of interest to the intending tourist. Obviously the Victorian Alps were considered a prime goal of many cycle tourers that season; the advertisements placed by hotels and guest houses reflected that anticipation. No similar guide was ever published by the Austral Wheel for any other part of Victoria.

It does not appear that any alpine 'special' was produced for New South Wales. However, as the New South Wales Cyclists' Touring Union (CTU) Cyclists' Handbook and Guide to the Roads of New South Wales (NSW CTU 1898) listed road surfaces, distances, local CTU representatives, train schedules and fares, hotel prices and afforded discounts to CTU members, it was more useful in several respects than the Austral Wheel Guide.

Tourism in the Australian Alps, then, appears to have been common by 1900. The bicycle's role in that development during the latter 1890s is very important, if not crucial. It enabled tourists from distant urban centres to view some of the most spectacular scenery the country could offer, at minimal transport cost and in a relatively short period. By the turn of the century cyclists had pedalled or pushed over most of the major roads of the highlands and had ascended several peaks as well. If not frequently emulated, they at least inspired others to less spectacular accomplishments, such as to Kiandra, Jindabyne, Warburton, or Bright (Plate 4.5). The annual endeavours of individuals and touring groups alike accumulated information and enthusiasm that by mid-1898 resulted in detailed touring guides. These allayed many doubts about mountain touring, made tour planning straightforward, and provided a great source of 'armchair' reading for the many who could only travel there vicariously. The cumulative effect was to develop a new consciousness with regard to touring in Australia's mountains. Well before the motor vehicle, the paths had been ridden and described (often in great detail)
by cyclists. As in so many ways in rural Australia, the human-engined device had opened up new opportunities.

Night Riding

Night cycling was common. In hot weather it was often more sensible than attempting a long, difficult ride during the day (W.F.L. 1897:82). The cooler temperatures (by aiding heat dissipation) enabled a cyclist to sustain a given power output with less discomfort. On occasion cyclists rode at night to benefit from decreased winds (MorHer 14/4/98:2). Commuters often had to cycle to and from work in darkness -- at 35 degrees latitude there are only ten hours of daylight in mid-winter (CAS 1977:10). A Forest Grove, WA, resident, working a 5½ day week at the Collie mines, rode to work through the Sunday night, returning home the following Saturday afternoon (McKenzie 1977a). Riders from Collie wanting to reach Perth by lunchtime left in the early morning darkness (Riley 1976).

Night riding was often undertaken without auxiliary lights. In an era when artificial lights were neither abundant nor bright there were both advantages and disadvantages. Certainly on dark nights on unsealed surfaces, the lack of street lights or reflected lights from buildings would have made safe cycling very difficult without lamps. On the other hand riders were not faced with the constant problem of having dark-adapted eyes affected by street, town or motor vehicle lights, as occurs today.

Moonlight was a great aid to cyclists, and many travellers took advantage of it (Birties 1910:514; Coleman 1898c:226; Bowen 1896:175). The Adelaide - Melbourne record attempts commonly began in Adelaide at full moon. The riders utilised the moonlight over the early, relatively good, routes out of Adelaide. The worst sections in the Coorong and
southeastern South Australia were negotiated in daylight and the following
night moonlight was again utilised on the better Victorian roads (AdWh
pointed out that legally 'It is not necessary to carry lights on the four
nights preceding the night of the full moon, nor on the night of the full
moon; but on the nights immediately succeeding the full moon lights must
be carried'. (That was because the full moon arises at sunset and
approximately an hour later each succeeding night, hence early evening
riding within a couple of days after the full moon was in darkness).
There was a £2 penalty for failure to mount lights when required. As
dark-adapted eyes can use moonlight to great advantage, weak bicycle
lights were not only not required but probably of little assistance to
the rider. During the course of the year the intensity of the full moon
varies greatly; when nearest earth it is approximately 30 percent
brighter than at apogee (Alter 1973:14), providing more riding light.

Bicycle lights were mandatory in most cities and communities.
However, photos rarely show lanterns on bicycles, regardless of the era
or area represented, and the lack of them was a perpetual source of
conflict between cyclists and others (KalMin 2/8/97:2). Enforcement of
lantern laws was generally less strict in small towns than larger centres
(WAMh 14/1/98:15). Portable lights such as candles, and miners' head
lamps were occasionally hung on the machine or rider (Witt 1977; Riley
1976; Boulton 1976). But Garratt probably summed it up well:

They are all more or less of a nuisance ... lucky is the
man who has one that will enable him to see a cart thirty
yards off when he is riding at twelve miles an hour ... as a rule the light merely dazzles the rider and makes
everything around appear impenetrably dark'.

What was needed was 'a little light a long way ahead, not a very bright
patch just in front of the machine' (Garratt 1899:219-220). Interviews,
correspondence and literature suggest that lights were not much used for rural travel, although in an effort to set a long distance cycling record White mounted three lamps, one on the handlebars, and one low on either front fork (AunWh 10/98:300).

Oil lamps were among the first to be adapted for cycling, although users complained about the smoke and that they served more effectively as 'an automatic lubricator to the tires' (WAWh 15/1/97:18) than for lighting. Acetylene (carbide) lamps were widely adopted in the late 1890s. They were clean, produced a bright light and, as many miners used them, fuel was generally readily available (Boulton 1976; Riley 1976). The nature of carbide lights (adding water to produce the gas) led to jokes about those who had never seen water burn. Electric lamps eventually came into use but were not popular among some because of the cost of the batteries and the corrosion of the points in long-term, foul-weather use (Riley). Stonehouse (1976a) felt that the batteries over the years became progressively poorer in quality.

Vegetation

Much of Australia's natural vegetation was quite amenable to cycling. Its xerophytic nature often resulted in a relatively sparse ground cover of low bushes, trees, shrubs and grasses. By the time the bicycle was introduced the vegetation had often been extensively modified as well, usually to the cyclist's benefit. For millenia, aboriginals had been prolific in their use of fire for hunting and had extended the open woodlands and grasslands. The Europeans continued the trend by clearing and burning to extend pastoral and agricultural areas. In forest, mallee and scrub areas that could have been relatively difficult to penetrate, bicyclists often found that roads and tracks had already been pushed through.
Cleared vegetation left cycling hazards. In the Northern Territory a broad avenue about one chain (20 m) wide had been cut through the scrub for the overland telegraph line. However, there were many stumps, legs, limbs, and decaying telegraph poles on the track. When the sun was low the shadows from standing timber often misled Murif (1897:117) into dismounting or preparing for obstacles that proved ultimately non-existent. More disconcerting, and ultimately injurious, was the occasional 'shadow' that proved to be a leg.

Some cyclists took bicycles into areas of such thick vegetation that riding was impossible. In their haste to reach a purported gold strike at Israelite Bay in Western Australia in 1895, for example, several riders cut their way through thick brush and timber (CooPio 21/8/95:6). On narrow pads cyclists suffered scratches and cuts from limbs and brush (Costello 1977; Garnet 1901:8), which could sometimes be painful and slow to heal (Murif 1897:145). Vegetation was often a good guide as to cycling surfaces. Murif noted that spinifex generally meant loose or sandy soil and looked longingly for the mulga thickets where, as Coleman (1898:226) put it, 'the going is always good'.

