, to discharge. The depot affords all

by her present owners until the termination of the war. Her gross tonnage is 5837. After leaving Abadan, Persia, with Captain Buck in charge, the *British Fern* made only one stop before she put in at Melbourne. That was at Colombo to replenish her bunkers.

* * * "Oorama" Arrives.

The *Oorama*, the latest addition to the fleet of the Adelaide Steamship Co., Ltd.,

arrived in Sydney a few weeks ago.

The *Oorama* is a new vessel, built only last year, and was purchased in England. She is a vessel of 1,053 tons gross register, and arrived in Adelaide from the Clyde on March 10, and this is her first voyage to Sydney. The vessel has a cargo of gypsum from Port Le Hunte. For the present the vessel will run with gypsum from Port Le Hunte to Sydney, and then proceed to Port Kembla to load coal for the return trip to Adelaide.

* * *

Sailing Vessels Lost.

Details of the loss of the French five-masted barque *France* show that all hands were saved, and no one was injured in the wreck.

According to the statement of the captain, the *France* went ashore on a reef near Ourail Pass, on the west coast, and 50 miles from Noumea, at 9 o'clock on the night of July 12, during thick weather. The captain believed the vessel was 15 miles from the reefs. The ship rolled heavily during the night. The sails were lowered, and sounding showed that four out of the seven holds were full of water.

The crew abandoned her at daylight on July 13 landing at Lafoa a few days later.

The ship was left standing on an even keel, and heavy seas breaking over her. It is considered she will be a total loss. The *France* was being towed from Thio, on the east coast, by the steamer *Tao*, but lost the tow of the latter eight days ago. She was on her voyage to Pouembout, on the west coast of New Caledonia, to load 7,500 tons of nickel ore for Europe. The ship was in ballast trim at the time of the disaster.

* * *

"Southgate" on Fire.

The steamer *Southgate*, while on a voyage from Calcutta to South America with a cargo of gunny bags, reported by wireless that she was in distress. The first vessel to intercept the call was the *Ruapehu*, and for a time grave fears were entertained as to the *Southgate's* safety, but some hours after the first call was received another message was picked up indicating that the fire which was burning in the cargo and bunkers when the first call was made was later got under control.

Pacific Service.

A French company has purchased the four-masted two-funnelled steamer *Nile*, formerly owned by the P. & O. Company. It is proposed to utilise the vessel in a new service which is being established between San Francisco and Papeete. The *Nile* has for some time been trading between San Francisco and China, and it was proposed to start her in the new running last month.

* * *

Wreckage at Lord Howe Island.

The steamer *Makambo*, of the Burns, Philp Line, reported on her arrival in Sydney on July 15 that a quantity of wreckage had been cast up on Lord Howe Island. The wreckage included the rib of a sailing vessel. It was 15 feet long, and had not been long in the water.

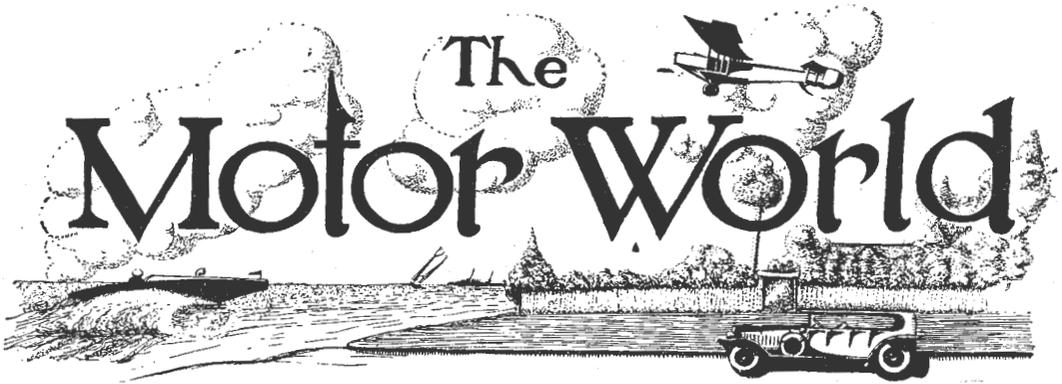
The general opinion in shipping circles is that the wreckage is part of the American schooner *Helen B. Sterling*, which was abandoned in a sinking condition off Norfolk Island in January last. The flagship *Melbourne*, it will be remembered, rescued the crew.

Further wreckage, apparently from the same vessel, was reported by the A.U.S.N. steamer *Suva* on Middleton Reef a few weeks ago.

* * *

Shipping Competition.

Judging by reports in the daily Press, there is likely to be keen competition on the part of shipping companies for the loading which is expected to be available at German ports in the near future. The German-Australian Steamship Company of Hamburg has announced its intention of re-entering the Australian trade, and the Commonwealth and Dominion Line, which at present conducts regular three-weekly sailings both from London and New York to Australia, will be another competitor. The latter company is owned by the Cunard Line, one of the most powerful of shipping groups. The *Port Curtis*, the first steamer of the new service, is expected to arrive in Sydney about August 12.



By "SPARKING PLUG"

Motor 'Buses in the Limelight.

IT is doubtful whether the motoring fraternity could wish for a greater triumph than that scored by motor 'buses in Newcastle. So popular have they become that the travelling public refuse to patronize their own tramways, which report a loss of £40,000 a year. This deficit, however, has been promptly allocated to the Sydney tramways, which are, therefore, compelled to continue the increased fares to wipe out the Newcastle deficit.

Naturally Government departments are not altogether pleased at the success of the 'buses, and from time to time the latter gets a shot across the bows as a reminder that there might be something doing if inroads into train and tram traffic become too serious.

The latest suggestion is that a board should be appointed to administer and control activities of motor 'buses. The proposal, if carried out, is capable of achieving much good. But will the board's administration be actuated by friendliness or hostility?

The public—whether the Railway Commissioners like it or not—has taken the motor 'bus to its bosom, and prefers standing in a crowded 'bus instead of patronising one of Mr. Frazer's cumbersome juggernauts.

Anyone standing at the Darlinghurst section in Oxford Street may see Railway trams repeatedly turned down in favour of the 'buses, even when the former arrives on the scene first.

A trip to the Railway in each quickly explains the reason why. If you have

barely ten minutes in which to catch a train the 'bus will get you there for it—chiefly because of its speedy running and no fixed stopping places. On the other hand, the tram invariably saunters down Oxford Street as if to say: "Plenty more trains where that one comes from." Meanwhile it slows down at every second corner to drop and pick up imaginary passengers.

It is no wonder that all the eastern suburbs 'buses have won popularity so rapidly. The trams appear to have no desire to cater for or satisfy passengers' wishes—the 'buses go out of their way to see that clients do not miss their trains if there is a reasonable hope of getting them.

Perhaps the most disquieting suggestion made respecting the appointment of a board is that the Government might ask the 'buses to run to a time-table.

If it means only as regards time of departure from the journeys' ends—alright. But if it means running to the ticks of Bundy clocks punctuating the route here and there the Government can look forward to raising a hornet's nest, which will convey in no uncertain way the public's opinion of Bundy clock delays.

The Government should regard motor 'buses as allies in the important transit task confronting it each day in Sydney. Instead of listening to complaints by suburban councils or growls by the Railway Commissioners, the Government has every reason to congratulate private enterprise on the efficient manner in which it has borne, and is bearing, the transport re-

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sponsibility, under which past Governments have been constantly groaning.

Adelaide to Darwin and Back.

The party of six motorists, headed by Mr. T. McCallum, M.L.C. (South Australia), who left Adelaide in three *Dort* cars on May 9 to examine the class of country through which the North-South Railway will pass, arrived in Adelaide from Darwin on Saturday, July 15, having covered over 6,000 miles. On the return journey the party travelled via Queensland, New South Wales and Victoria.

Sydney to Brisbane Contest.

The Roads and Tours Committee of the R.A.C.A. has approved of most of the suggestions made by the Royal Automobile Club of Queensland respecting the interstate reliability touring contest from Sydney to Brisbane.

The route adopted on the last occasion, with slight exceptions, will be used this year. The contest will start from Sydney on September 18 and finish in Brisbane on September 22.

The R.A.C.A. of Queensland intends organizing a motor gymkana at the Brisbane Show Grounds on Saturday, September 23. Interstate competitors in the reliability contest will be invited to take part.

Victorian 1,000-Miles Contest.

Wireless is finding its way into many avenues hitherto undreamt of as fields of exploit. Whilst the old-fashioned system of timing was employed last year for the Victorian 1,000-miles trial, it is the intention of the R.A.C.A. of Victoria to have the several hill-climbs in this year's competition timed by wireless telegraphy. Owing to the winding nature of one or more of the grades, it is impossible to view the contest from start to finish from a given point, and, therefore, the officials are never certain that the road is clear, because a car may at any time be stalled on the grade. When that occurs, as it has done, cars following, through the possible narrowness of the road, may have to slow down materially, which would adversely affect the time registered in the ascent.

It has been found necessary to modify the distance originally set down for one of the day's run in the 1,000-miles reli-

ability trial in November next. The section from Mallacoota to Omeo, which is lengthy, is, in addition, rough, and if wet would make driving comparatively slow. Hence, on the return from Mallacoota, the next day's run will end at Bruthen, and it is then proposed to fill in another day by returning to Bairnsdale, and, after holding a climb on a perfectly straight, good, and even grade en route, where the cars can be extended to their limit, to then make a circular run from Bairnsdale generally along the Mitchell River, the course being selected for the club by the shire engineer, Mr. E. J. Wilson. It is 38 miles in length, and will prove a very interesting detour, with good roads and a fair sprinkling of hills.

Reckless Drivers.

The subject of motor accidents formed an interesting discussion recently amongst a party of motorists, the consensus of opinion being that the motoring fraternity frequently were held responsible for downright callous actions of isolated and irresponsible owners, or, perhaps, more to the point, "borrowers," of cars.

Analysing the subject subsequently, one of Sydney's leading authorities summed up as follows:—

"Contributory factors to a large number of accidents in city and country may be classified thus:

- (1) High speed.
- (2) Inattention.
- (3) Poor judgment.
- (4) Ignorance of traffic rules.
- (5) Blinding lights.

Taking the points in the order mentioned, let us consider first, "high speed," which is undoubtedly one of the primary causes of serious accidents. Many of the modern cars are capable of 60-80 miles per hour, and while it may be very satisfactory to the owner to know that he has a car which can "pass anything on the road," the reserve power with which the car is furnished should not be used except under the most favourable conditions, such as a long run through open country with few houses, fine roads and little traffic. A man may be excused for setting a fast pace over a beautiful road, providing he doesn't endanger anyone besides himself. In wet weather, or when there is any great

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amount of traffic, high speed driving is criminal, and nothing else. There are thousands of drivers who have been driving for years and have never had an accident, and there are others who have been driving for years and have been in numerous accidents. "Partly luck, and partly good judgment," you may say, and no doubt luck has something to do with it, but you will find the men with the fewest accidents are those who are conservative in their driving, who drive rapidly when the coast is clear and carefully, yet without timidity, when in heavy traffic or wet weather; in short, the men who are ready for an emergency and who know what to do if anything unexpected happens.

The inattentive driver stops his car suddenly in traffic, without warning, turns right or left without signalling, gets a caution from the traffic officer for not keeping his eyes open; bumps into somebody's fender, and generally makes a nuisance of himself to other drivers as well as to pedestrians. He runs over a child and doesn't even know it, because he was not looking where he was going; he smashes into somebody's tail-end because he was not looking, and then blames the other fellow for stopping so suddenly. This type of driver is always "taking a chance" on the road without any consideration for anyone else.

Annihilating Distance.

Messrs. Archie Munro and H. G. Hobbs spent an interesting four weeks last month linking up outlying towns in Southern New South Wales.

The object of their tour was to demonstrate and test the 12/18-h.p. *Vermorel* chassis, and particularly the special springing, as fitted to *Vermorels*. The chassis was stripped, and a temporary seat installed.

Many of the back country tracks—by no means roads—were driven over at an average speed of 30 m.p.h., and 100 miles per day. On many days only 10 or 12 miles was negotiated, as clients had to be visited en route. It was found unnecessary to use a spanner, even to change a spare wheel or tyre. Not a single puncture occurred in the Dunlop tyres.

The model used was one of the latest type, and the much lower third gear was found to be a vast improvement on those of earlier models. Country critics are critical, but the car design met with general approval. The carburettor was not adjusted for economy, but 24 m.p.h. was averaged.

As a test the result was most satisfactory, especially in view of the fact that no attempt was made to spare the car.

Why Not Shoot Motorists at Dawn?

It is difficult nowadays to open the daily newspapers without finding some exhibition of spleen directed against the motor-ing fraternity.

Whatever the actuating motive—probably envy in a number of cases—motorists need never expect any sympathy from many sections of the public in any matter of conflicting issues.

Whether they deserve sympathy in the particular case in point is entirely beyond the question. The ethics of the matter do not concern the public—the bulk of which is always eager and ready to punch a motorist's head wherever it chances to show itself.

No doubt, if the "vendetta" continues long enough, the "motor hogs" may yet graduate to that happy stage where they may earn a martyr's crown by being shot, drawn and quartered in the market square presumably on the altar of public cussedness.

A few years ago the Holman Government imposed a special and unjust tax on motorists to raise revenue, and, incidentally, to exploit public sentiment, which the then Premier knew was hostile to motor-ism and all its works.

The last Labour Government and the present National Government both specialized in boasting of a new-fangled virtue—the drastic curtailment of Government motor cars—a subject always referred to in the same spirit that the Press employs when writing up plague or Spanish influenza.

Suburban aldermen are the latest to heave a brick at the much-abused and much-maligned motorist.