'Luxuriantly grassed' plains generally provided good cycling, but occasionally posed problems. Near Daly Waters, NT, Murif (1897:168) encountered wiry grass which wrapped around the spokes, hub, chain and cogs and quickly immobilised the machine. He had to frequently dismount and cut it away, sometimes every few hundred metres. The same problem was met with by the Blakeley (1938:223-224) party 11 years later, who occasionally found it easier to carry the bicycles than be bothered with having to constantly cut grass from the axles.

Bushfires plagued some cyclists. The White party met with several in Western Australia during their around Australia ride (WesMail 17/2/00:...
and Andrews (1898:9) and a companion were forced to carry their bicycles over burning logs in the Otway Forest of Victoria. Remnant coals remained a hazard often long after the blaze itself had passed, and Birtles (1935:23) suffered two punctures from coals near Gympie, Qld. And aside from the continual need to watch out for such tyre puncturing plants as spinifex ('Mac' 1896:174), in burnt areas spikes on the stubble of coarse kangaroo grass punctured tyres as well (Blakeley 1938:222).

The greatest vegetational hazards for the rural cyclist, however, were the numerous thorny plants that punctured tyres. These will be discussed presently.

Wheels

The size of a wheel directly affects the ease of riding. With respect to rolling resistance, the larger the wheel the more easily it runs when supporting a given weight (Whitt 1974:112), and the effect is even greater on soft than hard surfaces. In one test it was found that if the wheel diameter was increased by 35 percent, the rolling resistance decreased by 20 percent (Whitt 1974:105-106). Large wheels roll more smoothly over surface irregularities. A larger wheel may roll 'across' the opening of a small hole, but the edge of the hole acts as an obstacle to a smaller wheel.

Large wheels are more satisfactory in riding over stones, gravel or other rises from the normal surface because a large wheel passes over a vertical obstacle more gradually than a smaller wheel (Sharp 1896:243). As shown in Figure 4.4, the 30 inch (76 cm) wheel encounters the obstacle earlier and spreads the total vertical rise and fall over a longer horizontal distance than does the smaller 16 inch (41 cm) wheel. In this example the ratio of vertical to horizontal
Figure 4.4
PATH OF WHEEL CENTRES OVER AN OBSTACLE

A = line of travel of centre of wheel A (diameter = 30 inches - 76 cm)
B = line of travel of centre of wheel B (diameter = 16 inches - 41 cm)
a = b = height of obstacle O (2 inches - 5.1 cm)
a' = 7.48"
b' = 5.29"  a' or b' = \sqrt{2rh - h^2} , where r = wheel radius
                h = O

Ratio of total vertical lift to total horizontal travel
for A = a/a' = 2/7.48 = 1/3.74
for B = b/b' = 2/5.29 = 1/2.64
movement over the three inch (7.6 cm) obstacle (assuming the tyre flexes around a third of it) is 1 in 3.74 for the 30 inch (76 cm) wheel, and 1 in 2.64 for the 16 inch (41 cm) wheel. The ratio of rise or fall for the 16 inch (41 cm) wheel, then, is 1.42 that of the 30 inch (76 cm) wheel (3.74 = 2.64 x 1.42).

The most appropriate size for bicycle wheels was long debated. Advocates of larger wheels argued that they steered more easily (AuWh 7/98:197). Some attributed this to a greater gyroscopic effect, but Whitt (1974:180-181) says it was of less importance than the fact that the larger wheel was simply less disturbed by rough surfaces. Both 30 inch (76 cm) and 28 inch (71 cm) wheels were used for some years but by the mid-1890s the 28 inch (71 cm) wheel had become standard, substantially because the major tyre firms produced only 28 inch (71 cm) tyres. While both sizes were available, however, many bicycles were fitted with a 30 inch (76 cm) front wheel and a 28 inch (71 cm) rear one. The owners felt that the easier steering associated with the larger front wheel merited fitting two sizes (Bond 1896b). Why they did not mount a 30 inch (76 cm) rear wheel as well is not clear, although many rear fork designs may not have permitted it. However, the two different wheel sizes on one machine meant that the rider had to have two sets of tyres, tubes and spokes for repairs. On sealed surfaces (which became progressively more common in urban areas, where most bicycles were used), the slightly rougher ride of the smaller 28 inch (71 cm) wheel was inconsequential, but for rural cyclists on rough surfaces, their adoption was detrimental.

Wooden bicycle rims originated in the United States (the English writer, Pemberton (1897:82), acknowledged the 'ingenuity of our American cousins'). Evidence suggests that they were not much used in Australia.
The advocates of wooden rims considered their lightness an important asset. However, in comparison to some wooden rims, steel rims were only marginally (if at all) heavier. Wooden rims required considerable care and varnishing (AuWh 8/96:209) to avoid cracking and warping. When wooden rims were subjected to direct blows and strong torsional forces while turning and hitting obstacles, they were likely to crack or collapse — they did not derive protection and strength from an iron tyre as did wooden coach and cart wheels. Their tendency to break hindered their use in rural Australia. However, one writer noted that 'in justice to our Australian makers, we have found that it is usually an imported rim that gives out' (AuWh 3/96:69).

Steel rims were the norm for Australian cyclists. Mass production in a standard form resulted in progressively cheaper prices, and manufacture could be readily modified to accommodate the variety of beaded-edge tyres that were developed. Writers noted that the use of steel meant wheels of more consistent quality (AuWh 3/96:54); with wooden wheels, the selection of wood and individual craftsmanship were variable. In Perth in 1897 the manager of Raleigh cycles, visiting Australia, announced that the practice of fitting wooden rims for colonial export would be abandoned in favour of steel rims, 'to suit the requirements of the colony' (WAWh 12/3/97:11). In mid 1898 a reported 90 percent of bicycles imported into Victoria had the Dunlop-Welch steel rim fitted (AuWh 7/98:213). In fact, Dunlop's decision to adopt the Welch rim worldwide was reportedly heavily influenced by its performance in Australia (AuWh 12/97:391).

Early bicycle wheels were radially spoked. Unfortunately the spokes were subjected to some lateral force during acceleration and braking and tended to distort and break. The tangentially spoked wheel
eliminated this problem as all forces were applied tensionally. Literature and photographs suggest that radially spoked wheels were rare by the mid-1890s in Australia.

The tangentially spoked wheel was light and strong (Plate 4.6). When a spoke or two did break it was usually unnecessary to repair them immediately, and cyclists commonly finished a journey before carrying out repairs (Costello 1977), although this did increase the risk of further breakage. A broken tangentially mounted spoke could be relatively easily repaired or replaced (in contrast, radial spokes were often screwed into the hub and when they broke off the remnant could be extremely difficult to remove (Garratt 1899:108-109)). If a replacement spoke was not available, wire could be substituted. It could be run between the hub and wheel and strained taut. In a pinch, a series of spokes could be removed selectively from around the wheel and replaced at strategic points to keep a relatively evenly tensioned wheel until proper repairs could be completed (WAWh 8/1/97:13).

Wheels were extremely serviceable and were easy to repair in the bush. No better example is available than a photo taken in Darwin in 1908, at the end of the Blakeley (1938:227) party's ride from Milparinka, NSW, (Plate 4.7). The rim broke and the gap was bridged by wire to keep the tyre and tube seated and aligned. Nearly every spoke was broken and they were replaced with wire, often anchored at several nipple and hub points. It seems almost impossible that such extensive repairs could have been repeatedly carried out and yet have left the wheel rideable. Yet, the machine was pedalled into Darwin at the end of the trip. One description of how to straighten a wheel said 'pull up the points that are lowest and press down those that are highest' simultaneously, and then lay it 'across two blocks of wood and tap it with another', concluding that it might be necessary to 'tighten up some of the spokes' (AuWh 6/96:146).
Plate 4.6
'DUNLOP'S FOR STRENGTH', DATE UNKNOWN
(Dunfile)

Plate 4.7
'DICK'S WHEEL AS HE RODE IT INTO DARWIN', 1908
(Blakeley 1938:264)
Tyres

(The Dunlop pneumatic tyre) '... did more to popularise cycling than did the cycle itself'.

(Austral Wheel 8/96:231)

The first tyres used on safety bicycles in Australia were solid and cushion rubber tyres. The cushion tyre was essentially a tube, which had more resiliency and gave a smoother ride than did the solid rubber tyre. Non-pneumatic tyres had several problems however. On rough surfaces they were subjected to a variety of forces that tended to twist them off the rim. Also, heat weakened the shellac and other agents used to help bond them to the rim; this was a particular problem in Australia, where high temperatures were encountered. Some riders resorted to copper wire to bind the tyres to the rims, but these also needed frequent repair and replacement (Pearson 1925:18).

Cushion rubber tyres were used by Pearson (1925:36) for his early rides about New South Wales. Armstrong and Craig rode cushion tyres from the Gulf of Carpentaria to Sydney in 1893, but had to bind them with greenhide to finish the trip (WesMail 20/5/98:32). The solid and cushion rubber tyres were generally superseded by the mid-1890s, although the W.A. Cyclist (1/9/99:5) reported that while cushion tyres were as 'scarce as dead donkeys' in towns and cities by late 1899, one 'has only to steal away from the madding crowds to discover many of them'.

The pneumatic tyre made the safety bicycle more practical in rural Australia. It provided a decreased rolling resistance, was an excellent shock absorber, was not easily forced off the rim, and by means of pressure and width variations allowed the riding of soft and loose surfaces. Only with it could cyclists move relatively quickly, easily and virtually at will throughout the bush.
The pneumatic tyre was first patented by Thomson in 1846 for use on coaches and carriages, but was eventually forgotten (Duncan 1926b:599-602). In 1888 Dunlop re-invented the pneumatic tyre for bicycles, and in 1889 patented the concept of an inner tube and an outer cover, the latter both cemented and bound to the wheel rim. The subsequent quick development of wired and beaded-edge tyres by Welch and Bartlett, respectively, permitted the ready removal of the outer cover, which facilitated repair. In 1892 Palmer developed the diagonally-threaded fabric lining which allowed shock absorption without undue distortion of the tyre cover (Caunter 1955:39). Together these developments contributed to the rapid and widespread use of the pneumatic tyre.

It is not clear when pneumatic tyres first arrived in Australia. E.W. Rudd, who eventually managed Dunlop (the largest tyre dealer), and the Austral Cycle Agency (the largest cycle dealer) in Australasia, claimed to have introduced them in late 1889 in Melbourne. In 1890 he was taught the then relatively secret 'art' of tyre repair, and the same year reportedly sold the first safety to be fitted with pneumatic tyres in Australia. In late 1892, in conjunction with a Mr. Rand, he reportedly produced the first Australian made pneumatic tyre. As late as 1892 however, Rudd reported it 'a terrible job to sell machines with pneumatic tyres', and sold only one or two a week (AuWh 5/98:127).

That was the year in which pneumatic tyres began to make a significant impact on the Australian cycle scene. A pneumatic tyred bicycle was ridden from Sydney to Brisbane and back, and another rider broke the Sydney - Melbourne record on one (SBC 1892). In Perth the appearance of pneumatic tyres caused great consternation among the racing fraternity and the handicappers were thrown into disarray. Cushion tyres had no chance against the much easier running and faster pneumatics. Pneumatic tyred bicycles were banned briefly (WesAus 20/1/93) but
separate races were organised (WesAus 12/12/92:2). In late 1892 two
Westrallian riders, Hooley and Hutchinson, used pneumatic tyres on a
ride to Southern Cross, then the last town before the arid stretch on
to the recently found goldfields at Coolgardie. They demonstrated the
feasibility of the new tyres in harsh riding conditions, and in the
process covered several stretches far faster than anyone, by whatever
conveyance, had ever done them before (WesMail 3/12/92).

Pneumatic tyres were adopted at an increasing rate. As the
problems of leaky valves and tube joints were overcome and the repairs
became a relatively simple, common procedure, sales skyrocketed. By late
1896, when Rudd terminated his association with Dunlop, a reported 50,000
tyres had passed through his hands (AuWh 5/98:128). The tyres were very
expensive initially. In late 1893, for example, a bicycle fitted with
pneumatic tyres cost £23 in contrast to the £15 asked for a cushion tyred
version (Argus 1/11/93:8).

An early problem was leakage, particularly at the juncture of the
valve and tube (L.R. 1896:18). Even as late as 1898, occasional tourers
were still mentioning this as a nuisance. One rider suggested that a bit
of soap rubbed around the valve-tube juncture would effectively seal the
joint and prevent small leaks (AuWh 6/97:192). Leaks sometimes resulted
from defective valves or small specks of sand getting into the valve
during inflation and preventing full closure (AuWh 3/96:70). Extreme
heat occasionally softened or melted the tube joint itself. When the
tube joint failed it was generally worse than any puncture, as it was
extremely difficult to repair (Prospector 1896:208) without proper
facilities. Often the tubes had to be sent to a tyre firm or cycle shop
for rejoining (WAWh 31/12/97:7), a serious drawback for the bush cyclist.
By the latter 1890s, though, journalists reported that tube problems had
been essentially overcome (AuWh 7/98:210); they were certainly less
frequently mentioned in accounts of cycle trips.

The development of pneumatic tyres that were easy to repair was a crucial factor in their mass adoption. The early tyres, occasionally cemented to the rim, could take several hours to remove, repair and replace (AuWh 5/98:127), and required much 'patience, ingenuity, and solution' (WAWh 3/9/97:10). The process was eventually simplified by the development of wired, beaded-edge tyres, in which the bead was held firmly against the rim by the tyre's own pressure; when deflated, it was relatively easily slipped on and off. In late 1898 Dunlop introduced the 'Multiflex' tyre to Australia. The previous single wire was replaced by a thinner wire wrapped three times around the tyre, giving a more flexible bead than before. In addition the rim was narrowed and deepened. This gave more strength and less likelihood of the tyre being forced from the rim. Dunlop also introduced an improved tube joint and a rubber compound less susceptible to sun-cracking (AuWh 11/98:327-328). The new tyres and tubes sold for the same price as the old ones (AuWh 3/99:93) and proved so successful that the firm had to withdraw them from sale for several months to allow dealers to clear old stocks (AuWh 2/99:59).