Out in the western suburbs the complaint is made that motors are tearing up the roads, whilst paying nothing for main-

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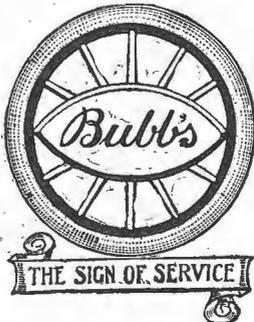
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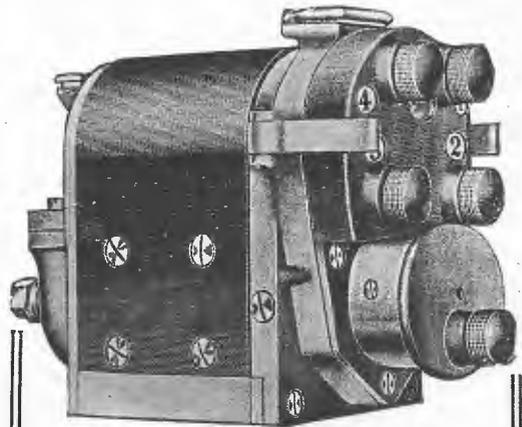


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tenance expenditure. The inference is that still another tax should be passed on to the owners of cars to provide funds for the local councils.

The argument is a lop-sided one. Conceding that the motor vehicle helps to shorten the life of any roadway it uses, so also do other vehicles not propelled by motor power. Heavy drays and waggons, for instance, cause infinitely more damage than cars, so if motorists are going to be greeted with another tax let all sections, directly or indirectly, using the road put in their cut without discrimination.

The 'buses, of course, are said to be the chief delinquents, but as the 'bus services to many districts are supplying the wants of a tramway service they have succeeded in enhancing the values of suburban properties, which, in turn, pay higher taxes to the local governing bodies.

In any case, the people should welcome motorists in their midst instead of singling them out for abuse and special taxation, as many are inclined to do at present.

MOTORGRAMS.

Motor-Horn Solo.

When a motorist cut Coogee way pressed his electric starter switch on a recent Sunday morning his motor refused to buzz. Mechanical investigations proved that there was no current in the accumulators. Whilst lamenting this mysterious catastrophe, the neighbour hopped on to the fence and politely requested that in future the electric horn be detached at night. He declared that the incessant noise from it during the night had kept him awake till early morn. This information prompted the motorist to examine the motor horn switch, when he discovered that a screwdriver had tumbled down and short-circuited it after being locked in the garage on the previous afternoon.

New Use for Birth Certificate.

It was at the Spit one Sunday that a traffic policeman demanded the exhibition of a driver's license. The driver, a careful man, who, in company with his young wife, had ventured on to the open road in his car for his first time, deftly produced a neatly-folded document. The constable smiled, and, handing it back, said: "That's the registration; bring the license

next time." On his return from Manly the same constable was on duty. The usual demand was made, and another paper was produced. Good-naturedly the traffic cop again smiled broadly as he returned the crisp document. On the following day the wife discovered why the uniformed gentleman laughed at their expense. The registration certificate was that of the birth of their child; the licence bore the signature of the clergyman who officiated, etc.

115 Miles Per Hour.

Tommy Milton, the crack American motorist, put up a fine performance on April 2, on the Los Angeles speedway. Driving a *Durant Special*, he won the 50 miles International race, and averaged 115.2 miles per hour, from ten of the world's finest drivers. Milton's time supplanted the former mark of 112 miles per hour, held by Eddie Hearne. He completed the distance in 25min. 1.92sec., and finished two miles ahead of Jimmy Murphy in a *Dusenbergs*.

For Ladies Only.

.. The practice of putting little cabinets for carrying gloves and other small articles in the tonneau compartment is very convenient, and appreciated by the lady who drives (says the *M.T.A. Journal*).

It adds that one car manufacturer has recently installed a robe-carrying compartment behind the rear seat, which has been much appreciated by the owners of this particular make. The robe is kept free from dust in this way, and all motorists know what that means, as a robe which is continually carried over the robe rail at all seasons of the year is likely to be far from clean when it is necessary to use it during a spell of chilly weather.

Motor-Boating.

Mr. F. Sargent is the new owner of Mr. C. F. Norris's motor speed boat *Sirron*. It is the ambition of Mr. Norris to have a faster vessel built in time for next season's racing.

The Motor Yacht Club intends holding a dance, card party and jazz competition on August 5 and the annual ball on August 24. A dance and card party is also set down for September 2.

Have You a Good Memory?

Yes, you have. For instance, whether you know it or not, here are some of the things you can do yourself:—

YOU CAN remember the contents of every book you read, or every speech you hear.

YOU CAN remember the name, initials, address, occupation, and 'phone number of everyone you meet.

YOU CAN remember appointments, price lists, statistics, diagrams, plans, numbers, folio pages, quotations, etc.

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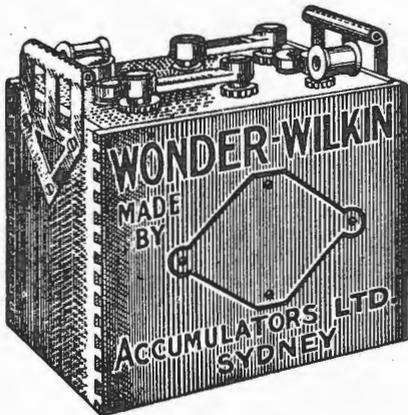
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Mr. V. H. Evans, who won the motor speed boat championship with the *Walaby* a few years back, has severed connection with A. V. Turner & Co., and has set up business on his own account.

Personal.

Mr. Roy Sandford, managing director of Roy W. Sandford, Limited, has returned to Sydney, after a spell in the Blue Mountains, to resume control of his business.

Mr. Claude McIntosh, of McIntosh & Sons, Ltd., is at present enjoying the peace and quiet of the blue Pacific, en route to America, where he proposes engaging in a number of business deals.

Mr. P. A. McIntosh, brother of Claude, will guide the destinies of the motor-boat *Kangaroo* during his brother's absence in America. "P.A." is an enthusiast on the water—the salt water—having also under his charge the *Pam* and *Pamci*, both of which vessels derive their names from the initials of their owner. During the past season "P.A." secured two firsts, a second, and five thirds. He has also achieved distinction on the road, having recently won the R.A.C.A.'s top-gear flexibility in a *Buick* car. He also holds an outright victory in the first interstate reliability touring contest from Sydney to Brisbane.

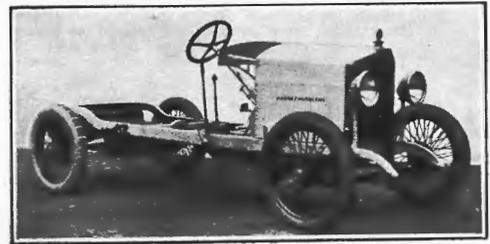
THE "SMITH" BEZEL-OPERATED SWITCH.

An entirely novel type of switchboard has been designed for use with the "Smith" Lighting System. In appearance and efficiency nothing quite like it is to be found on the market. It is an enormous improvement on anything hitherto offered, both for high-class quality and attractive appearance. The "Smith" switchboard is circular, and exactly matches the "Smith" speedometer and the "Smith" motor clocks. The switching operations are performed by rotating the knurled bezel of the instrument, and the combinations "All Off," "Side," "Head," and "All On" appearing in succession at the top of the switch dial as the bezel is turned. A high-class ammeter is mounted in the centre of the dial to indicate the charging current

and correct working of the system, and the terminals are neatly arranged at the back. They are clearly marked and easy to connect. It is fitted to the dashboard by means of the patented "Smith" spring, no screws being required. It is indeed an acquisition to any fine car.