The perceptions, misperceptions and debates about the characteristics of the pneumatic tyre continued for years and provide a fascinating example of reaction to a totally new technological item. One of the most commonly held ideas was that heat caused a deterioration of the tyres, quite aside from its very real effects upon the tube joints; others suspected that sunlight, and not heat per se, was a more crucial factor (AuWh 12/97:384). Many felt that the most serious heating problem was the potential 'expansion of imprisoned air' (AuWh 12/97:384). Many presumed -- but seemingly never convincingly demonstrated -- that if tyres were left too long in the sun, they would explode (WAWh 24/12/97:19). Riders were
frequently advised to cool their tyres in streams whenever possible, and many did just that (Pearson 1925:21). In the midst of these writings and advice the occasional perceptive wag asked the obvious question that none of the 'expansionists' proponents seemed able (or willing) to tackle:

All cyclists know that if a bicycle with highly blown tyres is left in the sun for a time, the probability is that the air in the tube will expand so much as to burst the tyre. Yet, how is it that you ride a machine with tight tyres hour after hour in the hottest sun without the tyre bursting?

Curious, of Hawthorn
3 June, 1897 (AuWh 9/97:249)

One common theme was that the front tyre did not need to be so inflated as the rear one, which 'takes all the weight' (MorHer 7/4/98:2). One writer calculated that 'the tyre of the back wheel does nearly all the work, not only driving but carrying four-fifths of the weight' and consequently recommended that the tyres should 'be proportioned' appropriately; he did not specify in what way (AuWh 5/96:122). Another reminded cyclists not to 'forget that wet tires puncture easier than dry' (WAWh 18/6/97:8).

For many years in Australia there was no consensus as to whether to spell the word as 'tyre' or 'tire' — one writer compromised by using it both ways in one sentence (AuWh 5/96:111). Firms such as Dunlop Tyres or the B & B Tire Company of Perth were generally consistent; the same was not the case with many writers, publishers and government agencies.

**Tyre Damage**

'... 20 miles of Prickly Jacks and riding on the rims ...

(Richardson 1897)

Thorns caused the most tyre trouble for rural cyclists and (with the possible exception of sand) posed the single greatest obstacle, whether
mechanical, biological, or otherwise, to moving about the Australian bush. A variety of thorny plants, both natural and introduced, were widely distributed throughout the continent. They led to a tremendous amount of thought, effort and ingenuity in preventing punctures and locating the minuscule holes.

The popular names of thorny plants were and still are confusing, misleading, and inconsistently used, both locally and nationally. A wide variety of names have been applied to the same plant. For example the most common thorny plant that affected rural cyclists nationwide was Emex australis. It was apparently introduced from South Africa and the Afrikaans word for it, 'duweltjie' (devil's thorn) was corrupted to 'doublegee' in Western Australia (Gilbey 1975:23). E. australis is still commonly referred to as 'doublegee' in Western Australia, although eastern states immigrants during the 1890s goldrush introduced their terms, such as 'bendie' and 'prickly jack' (MorHer 16/6/99:2). In the eastern states, however, a wide variety of terms have been used to refer to E. australis, including 'prickly jack', 'three-cornered jack', 'catsheads', 'giant bull head', and 'bendie' (spelled and pronounced variously, e.g. 'bindy-eye'). Interestingly, during the course of this study it was found that the eastern terms were often known by Western Australians (although rarely used by them), but most easterners were not at all familiar with the term 'doublegee'.

The same term was often applied to distinctly different plants. An excellent example is provided in the New South Wales Cycling Gazette, which devoted a column to an analysis of a package of thorny plants which were collected between Bourke and Pera Bore and then shipped to the journal's Sydney office. The Cycling Gazette's (14/8/97:6) writer described the 'cushion bendie', 'mat bendie' and 'bush bendie' as but three of the eight varieties of plants in the package which were 'aggressive to cyclists'.
In fact, the descriptions of the growth patterns and the characteristics of the thorns suggest that these 'bendei' included varieties of Bassia and Emex (Webb 1978), which are not related to each other. 'Bendei' is a catchall term used for many thorny plants in eastern Australia (Weiss 1977; Groves 1977). In Western Australia the term 'bendei' is applied generally to Soliva pterosperma (also popularly known as 'jo-jo' or 'onehunga'), a troublesome lawn weed with very small burrs rarely bothersome to bicycle tyres (Gilbey 1976). The inconsistency of popular terminology is readily apparent from a cursory survey of botanical reference works.

During the course of this study the botanical names were not found in any cycling literature nor were they used by any rural cycling interviewees or correspondents. I will use the general term of thorns or thorny plants. Where common names such as 'bendei' or 'doublegee' are cited, it is because the early riders themselves so described the plants.

A description of Emex australis will give some indication of the problems posed by the various thorny plants. It is a relatively low plant, growing only to about 56 centimetres in height, with long stems reaching out from the central root. The woody seed capsule, or burr, has three sharp spines capable of readily penetrating a cycle tyre and tube (Plate 4.8). It has been called 'doublegee', 'prickly jack', 'three-cornered jack', 'Cape Spinach', 'Tanner's curse', 'giant bull head', 'bendei', 'spiny emex' and 'catsheads'. Weiss (1975) counted a mean of 345 seeds per plant and Gilbey (1975:24) reported as many as 8,700 burrs per square meter in heavily infested paddocks, a mean adversary for the cyclist (Plate 4.9).

It was apparently first introduced to Western Australia in 1830 (Gilbey 1975:23). It was noted in South Australia in 1870 and rapidly spread eastward to Victoria, New South Wales and Queensland. By the time
Plate 4.8
Emex australis
(Paul Weiss - Plant Industry, CSIRO, Canberra)

Plate 4.9
DUNLOP ADVERTISEMENT, DATE UNKNOWN
(Dunfile)
the pneumatic tyred bicycle arrived on the scene, *E. australis* was distributed throughout many areas of the continent. The plant spreads only by seeds, generally via motor or other vehicles, water, or in hay, chaff or other seeds. The seeds are not found commonly in animal hides or wool, and although lambs may carry seeds in their feet they are usually too lame to travel any distance. Gilbey (1975:24) suggests that in recent years they have been spread most commonly by the rubber tyres of motor vehicles, airplanes and farm machinery. However, the earlier spread was probably by means of hay and chaff, as a narrow band of *E. australis* has been traced from Dongara to Nullewa, along the supply route of the early Murchison goldfields (Gilbey 1976). The first mapping of the distribution in Australia was by Gilbey in 1974 (Figure 4.5), but the pattern of distribution at the turn of the century may well have been more restricted.

Among other troublesome plants for cyclists is *Tribulus terrestris* L. or 'caltrops'. This is also a low plant with long stems which may grow several feet from the tap root. It forms a seed capsule, or woody burr of five segments. When ripe, the burr breaks apart, and each wedge-shaped segment has two stout spines and two smaller spines at right angles. The appearance of the seeds is similar to the spiked iron balls used to stop horses in former times (Meadley 1965:105). Although the plant has been found in every state, apparently no map of its national distribution has been compiled.