NEW SCAT MODELS.

The latest *Scat* models, which are now on hand ready for immediate delivery, are beautiful examples of what the Italian automobile engineer can produce in the way of rugged strength, cleanness of design, and extreme accessibility. The last-



New 20-30 Speed Model "Scat" Chassis.

mentioned attribute, although seldom attained, is one of the most important points in car design. In the *Scat* accessibility has been made of special importance, especially in the 18-h.p. chassis.

Early in July a special speed model, fitted with a four-cylinder engine, 85 x 125 stroke, was landed, and the manufacturers guarantee that it will exceed seventy miles an hour easily on the road.

In addition to their other models, the *Scat* Company is now producing a new *Tipo O* 12-h.p. car. This four-seated car will do 35 miles per gallon, and is capable of a speed of 45 miles an hour. A number of these will be landing shortly, and the first shipment is nearly booked up. The engine is four-cylinder, 67 x 160 stroke, and has been designed specially to give great economy in fuel, and at the same time a good road performance. The price of the chassis will be £400, and the complete four-seater car £520.

A special chassis, fitted with pointed white metal radiators, has recently come forward, and is a magnificent example of automobile engineering, being specially designed to carry the heaviest types of

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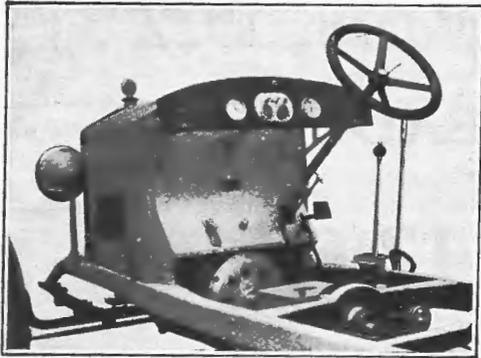
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bodies with ease. Their top gear hill-climbing ability is remarkable; in fact, they will climb any ordinary main road hill, such as Woolcott Street, Darlinghurst, on top gear. An owner of one of these chassis has just returned from a trip to Jenolan Caves, and on the journey there and back he did not use any gear lower than third, both Lapstone and Whipcord being negotiated easily on third speed. The chassis is not low-geared, as it is capable of over sixty miles an hour. The specifications of this fine car, which will no doubt prove of interest, are as follows:—



Dashboard of 20-30 H.P. Speed Model "Scat."

Engine: 4-cylinder, 100m.m. bore, 150 m.m. stroke, Marelli H.T. magneto, horizontal Zenith carburettor, forced lubrication through hollow crankshaft.

Clutch: Single plate, dry, faced with ferodo.

Gearbox: 4 speeds and reverse; gear ratio on top 3.6.

Rear axle: Fully enclosed in pressed steel casing, torque tube taking all reaction of motor and brake, and also driving push. The rear springs are thereby relieved of all strains other than their proper duty of carrying the weight of car. This arrangement gives a most beautiful suspension; in fact, there is no other car which rides better than the 30-h.p. *Scat*, and very few which are its equal.

The two greatest features of this fine chassis are its extreme accessibility and the great flexibility of the engine on top gear.

OLD IDEAS AND NEW.

Age and Youth were discussing that never-to-be-settled question: Whether or not the habits of the past generation were preferable to those of to-day.

"In my day," stated Age severely, "there was none of this feverish rushing about from place to place in motor cars."

Youth smiled dreamily.

"True enough," he agreed. "Yours was a conservative era in more ways than one. Speed was frowned upon. Physicians were especially glad when travelling to the bedside of a dangerously ill patient, to know that old Dobbin could go no faster than eight miles an hour. It was particularly comforting to the travelling salesman, caught by a rainstorm in an open buggy, to realise that he would be wet through and through long before he could reach shelter for himself and his horse."

"Don't be sarcastic," advised Age coldly. "Sarcasm is the refuge of feeble minds."

"Such as those of Juvenal, Cervantes and Voltaire," said Youth musingly.

"Are we discussing literature," demanded age wrathfully, "or are we talking about motor cars?"

"We were discussing motor cars," stated youth. "That is, until you changed the subject."

Age scowled at his young companion.

"Furthermore," he remarked accusingly, "the motor car, by making walking unnecessary, is an unhealthful factor in the life of the community."

Youth laughed softly.

"It is detrimental to health," he agreed, "to spend hours driving in the open air. It is physically harmful to leave the smoky, dust-laden atmosphere of the city each day for a jaunt along country roads. It is unhealthy in summertime to motor to the seashore or the mountains."

"Stop" demanded age. "No more of your sarcasm. Granting that the motor car is a good thing, let's talk about expense. I have you there; I'm sure of it. Who but a rich man can support one of these vehicles?"

Youth smiled.

"For the price you 'old-timers' used to pay for a horse and carriage, we of the younger generation can buy a motor car. Furthermore, our year-round operating cost will compare very favourably with the

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expense involved in satisfying Dobbin's appetite."

Age shook his head sceptically.

"I'm still unconvinced," he maintained stoutly.

Youth laughed.

"That's what the man shouted while he was running away from the ghost," he remarked ironically, turning and walking away.

Fifteen minutes later, while repassing the door of the room where he had left Age. Youth heard a voice at the telephone.

"Is this Major 800? Can you—er—send a car salesman around to see me this afternoon? Don't let my nephew, Youth, know about this; he'll think he's responsible for my decision—the conceited young whipper-snapper"

* * *

CRANKED CAR IN GEAR.

Mr. Alexander McWilliam, one of the chief mechanics employed on the Mount Edgecombe Sugar Estate, South Africa, was starting a motor car at Mount Edgecombe with the cranking handle, and failed to notice that the car was still in gear. With the starting of the engine the car jumped forward, and Mr. McWilliam was run over and killed.

RACE FOR LADY DRIVERS.

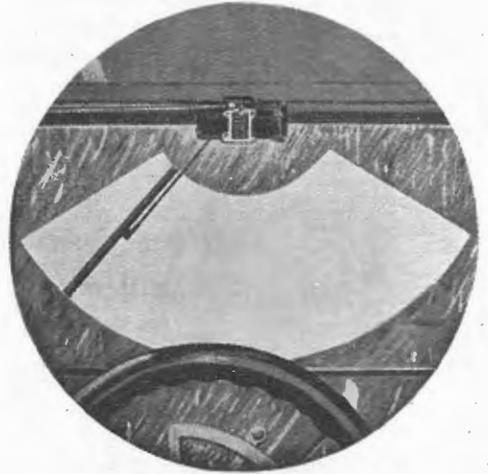
A letter from Mr. Harry Ferguson in an Irish journal puts forward a proposed ladies' road race in Ireland this year. It is suggested that only standard cars, carrying full equipment, should be raced, and entrants could have the option of driving either their own or their friends' cars. Any type of car could be entered, and handicapped according to its capabilities. The race, on a circular course, could be limited, if necessary to one lap of fifteen miles.

AUTOMATIC WINDSCREEN CLEANER.

A Long-Felt Need.

The motorist has known perhaps no more crying need during the past few years than a device for automatically cleaning the windscreen of his car in order

that he might have a clear vision of what lay ahead at all times. One has to actually experience the difficulty and danger of sitting behind the steering wheel of a car when the windscreen is spotted with rain drops or clouded in moisture from other causes and attempt to negotiate crowded streets or dark roads. To curse the elements, either openly or under the breath, serves no good purpose, and every man who has been so situated—which, of course, means every car driver—must have longed for the day when man's inventive



New Automatic Windscreen Cleaner.

genius would come to his rescue. Happily that day has now arrived, and the Mayo-Skinner automatic windscreen cleaner, illustrated herewith, will do all that is required in the way of keeping a clear field of vision ahead at all times, and, what is more, will do it economically and uninterruptedly. A five years' guarantee accompanies the device, the initial cost of which is extremely low. It can be fitted to any car in a few minutes, and, being worked by suction from the engine, it will always operate when the engine is running—the simple turning of a switch being all that is required to start it into action.

Mr. R. N. Bubb, of Wentworth Avenue, Sydney, who stocks the windscreen cleaner, reports a very heavy demand. "To see it work is to buy it, is my experience of how motorists regard it," said Mr. Bubb.

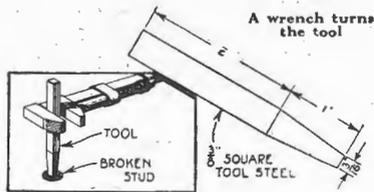
JUNIOR MECHANICS SECTION

In order to keep this section as bright and up-to-date as possible we seek the co-operation of our readers. By contributing simple constructional and experimental items—written in non-technical language that will occupy space varying from a small paragraph to a full page or more—accompanied by diagrams and illustrations, readers will materially assist. All contributions will receive our most careful consideration and, if accepted, will be paid for on publication.—Ed.

REMOVING RUSTED SCREWS.

WE are often confronted with the problem of removing broken screws, studs, or bolts, the heads of which have been twisted off or, as sometimes happens, sawed off. This is often a difficult task, especially when the threads are rusted from years of service. The screw may also be in a difficult position to get at.

I have in mind an experience which proved the practicability of the little tool shown in the illustration. A $\frac{3}{4}$ -in. stud had been twisted off the steam chest of a



large engine and was rusted in place. After the engineer had tried in vain to back it out with a punch I was called in. All I did was to drill a $\frac{1}{4}$ -in. hole in the centre of the stud about $\frac{3}{4}$ -in. deep, drive in the tool and back out the screw with a heavy wrench.

The tool is made from a hardened tool steel bit. It is advisable to make one $\frac{5}{16}$ -in. square and another $\frac{3}{8}$ -in. square. If the tool works loose it can easily be driven in tighter after each pull on the wrench.

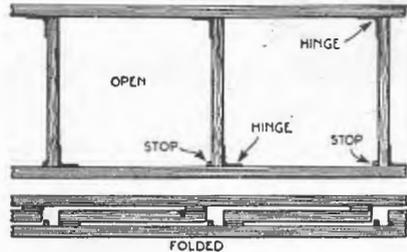
"Popular Science."

HINGED STEPS MAKE A FOLDING LADDER.

A small ladder for indoor work that folds into a flat bundle can be made as follows: Procure two pieces of stout board 4 inches wide for the sides. The steps are

15 inches long and 4 inches wide. Set the steps between the side boards a trifle farther apart than the length of the step.

Procure two wide hinges for each step and hinge the steps to the sides as shown. Place the hinges on one side of the upper surface of the steps and the hinges on the



A Ladder with Folding Steps So That It Can Be Stored in a Small Place

other side below them. A strip of metal or wood should be driven into the side below the steps that are hinged on top.

The ladder folds as indicated. This is done by pushing one side ahead of the other until they are as near together as possible with the steps between them. In this way the ladder can be put away in places where one of the rigid kind would not enter.

"Illustrated World."

COMFORTABLE CAMP BUNKS MADE FROM SACKS AND SAPLINGS.

A simple but comfortable camp bunk may be made from two sacks and a few

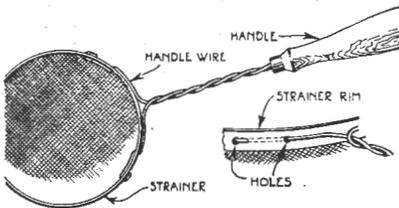


saplings. Two rails are provided, 2 feet longer than the sacks, and slipped inside them and through slits at the bottom corners. Two stout forked sticks are sunk into the ground, a little more than the length of the sacks apart. Then two short saplings are leaned at an angle into the forks, and the rails are dropped across these slanting sticks.

"Popular Science."

ATTACHING HANDLE ON STRAINER WITHOUT SOLDER.

The handle of a strainer broke off, and as no soldering implements were at hand I repaired the strainer by punching four



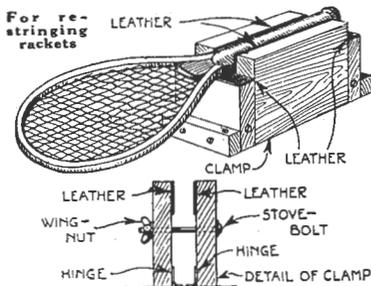
A Repair Made on a Strainer Handle Without the Use of Solder

holes in the rim, as shown, untwisting a few turns of the wire handle and fastening the ends into the holes. This made a more substantial repair than if the handle had been soldered to the rim.

"Illustrated World."

WISE FOR TENNIS RACQUETS.

For holding tennis racquets that are to be restrung I find that the home-made vise shown in the accompanying illustration is as satisfactory as any I have ever used.

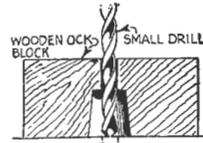


The wooden vise jaws are hinged to the bench and drawn together with a stovebolt and wingnut. Leather facings are glued on to protect the racquet handle from injury.

"Popular Science."

PREVENTING BREAKAGE OF DRILLS.

Excessive breakage of small drills can be prevented by the use of blocks as shown by the accompanying drawing. Each block should be bored through with a bit a trifle larger in diameter than the drill that



Block supports drill.

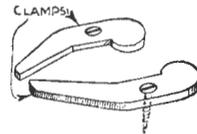
is to be used, after a larger hole has first been bored from the bottom up for a short distance to provide a place for the chips.

The use of these blocks will permit the drill to make the first "bite" into the metal without springing and will speed up the work, as well as increase the life of the drills.

"Popular Science."

WOODWORKING BENCH CLAMP.

For quickly jointing the edges of boards on the bench an adjustable bench clamp, made either of rough hardwood, or of iron or brass at least 1/4-in. thick may be used. The pressure of the board against the V



Adjustment is automatic

formed by the levers tends to force them apart and consequently their round ends press tightly against the wood to be planed. By adjusting the clamps boards of all stock thicknesses can be accommodated.

"Popular Science."

MARKER FOR MAKING EQUAL SPACES ON THE LENGTHS OF BOARDS.