The galvanised burr, or *Bassia birchii*, was another serious problem for New South Wales and Queensland cyclists. The plant was first identified in Queensland in 1874 and in New South Wales in 1916 near Wee Waa, although it has not been determined if it is native to Queensland, New South Wales or both (Auld 1975). It is found in central and southern Queensland and the central region of New South Wales (Menz 1977)(Figure 4.6).
Figure 4.5
DISTRIBUTION OF *F. mex australis* IN AUSTRALIA
(Gilbey 1974:116)

Heavy

::: Sporadic or light

\*\*\* Scattered infestations along rivers and around towns
Figure 4.6
RANGE OF Bassia birchii
(Auld 1976:174-175)

Main range of B. birchii
Isolated collections
Serious infestations
Isohyets (mm)
It increased in density during the breaking of the drought in 1926 - 1930 (Everist 1976:88).

Stones could cause considerable damage to tyres and tubes. Williams (1977b) suffered many tyre and tube bruises on stony roads during years of cycling in the Orange, NSW, area. Nicholson (1977) reported that a stone wedged between the mudguard and tyre caused a blowout and spill. Tyres and tubes were cut by sharp stones and chips created by cartwheels and animal hooves striking rocks. While riding down the Dorrigo Mountain, NSW, in 1936 Faulkner (1977b) and another rider suffered seven punctures from the 'razor sharp blue metal' used for the road surface. Some riders were hesitant to cycle on 'dreadful blue metal' (Nicholson 1977) and 'flint studded tracks' (Fisher 1977). Even when chips did not result in an immediate puncture, they could imbed in the tyre and gradually work through (Aund 7/97:224). The cuts eventually weakened the rubber and fabric. Needless to say, tyres were also damaged by pieces of glass, nails, tacks, roots, stumps, sticks, limbs, logs, potholes and ruts.
Tyre Repairs

THE PUNCTURE

Oh, there's sulphur in the kitchen,
And there's brimstone in the hall,
While words, loud and portentous,
Ricochet from every wall;
The woman walk on tiptoe
Lost they feel effects of ire,
For father is attempting
To repair a punctured tyre!
There are sprockets on the door knob,
And the saddle's on a nail;
The rims are on a gas jet,
And ball bearings fall like hail.
There is gore upon the carpet,
Caused by blistering spokes of wire,
As father is attempting
To repair his punctured tyre.
Oh, the baby's gone to gasping,
And each breath seems like its last;
For it's swallowed half the stickum,
And its life is ebbing fast.
Little Johnny's lost the rubber
In his wish to help his sire,
In his wild misapent endeavour
To repair a punctured tyre.
Oh, the gasoline for cleaning
Has exploded with a flash,
And the tub for tracing bubbles
Has tipped over with a splash!
Hush! 'tis finished. Now he's pumping,
"Failed to stick!" and through the mire,
To the puncture man, goes father
With his still deflated tyre.

(Anonymous - reprinted in several cycle journals)

The rural cyclist had to be prepared to repair the tyres and tubes. A scarcity of water often posed a basic problem — how to locate the leak in the first place. One rider lamented the lack of a special portable container in which a small quantity of water might be held to rotate the tube through (Pirani 1896:369). One writer suggested that a wetted hand passed over an inflated tube would result in a distinct sensation of 'a bubbly nature' being felt over the leak (MorHer 2/2/98:2). Another said that a bit of water poured over the suspected leak would cause soap, rubbed on the pinhole, to bubble up (AuWh 4/99:117). Others suggested pre-loading the tube internally with a variety of materials; if a powdered...
ball of 'washing blue' was left in the tube, rubbing the tube externally
with water would disclose any leak through a blue smudge (AuWh 12/97:384).
Austin (1897:249) recommended placing an ounce of red ochre on the inside
of the tube. One rider advocated blowing tobacco smoke into the tube and
watching for the tell-tale puff issuing from within (AuWh 2/1/96:28).

Leaks could usually be fixed on the spot. Dunlop sold a midget tyre
repair outfit, for example, which contained solution (adhesive), patches
and other items. It could be obtained by mail anywhere in New South Wales
for one shilling and two pence in 1897 (CyGaz 10/4/97:266). An unfortunate
problem was that sometimes the solution dried out, a not uncommon
experience in hot weather (Smith 1977b), and it was suggested that
hoteliers seeking the cyclist's patronage should stock rubber and solution
(AuWh 3/99:78) as well as have bicycle pumps available. When a leak was
very small there was the possibility of makeshift repairs. In the Northern
Territory in the 1930s, for example, Smith (1977b) found that he could
fold the tube longitudinally several times at the location of a leak and
tie it securely with string; this sealed the leak sufficiently to allow
him to get back to camp (although he had to retie and reinflate the tube
during long rides).

If the tube could not be repaired the alternative was to push or
ride the bicycle on the flat tyre or rims, or stuff the tyres with grass,
rope or other material. This technique was used in 1896 (Prospector 1896:
208) on the Western Australian goldfields, when one rider stuffed pieces
of a chaff bag inside the tyre. Bean (1910:83) reported that shearers
stuffed tyres with rope or strips of basil in New South Wales, and John
Lane used grass in 1902 during a ride through New South Wales and Queensland
(Souter 1968:200). In the 1930s Costello occasionally rode on a flat tyre
or rim and witnessed others doing so. The effort required to propel such
machines was 'no easy job in very soft country' (Prospector 1896:208).
The Blakeley (1938:245) party had to push their heavily loaded bicycles most of the way between Elsey Station and Pine Creek, NT, when the tyres were stuffed with grass; 'useful as grass had been, air proved a better filling for our tubes'.

Tyre repairs were often undertaken on an emergency basis until the rider could carry out more extensive and permanent work. Small cuts could be sealed with solutioned blotting paper or cotton (NMAh 9/7/97:15). Larger cuts, blowouts, or threatening weak spots were repaired or reinforced by placing pieces of canvas or rubber inside the tyre (Smith 1977b) or by wrapping them around the outside (Harries 1977). Unfortunately, tubes with 'more patches than rubber' (Stonehouse 1976a), or tyres with large pieces of canvas or rubber lining bumped each revolution (Harries 1977). On one of his cycle trips during a campaign circa 1910, Holman, the Labor politician, related his experiences with his machine:

I got here after a most exhausting ride of 52½ miles. The ride itself was not too bad. But I got a puncture after 6 miles, and thence to the 23 mile point I had to get off and adjust my mending every mile or so. It was a great rip of about 1½ inches. I had to sacrifice my necktie to get it made secure externally. This retarded me enormously, as well as making the actual going much harder.' (Evatt 1945: 217).

Blakeley (1938:244) said that goatskin greenhide was the best temporary tyre patch he ever used. He soaked the skin in water, applied it wet and allowed it to dry; it gave 500 miles (800 km) of wear. During the around-Australia trip of 1899 – 1900, the White/MacKay party, after 2,600 miles (4,180 km) of riding from Melbourne, pedalled into Darwin to pick up more tyres and tubes that were to have been shipped there. But the equipment had not arrived and they managed only to gather some tubes and three pounds (1.4 kg) of solution. They covered their worn tyres with canvas. After another 400 miles (645 km) the tyres were threatening to give way, which would have destroyed the tubes beyond repair. So they
cut an untanned calf's hide into strips, scraped off the hair, and soaked and laced it around the rims. Unfortunately they had one leaky tube which, since the greenhide could not be removed, had to be frequently pumped up. At Halls Creek, WA, they replaced the greenhide with canvas strips from waterbags. Further repairs had to be carried out with materials borrowed from stations along the way. They finally reached Derby and obtained new tyres and tubes that had been shipped there for them (Clune 1942:155-156,162).