When a carpenter wants several strips of wood of equal widths which must be cut from a single wide board he usually marks them by the thumb and pencil method. A better and more exact way is to make a guide as shown. Many strips of

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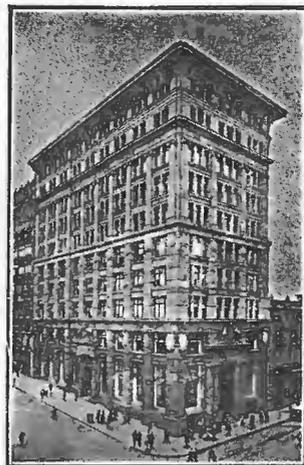
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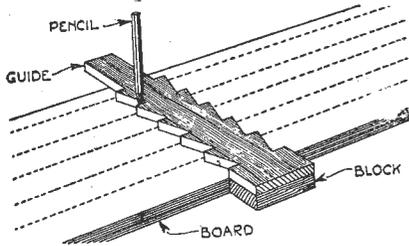
C. DANVERS, Manager for Australasia

P. HEATH, Assistant Manager for Australasia

W. B. CLARKE, Local Mgr. for New South Wales

equal widths can be made with it which vary little in width.

The marker is made from a piece of wood about 4 inches wide and a few inches longer than the width of the boards to be ripped. Mark the distance to be cut along one edge corresponding to the width of the strips desired, and make a line 1 inch from that edge and parallel to it. From



A Marker for Laying Out Divisions on a Board Lengthwise

that mark make teeth in the edge as shown. The opposite edge can be made into teeth representing narrower strips. Thus the guide can be utilized to lay off two different widths of strips.

Nail a block under the rectangular end of the guide, placing one edge of the block exactly parallel to the notched inside edge of the guide and at right angles to the shank. Lay the guide across the board and bear the block against the edge. Set a pencil point in one of the spaces between the teeth and draw the guide and pencil along the board. The other teeth, which are the same distance apart, will mark off equal widths, from which the strips can be cut.

"Illustrated World."

POLISHING THE HEADLIGHT REFLECTORS.

Do not try to clean the headlight reflectors with an ordinary cloth, because you are apt to scratch the highly sensitive surface and do more harm than good. The best way to polish them is to first sponge them off lightly with a soft wet cloth so as to remove all the loose dirt. When dry take a piece of dampened chamois, dip it into jeweller's rouge and then polish the reflector with a spiral or circular motion, starting at the centre. You will be surprised at the difference clean reflectors will make in the light reflected on the road.

REMOVING SPOTS, PENCIL MARKS AND DIRT FROM TRACING CLOTH.

Many times tracing paper becomes covered with marks that hinder good work. They may easily be removed as follows: Apply benzine with a cotton rag all over the tracing cloth and rub gently. The benzine will remove all lead-pencil marks and dirt, but will not touch drawing inks. The cloth will be made very clean. After cleaning the cloth the places treated with benzine should be coated with a little talcum, otherwise it will not be possible to use the pen on these spots.

OLD SAFETY RAZOR BLADES MAKE GOOD GLAZIER'S POINTS.

When it became necessary to put in a new glass in a basement window I found that there were no glazier's points on hand. I happened to see an old safety-razor blade and this gave me the idea of using it for making some points. As I had several of these old blades on hand I obtained enough material to make all the points needed. Bits of the blades were broken off in small triangles. I found that these could be easily pushed into the wood over the glass, and they were as satisfactory as the points which I have bought from a paint shop. It was a good substitute.

A glass is something we do not have to set very often, and although the putty is easy to keep from one occasional job to another, the points are invariably the item missing.

"Illustrated World."

PAINT PRESERVES MACHINERY.

The steel and iron of machinery of all kinds, unless otherwise protected, require painting wherever possible for purposes of preservation.

Before painting a metal surface the greatest care should be taken to clean it well. Scrape through rust spots to the metal with scrapers or wire brushes, and give the surface a final scrubbing with dry brushes. Remove every trace of oil and grease.

Two or three coats of paint should be well brushed on. See that any cracks are filled with the pigment.

Red lead, which is believed to protect iron from rusting, is expensive, and the

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colour is often objectionable, although the addition of a small amount of lampblack will improve both the colour and working qualities. The paints made of iron oxide pigments are quite satisfactory, because they combine cheapness and a high degree of durability. Any good oil paint will be serviceable if carefully applied.

RESURFACING OLD OILSTONES.

When an oilstone becomes glassy or "hard" in spots and is too oily there are several methods for restoring it to serviceability.

To remove the surplus oil, place the stone near a hot stove and when it is thoroughly warmed rub it on a cement sidewalk or floor, using a little sharp sand and water as an abrasive. It may be necessary to continue the rubbing for fifteen minutes.

Sometimes it will be found sufficient to rub the oilstone a few times with kerosene and turpentine instead of the usual oil.

"Popular Science."

HOW TO DRILL SHEET METAL.

Large holes may be bored clear through sheet brass or steel with a twist drill by clamping a piece of hardwood board on either side before drilling.

HOW TO CARE FOR THE OILSTONE TO MAKE IT EFFICIENT.

There is no article to be found in the tool box of the average carpenter that is so abused and gives so little service as the oilstone. Ordinarily this handy article is cast into the box unprotected as though it were of no importance, while really it is one of the greatest necessities. Without sharp tools no good results can be gotten in carpentry. The oilstone should be protected by a wood box that just fits around

it with a cover to be locked with a clasp. A stone so protected will last for many years. The stone lying unprotected in the tool box soon loses its power to produce an edge on a tool, becoming nothing but a soft stone wearing down to dust.

Most carpenters use some gummy, thick oil on the stone. This oil sinks into the pores of the stone, fills them and utterly ruins it after a short time. This is proven by the fact that most oilstones show a smooth surface where, as a matter of fact, the stone should show pores the same as a grindstone. Do not use thick oils on an oilstone, and if you use an oil at all use only a few drops of a high-grade non-gumming oil. Then, after you are through whetting, wash the surface of the stone off with a little kerosene and return it to the box. Kerosene is practically as good an oil as can be found for putting an edge on a tool. It is absolutely non-gumming, and if there is any left on the surface of the stone after whetting it can be removed with clean kerosene.

HOW TO FORETELL THE WEATHER WITHOUT A BAROMETER.

From thin white blotting-paper or any other white and absorbent tissue a reliable hygrometer may be made which will indicate the amount of moisture in the atmosphere and enable you to forecast the weather in a limited measure. Dissolve 1 part of chloride of cobalt and 10 parts of gelatine in 100 parts of water and soak the paper or other tissue in that solution. The paper will be pale rose red while it is wet. When dried by artificial heat it will gradually turn red, then bluish red, then lavender blue and finally a beautiful sky blue. According to the amount of moisture in the air the colour of the paper or other tissue will vary between rose and blue.

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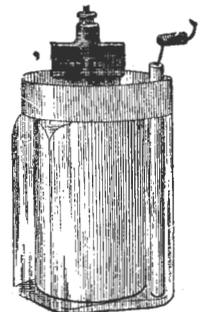
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NEW SOUTH WALES DIVISION

A GENERAL meeting was held at the Club Room, Queen's Chambers, Dalley Street, Sydney, on July 11, an attendance of twenty-five being presided over by Mr. H. A. Stowe.

The minutes of the previous general meeting and the elementary lecture were read and confirmed.

The Chairman then introduced Mr. S. V. Colville, founder of the Queensland Division of the Institute, who, in the course of an address, briefly sketched the activities of the Queensland Division since its inception in 1919.

A paper was then read by Mr. George Colton, describing the means of graphically plotting electrical energy. He dealt with static and signal impulses, and exhibited an oscillograph of a wireless message.

All present keenly appreciated the unique and interesting paper.

The next business was a lecture on "Radio Measurements for Experimenters" by Mr. J. G. Reed.

Mr. Reed dealt with the measurement of aerial inductance and capacity measure-

ment and wave-meter construction. He explained fully the various methods of operation, and gave numerous simple formulae for the experimenter's "note-book." He emphasized the necessity of proper design of apparatus to fulfil the correct working of receiving and transmitting sets, and advised experimenters to study the mathematical side of the subject, and thus gain a wider knowledge and obtain better results.

At the conclusion of the lecture, which was keenly enjoyed, the Chairman announced that Mr. C. D. Maclurcan had succeeded in transmitting to New Zealand the s.s. *Ulimarua*, using one valve, having picked up his signals alongside Auckland wharf. The power used was nine watts, and C.W. signals and buzzer signals were strength four, and snatches of speech were just audible.

Mr. H. R. Gregory talked briefly on variometers. He exhibited several types he had constructed, and explained how to overcome the difficulties in mounting them on panels.

The meeting closed at 10.30 p.m.

SOUTH AUSTRALIAN DIVISION

The monthly general meeting of the South Australian Division was held at the Y.M.C.A. Buildings, Gawler Place, Adelaide, on Wednesday, July 5. There was a large attendance, presided over by Mr. Hambly Clark.

A brief outline of the proceedings at the previous Council meeting dealing with the amateur status was given by Mr. R. B. Caldwell, who stated that a letter had been sent to the Prime Minister. Copies were also sent to all the other divisions with a request that similar action be taken immediately.

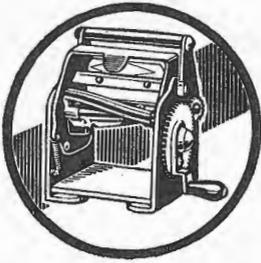
The Prime Minister had replied, stating that the question of radio control is being considered by the Federal Parliament, and

further information would be forwarded later.

At the conclusion of the business Mr. V. R. Cook delivered a very interesting lecture touching on sets which had come under his notice.

Mr. Cook brought along with him a complete sending and receiving set, taken during the war from a captured German aeroplane. This set, which is built into a small cabinet, is of very ingenious design, and requires only a few minutes to dismantle. Those present were thus able to view the different parts closely.

Mr. Cook explained the various designs and lay-out of the standard ships' sets of the different nationalities, including Eng-



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lish and American Marconi, Australian Amalgamated Wireless, Italian and Japanese.

At the close of the meeting a very hearty vote of thanks was tendered to the speaker.

The annual general meeting of this division will be held on Wednesday, Septem-

ber 6, when the election of officers for the coming year will take place.

Nominations for these positions will be called for at the next meeting, which takes place on August 2. A full attendance is requested at both meetings.

WIRELESS NOTES

METROPOLITAN RADIO CLUB

The last meeting of the above club was held in the Persian Gardens Café, Pitt Street, on June 28, about 95 members being present. Lectures were delivered by Messrs. Best and Garrod, while musical items, under the direction of Mr. Bird, completed the programme.

Mr. Best dealt with the general theory of D.C. motors and generators, leading up to the application of the motor-generator to wireless, and explained the causes and methods of elimination of generator hum.

Mr. Garrod described the process of manufacture of thermionic valves, and explained the various methods of using different types. His own wide experience with both detectors and amplifiers proved of great use to the members.

In accordance with the Club's policy of popularizing radio, it has arranged a competitive exhibition of apparatus, to be held in the latter part of August. The object of the exhibition is to bring before the public the originality and resource of the Australian experimenter in constructing apparatus, and to demonstrate the simplicity and ease with which efficient results may be obtained.

Exhibits will be classed, and prizes awarded as follows:—Crystal sets, single-valve sets, multi-valve sets, single part of apparatus, smallest working set, and comic working set.

The competition is not limited to members of the Metropolitan Club, but is open to all experimenters. Further information will be advertised in the Press when details are finalized.

An important feature of the Club's work is the series of elementary lectures, which is to be commenced by Mr. Swinburne at the next meeting of the Club. Particular attention will be given to the application of elementary electrical principles to wireless, and this must be of great benefit to all.

The following is the syllabus of lectures for this year:—

August 9.—Mr. Best: Second Elementary Lecture; Mr. Sewell: "Valve Amplifiers."

August 30.—Mr. Swinburne; Third Elementary Lecture; open for invited lecturer.

September 20.—Mr. Best: Fourth Elementary Lecture; Mr. Marsden: "Local Potentials on Crystals."

October 11.—Members' night.

November 1.—Mr. Swinburne: Fifth Elementary Lecture; Mr. Sewell: "Reception of C.W."

November 23.—Mr. Best: Sixth Elementary; Mr. Swinburne: "Loop Aerials."

December 13.—Seventh Elementary Lecture; open for invited lecturer.

COASTAL RADIO SERVICE.

Items of Interest.

Some remarkable results were recently achieved in connection with tests carried out at the Melbourne Radio Station on $\frac{1}{2}$ -K.W. valve transmitters. The wave lengths used were 720 metres and 1,400 metres.

Although the transmitters are rated at $\frac{1}{2}$ -K.W., the total input was only 180 watts, and the energy consumed in the aerial did

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Results.

Land Stations.	Distance. Miles.	Remarks.
Tonga	2,600	Voice heard, but unreadable.
Suva	2,100	Voice heard, clear.
Broome, W.A.	1,680	Heard musical concert, strength 5.
Thursday Island	1,660	Speech strength 6, through maximum interference, carried wave near maximum, music strength 7.
Geraldton, W.A.	1,640	C.W. strength 7, music and speech strength 5.
Wellington, N.Z.	1,480	Received voice strong.
Auckland, N.Z.	1,470	Received voice good.
Awanui, N.Z.	1,460	Received voice strong.
Hobart, Tas.	330	Can follow every word.
	(daylight).	
Ship Stations.	Distance. Miles.	Remarks.
S.S. "Waihemo"	2,300	Heard voice distinctly.
S.S. "St. Albans"	2,000	Received speech.

During last month two important record communications were established by the Amalgamated Wireless (Australasia), Limited station at Perth, the first being communication with the S.S. *Sophocles*, 12½ days out from Fremantle, at a distance of approximately 3,800 miles. (In this case messages were sent from the *Sophocles*, which were duly received and delivered in Australia.

The *Sophocles*' signals were also read by the coastal station at Esperance. This ship is fitted with the latest Marconi 1-K.W. valve transmitter, and it is probably a record for signalling on this power—especially in view of the fact that it was daylight at the station during reception.

Again, on July 3, 1922, Perth Station exchanged signals with the S.S. *Moreton Bay* after that vessel was 400 miles out from Colombo on the way to Aden. The distance in this case was 3,500 miles. The *Moreton Bay* is fitted with the Amalgamated Wireless Company's apparatus, and this constitutes the second record of that vessel.