While few bush riders would have gone to such lengths, the experience showed to what extent the pneumatic tyre-and-tube arrangement could be manipulated if necessary. The use of greenhide or leather was not an innovation on the part of Blakeley or White and Mackay; there were a number of leather tyres patented (e.g. NSWLetPat 1899:37) and a few even placed on the market by commercial interests.

An Ounce of Prevention ...

Cyclists used several techniques to prevent tubes from puncturing or leaking. There were a number of commercial compounds available (for example 'Fucosine' (AuWh 1/98:25) and Dunlop's 'Puncture Stop' (AuWh 9/97:305)) which, placed inside the tube, were supposed to seal small leaks. One rider suggested a mixture of brown sugar and warm water poured into the tube (AuWh 10/97:323). Carratt (1899:125-126) recommended a wineglass of golden syrup as a leak preventative: 'the effect is really astonishing', reportedly preventing leaks for 18 months. He suspected that there was some chemical disadvantage to its use, but that 'as long as it remains secreted it is of no consequence'. Even if treacle did not seal the leak, when it ebbed through 'it lets you see where it is' (AuWh 11/97:349).

To prevent thorns and other items from reaching the tube in the first place a variety of commercial and homegrown techniques were utilised.
Hopewell (Edge 1977) and Witt (1977) found that kangaroo skins inserted between the tyre and tube were quite effective. However, it made the machine harder to pedal and was consequently used by Witt only in areas where he encountered the more vicious 'goatshead', not the more common 'doublegees'. Tarrant (1977a, 1977b), who delivered mail for many years in the Illawarra district of New South Wales, placed layers of newspapers between the tyre and tube and renewed them weekly. Some cyclists inserted pieces of tyre and canvas inside their bicycle tyres (Williams 1977a); occasionally a used cycle tyre (with the bead removed) was placed in its entirety inside the mounted bicycle tyre (one is in my possession, obtained from Len Witt, Coolgardie).

Commercial interests produced several 'puncture proof' bands for the inside of tyres. The B & B Tire Company of Perth developed a 3½ ounce (99 g) 'chemically prepared cotton' band that was guaranteed to last (and prevent puncturing) for one year (WAWh 30/4/97:16) and was claimed by the firm to resist attempts to drive nails through the tyre (WAWh 29/1/97:17). A Geelong inventor, Snell, developed a compound which was painted on the inside of the tyre. He promoted it around Australia and rode a bicycle whose tyres were treated with it over a board of nails outside the Perth Stock Exchange; there was 'not the slightest sign of a puncture' (MorHer 20/10/97:2); Snell claimed that the compound in fact improved the running of the tyre (MorHer 13/11/97:2). Many were skeptical of such claims (Doyle 1897:17), and one user of 'Smith's' puncture proof bands felt that they were 'evidently no good as preventers' since he had two punctures in two months (XYZ 1899:293).

One of the simplest and yet most effective techniques to prevent puncturing was to use something to scrape the offending item off the tyre before several rotations firmly imbedded it. Murif (1897:88-89) cut pieces of metal to match the tyre profile and mounted them between the front
and rear forks over the tyre ('burr dissuaders', he called them). Others recommended copper wire bent appropriately, or cord or gut stretched tautly between the forks (MorHer 13/3/00:2). Costello (1977) affixed a leather boot lace to drag on the tyre, but Witt (1977) preferred a heavy watch chain, which he found to be more effective at dislodging thorns.

*   *   *

In their experimentation with and development of a variety of puncture preventatives and tyre repairs or substitutes, bicyclists provided many ingenious inventions and adaptations that were later adopted by motor vehicle users.

**Thorn Proof Tyres**

Ultimately the rural Australian cyclist's best defence against punctures was to use tyres especially designed for puncture resistance and heavy riding conditions. There were numerous efforts worldwide to produce a 'puncture proof' tyre. In some cases this involved placing a protective band inside a normal tyre. In Broad Arrow, WA, the Stone brothers sewed an additional ¼ inch (6 mm) of rubber and canvas inside tyres for commercial sale (BrArSt 9/10/97:3). However, the most popular and successful puncture resistant tyre in Australia by far was the Dunlop Thorn Proof (it was usually spelled with capital letters, but it is not known if the name 'Thorn Proof' was registered); diagrams suggest that it had twice the roadster tyre's fabric thickness and a 50 percent thicker rubber tread (Plate 4.10).

Unfortunately 'puncture proof' tyres offered more rolling resistance. A correspondent reporting on the 1897 Cycle Show in the United Kingdom pointed out to his Australian readers that 'dozens of non-puncturable tyres were on the market', but that his 'penknife blade easily perforated all those which did not appear too heavy or cumbersome for practical use'
The Reason - DUNLOP TYRES give such long wear and satisfaction on our roads is seen in the respective Tyre Sections illustrated. Note the Actual Thickness of the Pure Rubber Treads!

No other Tyres approach them in this respect, nor for the quality of workmanship throughout.

Send for copy of Illustrated Booklet, "All About Dunlop Tyres" for 1½d.Gratis on Application.

DUNLOP RUBBER CO., Melbourne, Sydney, Adelaide, Perth, Brisbane, and Christchurch.
One writer, commenting upon a sketch of a reputedly 'armoured' tyre, asked for proof that it was in fact light, fast and resilient as the maker claimed (AuWh 11/96:337). A Western Australian journalist observed that 'puncture proof' tyres were 'in many instances we think bullet proof', but were so non-resilient as to be unrideable (WAnh 10/6/98:7).

Interviews with former bush cyclists (e.g. Witt 1977; Creasey 1976) and correspondence (e.g. Doecke 1977b) confirmed that the Dunlop Thorn Proof tyre was undoubtedly heavier to pedal, although not radically so. Interestingly, some suggested that the difference was not so noticeable in paddocks and other off-road and soft riding conditions. Possibly the 20 percent greater tread width (1½ inches (3.8 cm) as opposed to the 1¼ inch (3.2 cm) roadster tyre) allowed easier rolling over soft surfaces than the narrower tyres, and hence compensated somewhat for the otherwise greater rolling resistance. This is suggested by the fact (noted elsewhere) that sand was occasionally ridden by deflating the tyres slightly; in those conditions the hard Thorn Proof was the equivalent of a soft roadster tyre.