Actual messages were transmitted and received between these two stations.

The above results should be particularly interesting in view of the fact that very low power was employed in both cases—something a little less than two electrical horse-power. From this one realises what enormous distances may be covered when 1,000 electrical horse-power is employed, as in the case of many modern high-power stations.

Wireless concerts are broadcasted by Amalgamated Wireless, Melbourne, every Monday night at 8 p.m., under the direction of Mr. S. M. Newman. A ½-K.W. Marconi valve transmitter is installed at Mr. Newman's residence at Canterbury; the aerial current is usually about 3½ amps on 950 metres.

The results obtained are very gratifying, as the concerts have been received at the majority of the coast stations and ships at sea, and are greatly appreciated by the local amateurs.

Staff Changes.

H. D. L. McGilvery, Radio Telegraphist, Brisbane Radio to Postmaster-General's Department, Sydney Telegraph Office.

J. S. F. Slattery, Radio Telegraphist, relieving staff, has returned to his headquarters after relieving at Cooktown.

A. R. Finch, Rigger, has returned to Collins House, after having completed a circuit of the mainland stations.

Mr. A. Fletcher, Radio Telegraphist, Melbourne Radio, is still an inmate of the Austin Hospital, Heidelberg, suffering from lung complaint, and it is with regret that we have to announce that on July 2 he had a relapse. However, he has rallied, and it is sincerely hoped that he will make rapid progress towards recovery.

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WIRELESS EXPERIMENTS

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RADIO receiving has passed the experimental stage and reached the point where it is a source of amusement, pleasure and instruction to the average person.

Sets.

Generally speaking there are two types of receiving sets to-day, each with many modifications and varieties. The best known and least expensive is termed the Crystal Set. Many amateurs have constructed their own sets of this type, or they can be purchased complete. The next set is called the Valve.

Function.

The function of a receiving set is to absorb the energy from the passing electro-magnetic waves sent out by transmitting stations in the form of what is technically termed radio frequency oscillations, and then to transform this energy into audible sounds, be it music, speech or ordinary signals; in other words, to make it possible to hear clearly and distinctly.

Parts.

The principal parts of a receiving set include the antenna, or aerial, which is a copper wire that intercepts or catches sound waves. Satisfactory results require at least one hundred feet of wire. It is said that a well-grounded aerial will protect a whole block from being struck by lightning.

The aerial switch, which serves to connect the aerial with the set itself, is another important unit, and telephone receivers, commonly called headsets, are essential.

The tuning coil makes it possible to vary the wave length of the set, thereby enabling the user to hear a greater number of stations.

The receiving transformer, or loose coupler, is designed to transfer the weak oscillations of extremely high frequency from one circuit to another. In the words of the layman, this merely means a finer

tuning, eliminating interference of other stations.

The detector is the most important part of the set to the average person. It rectifies the incoming oscillations of the wave train into direct pulsating currents, thus enabling operation of the 'phones at audible frequency.

When a condenser, fixed or variable, which controls wave lengths is put in series with the ground it tends to shorten the wave length. Placed in parallel to the open circuit, it permits the reception of longer waves. Placed parallel to the closed circuit, it is used to bring the secondary into resonance with the primary. Placed across the 'phones, it stores up the rectified oscillations and then discharges them through the 'phones with cumulative effect.

The buzzer circuit, which enables the operator to adjust his detector in advance to the maximum degree of sensibility, gives assurance that a calling station can be heard.

The safety or micrometer gap is connected across the aerial and ground terminal to prevent static discharges of strong nearby signals from throwing the detector out of operation.

The amateur, to increase his knowledge and obtain the best results, should study radio in the following order: Construction, arrangement, operation, function, care and principle of operation.

Detector.

The crystal detector mentioned so often is worthy of description. Galena is the most-used mineral, and is the best for the reception of weak signals. Carborundum as a detector is very stable and not affected by strong currents, but fails to be a good rectifier. Silicon is not as sensitive as galena, but is a better rectifier than carborundum. A sharp point of antimony pressing on silicon gives good results, but is not as sensitive as galena, and will not give as loud and clear signals.

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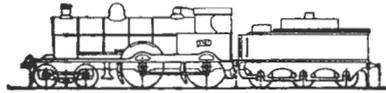
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Valves.

The simple valve or vacuum tube consists of five parts, the bulb, containing three elements; the filament, the grid and the plate; high voltage or B battery; low voltage or A battery; resistance for control of the A battery voltage; condenser in series with the grid.

The primary advantages of the valve compared with the crystal is that it is more sensitive, is not so readily put out of adjustment, permits receiving from stations at a much greater distance, and enables the use of a loud speaker, whereby sounds carry clearly in a large room.

Coupling.

Coupling is the method of transferring the energy absorbed by the aerial from the primary to secondary. It permits a finer tuning, thus preventing interference when two or more stations are simultaneously on a similar wave length.

Close coupling results in a larger transfer of energy from the primary to the secondary, and the circuits need not be in resonance. It is used for "listening in," as many wave lengths can be heard without readjustment.

Loose coupling gives a smaller transfer of energy from the primary to the secondary circuits. With this type the circuits must be in exact resonance.

The primary circuit is used for the original or crude tuning, which is transferred by mutual induction to the secondary circuit, which in turn gives the finer tuning.

When the transmitting station and the receiving set have the same wave length they are said to be in tune or in resonance.

The characteristics which determine the efficiency of the receiving set are: Range—detector and 'phone; audibility—condenser; selectivity—coupling.

To tune a receiving set to a distant broadcasting station it is necessary to adjust detector to its maximum degree of sensibility by means of the buzzer circuit. Set the secondary to approximately the desired wave length, using large values of inductance and small values of capacity. Increase or loosen the coupling. Add or subtract inductance and capacity in the primary circuit until response is heard in the 'phone. Loosen the coupling until in-

terference is eliminated or reduced to a minimum. Try new values in both circuits until the loudest sounds are heard with a minimum of static and interference.

CAULFIELD AMATEUR'S SET.

The aerial is of the inverted "L" type, consisting of four wires supported by two 45 feet poles 90 feet apart. The earth is connected to a water pipe, which is only four feet six inches from the set.

The receiver is combined for both long and short wave reception with one Expanse "A" valve. The whole of the apparatus is built in a cabinet, the controlling arrangements being mounted on an ebonite slab, 24 inches by 14 inches, serving as the



front of the cabinet. From left to right, beginning at the top of the set, is variable grid condenser, long and short condenser, variable high-tension switch. Second row: Primary variable condenser, filament resistance and valve. Bottom row: Switch for cutting out high-tension current, two-arm switch for putting primary condenser in series or parallel and switch for cutting out low-tension current. The range of the tuning is from 200 metres to 30,000 metres, honeycomb coils being used for both long and short wave.

The results obtained with this set are very satisfactory. Such stations as Stavenger (Norway), Bordeaux (France), Tachoosh (America), and other American stations being easily read. The telephony concerts broadcasted by Amalgamated Wireless Limited, are readable 25 feet from the 'phones, and are very much appreciated by myself and friends. One evening at 9.15 telephony was received from Raratonga.

Contributed by L. Falls.