Despite the drawback of being somewhat harder to pedal, the Dunlop Thorn Proof tyre was widely used by rural travellers and workers. Their value and serviceability was frequently cited during personal interviews, in correspondence ('of course they did puncture, but very seldom') (McTaggart 1977b), in the literature, and (not unexpectedly) in Dunlop advertisements (Plate 4.11):

'I got a pair of your special thorn-proof covers, rough outside, 3 or 4 months ago, and they are absolutely the best covers by a long way that ever I saw. There are big thorny burrs here, half-inch in diameter, and they won't pick them up. I ride everywhere, and have not got a puncture yet ... P. O'Halloran, Balranald, N.S.W.' (Worker 3/8/08:4).
To Shearers —

Thousands of you now ride from Station to Station on DUNLOP shod cycles, because you find there are the ONLY TYRES that give satisfaction. We have now issued a special strong and heavy Cover, known as the "Thorn-proof," which is splendidly adapted for the riding you do. They cost a little more, but they are well worth it.

DUNLOP THORN PROOF TYRES

will practically ensure you against punctures, and will carry you thousands of miles without trouble. We will be pleased to forward you a section of this Cover upon receipt of your name and address. These Covers can be obtained through any reputable Cycle Agent. They are branded "Thornproof."

DUNLOP TYRE CO. Waltham Abbey, Middlesex. Establishment 30 Years.
Experience proved the tyre to be highly effective in minimising tyre and tube problems; the extra pedalling effort was well worth it for many riders. There were minor competitors to Dunlop. The Silvertown I.R. [India Rubber] Company produced a heavy duty tyre (WAWh 28/1/98:17) and Wallace-Continental marketed a thorn proof tyre 'specially adapted for country' use (Worker 18/2/04:3). In Western Australia the B & B Tire Company manufactured its own tyre and internal band but sold them only locally, although a journal did pointedly note one order from the east (WASpJ 30/7/98:7).

**Tyre Quality**

Despite the preceding detailed discussions of tyre and tube damage, and the search for a 'puncture proof' tyre, it should not be thought that rural cycling was a case of continual frustration from punctures or that the Thorn Proof tyre was the only effective tyre for bush riding. In fact, most cyclists apparently did not use them and still managed to travel widely without great difficulty. One of the most impressive facts to come out of the research is the durability, serviceability, and high quality of tyres in those days.

Numerous long journeys were reportedly made with few or no punctures. Hopewell (Edge 1977) rode from Eucla, WA, to Port Lincoln, SA, without a puncture in 1903. Virgin lodged a statutory declaration after his Perth-to-Brisbane ride in 1897 stating that he had no punctures whatsoever (AuWh 1/98:23). Murif suffered only four punctures on his Adelaide-to-Darwin ride and William Snell had one puncture in his Menzies, WA, to Hamilton, VIC journey (AuWh 7/97:241). Birtles had only five punctures in a round-Australia ride early this century (Dunfile), and Frank White suffered only two punctures in his Perth-to-Rockhampton return trip in 1898 (MorHer 5/9/98:2). Certainly there is the possibility that such
accounts were not always accurate, for who could contradict such claims
made by isolated riders? However, correspondence, interviews, and the
general tone of the literature suggest that such accomplishments were
neither unreasonable nor seriously doubted. Like the bicycle itself,
tyres were a source of much amazement among the cycling world.

There is little information on tyre life. George Broadbent
returned a pair of tyres to Dunlop after 14,000 miles (22,500 km) use
(AuWh 9/96:268), and a set used by Pearson for 7,200 miles (11,600 km) was
shipped to England by Dunlop, apparently as an example of how well their
tyres could withstand 'Australian conditions'.

It would appear that many of the reported punctures in rural areas
resulted from the use of inappropriate tyres. For example, a group of
riders from a local club had many punctures during their ride from Boulder
City to Coolgardie, WA (WASpJ 30/11/01:2). In a 'hounds and hare' cycle
chase in 1901 there were several punctures near Kalgoorlie (WASp 29/6/01:4),
and riders on the Northam, WA cycle track suffered severely from
'doublagees' at one stage (Fitzpatrick 1978j). These riders were probably
using the lighter road racing (and possibly even path racing) tyres, which
had thinner treads and sidewalls, in an effort to achieve speed. That
these tyres were punctured in 'doublagee' country is no surprise. Cycle
journals commented upon the tendency for riders to fit thin tyres to road
machines in the search for speed. The Austral Wheel (4/96:99) noted a
gradual reduction in both the thickness of the tube and lining, and in
the resistance to puncturing. However, the W.A. Wheelman (4/2/98:7)
judged the Dunlops so good by early 1898 that 'cyclists have almost
forgotten that dread fear of puncturing that existed a few seasons back'.
In retrospect, the widespread use of the bicycle and tyres in often harsh
conditions, and the speed and facility with which riders were able to
traverse the countryside, suggest that rather than being the weak
technological link of bicycling, the durability and reliability of the pneumatic tyre were ultimately the key to effective rural cycling.

The high quality of former tyres raises the question of how well modern tyres compare. I am unaware of any rigorous scientific comparison of early tyre standards and performances with those of the present. McKenzie (1977b) feels that the Dunlop Olympic heavy duty tyres of the 1935 - 1945 period were of 'better quality and certainly longer lasting' than those of today. Riley (1976), a cycle shop owner for many years, thought that tyre quality declined particularly noticeably after the Second World War; McCallum (1976), from his perspective of postal delivery services, feels the same. This general sentiment tends to be verified by an off-the-record interview, in which it was suggested by one firm that over the years they had to manufacture their tyres increasingly 'to a price' as there was progressively greater competition from cheaper cycle tyres. One way that was accomplished was by cutting down on the amount and quality of materials. It was not a case of the firm no longer being able to produce an excellent tyre, but that economic circumstances and the characteristics of modern riding (mostly sealed surfaces, urban areas, and low mileage) made the better quality tyre unnecessarily expensive for most buyers. As with the case of the bicycle itself, the tyres could be considered as 'sufficient' for modern conditions.
'In these motorised days it is difficult ... to appreciate how a bicycle could be so much a part of an average person's life as an essential, permanent, economic means of transport."

- Sir Hubert Opperman (1977:19)
Chapter 5

THE 1890s: EXPLOITS AND EXHILARATION

Prologue 217.
The First Overlanders 220.
Western Australia 223.
The Bicycle Messenger Services 226.
General Goldfields Use 237.
Bicycles and Bush Clergymen 242.
The Overlanders 249.
Tourists and Road Maps 265.
The Eastern Colonies 272.
Prologue

In Australia in 1890 the bicycle was essentially the province of a relatively small but growing number of enthusiasts using solid or cushion-rubber tyred machines for touring and racing, but by 1900 the pneumatic-tyred bicycle was used throughout the continent by people from the entire social and economic spectrum. The influence of the machine was felt in all facets of society, and its impact in some areas was tremendous.

Probably two hundred thousand Australians bought bicycles during that decade (Chapter 2), often aided by 'easy terms'. Several million pounds were spent on new and used machines, tyres, tubes, accessories and repairs. It meant a large outflow of money to pay for the imported machines and parts. Not surprisingly, the focussing of so much money raised cries that great hardships were being forced upon some other segments of the economy (WAWh 24/12/96:5); other recreational, transport and consumer activities suffered when the cyclist allocated his cash.

Women took to cycling, raising many questions (Hodgson 1897). They were warned that too early or frequent riding by young girls could create 'heaps of troubles for their womanhood' (WACY 11/8/99:14). There was debate about appropriate dress for cyclistes (Fitzpatrick 1977b) and whether or not some women should be riding at all: a Cincinnati, Ohio (United States) judge ruled that

I will not allow a fallen woman to ride a bicycle in Cincinnati ... a fallen woman riding promiscuously about the city and suburbs on a wheel is capable of doing a great deal of harm not only to uncontaminated boys who ride wheels but innocent girls as well'.

In reprinting the article the Western Australian editor suggested it as a 'matter which at present is too painfully apparent in our own city of
Perth' (WAWh 31/12/97:7). Who would chaperone on those now-possible 100-miles-in-a-day trips was no mean question.

Social columns described the machine's use by doctors, lawyers, the clergy and women of undisputedly high standing. Church parades (Plate 5.1) involving scores of riders were formed on Sundays to counter some of the religious opponents (Fitzpatrick 1978i). Riding schools were established with foreign cycle instructors imported for the clients, and cycle quadrilles and other stunts and feats of skill were presented (Fitzpatrick 1976d). Medical men debated the effects of riding upon the human body and such questions were asked as 'does cycling enlarge the hands and feet?'; one writer's reply was 'If only some of the insane people who suggest such things would take to cycling themselves, and thus enlarge their brains, it would be better for everybody' (WAWh 30/7/97:7). Arguments were mounted and countered as to which was the best food, drink (Fitzpatrick 1976c) and clothing for cyclists. The Melbourne 'Psycho' cycle dealer was proud to announce the arrival of 'genuine Chicago chewing gum of various flavours' (AuWh 10/96:306); some, however, had doubts about the propriety of 'jaws and pedals going together' (AuWh 6/96:152).

Cycle racing was big business and gripped the public imagination to a degree almost incomprehensible today (Fitzpatrick 1978j). In Melbourne crowds of 40,000 to 65,000 turned out for the two-day annual Austral Wheel and Australian Natives' Association Wheel races (Plate 5.2). Some writers suggested that the possession of race tracks was the latest symbol of civilisation; others contributed esoteric discussions on 'Hypnotism and Pace-Making' (Henslowe 1897:9). Prize money was lucrative, the riding hard, the riders harder, gambling heavy, and corruption rampant. Despite the fact that the sport was not a paragon of purity, the exciting racing kept the crowds coming. The inextricable intertwining of racing performance and cycle sales resulted in an uneasy alliance of manufacturers,
Plate 5.1
'THE CYCLE CHURCH PARADE', VIC
(AuWh 1/96:16)

Plate 5.2
AN A.N.A. WHEEL RACE, THE EXHIBITION GROUND, MELBOURNE, c. 1899
(La Trobe Library)
sales agencies, riders, officials, and hangers-on.

In the publishing world the craze saw the creation of many cycle magazines. Every colony had at least one: in New South Wales, Victoria and Western Australia several were simultaneously in print at one time or another during the decade. And seemingly every newspaper and magazine had a cycling column or occasionally discussed the machine. The bicycle featured in numerous short stories and articles and was advocated, lampooned, criticised or denounced by various publishers and writers through cartoons, stories, poems and articles.

It is not often that something comes along that represents such a technological advance, is so widely acceptable, so significantly affects the use of space and time, and is so quickly affordable by so many. It is within this context that the bicycle's rural use developed.

The first Overlanders

The year 1893 was a landmark for rural cycling in Australia. The first major overland ride, from the Gulf of Carpentaria to Melbourne, was completed in September and at about the same time the first of Western Australia's goldfields cycle riders began carrying messages between Southern Cross and Coolgardie. The use of the bicycle was expanding beyond the province of urban-based tourists to encompass the realm of rural travellers and workers.

Percy Armstrong and R. Craig (Plates 5.3, 5.16) left Croydon, Queensland, in mid-August 1893. Why they undertook the ride is not known, but their destination was Sydney. They rode heavy, cushion-tyred safeties which weighed a reported 75 pounds (34 kg) (WACy 9/6/99:92), but this probably included luggage. From Croydon the two riders made for Townsville, from where they headed more or less due south, meandering along stock
Plate 5.3
'ARMSTRONG AND CRAIG. THE FIRST AUSTRALIAN OVERLANDERS', 1893
(WestMail 20/5/98:26)

Plate 5.4
TRAVELLERS TO THE WESTERN AUSTRALIAN GOLDFIELDS, DATE UNKNOWN
(Uren 1948:32)
routes through south central Queensland and northern New South Wales. They arrived in Sydney near the end of September, having covered nearly 2,000 miles (3,200 km). Craig remained there, but a Sydney cycle agent offered Armstrong the use of a new bicycle with Dunlop pneumatic tyres with which to attempt to break the Sydney-to-Melbourne cycling record of 5 days 16 hours.

After a brief rest Armstrong set out and on his first day covered 114 miles (183 km), including night riding between Mittagong and Marulan. The next day he pedalled 134 miles (216 km) to Jugiong, including night riding from Bookham. On the third day he encountered bad roads about Tarana and had to do a 'great amount of walking' (WAWh 8/1/97:13); nevertheless he completed 127 miles (204 km) and spent the remainder of the night in Albury. On the fourth day he found the roads badly cut up by teamsters and recent rains forced him to cross creeks on railway bridges. Continuing on into the night he ran into a culvert and tore out four spokes. He spent several hours by firelight respacing the remaining ones. After a brief rest he remounted and pedalled the last 67 miles (108 km) to Melbourne, arriving at noon (WAWh 8/1/97:13). Altogether he rode 578 miles (930 km) in 4 days, 3 3/4 hours (SyMail 7/10/93:767), for an average of 138 miles (222 km) per day.

The progress of the Croydon – Sydney journey had been sporadically followed in Australian newspapers. Writing three years later a journalist noted it as the first time the new machine had been 'advertised to some purpose' (Fletcher 1896:127). Armstrong's and Craig's ride had shown that the bicycle was capable of long-term use in rural areas and the 50 miles (80 km) per day average, on obsolete cushion-tyred machines, was very impressive. Armstrong's solo dash to Melbourne was closely followed and demonstrated the high rate of speed attainable by trained riders using pneumatic tyres. Although Percy Armstrong was no ordinary cyclist, he
routes through south central Queensland and northern New South Wales. They arrived in Sydney near the end of September, having covered nearly 2,000 miles (3,200 km). Craig remained there, but a Sydney cycle agent offered Armstrong the use of a new bicycle with Dunlop pneumatic tyres with which to attempt to break the Sydney-to-Melbourne cycling record of 5 days 16 hours.

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had shown what the common rider could aspire to. In the process he had become the first to pedal across Australia.

Western Australia

In comparison with the eastern colonies, cycling was slow to develop in Western Australia. In the days of the ordinaries the riders were apparently few in number. A re-emergence of cycling interest coincided with the gradual introduction of safety bicycles and the immigration of eastern states cyclists. It is not known when the first safety was brought into the colony, but the first in Bunbury reportedly arrived in 1891 (WAMh 31/12/97:XIII). However, with the opening of the Coolgardie goldfield a fortuitous set of circumstances resulted in the bicycle being eventually used on a scale unequalled anywhere else in rural Australia throughout the 1890s.

Early Western Australian cyclists toured the countryside (a lack of track racing facilities forced them to confine themselves to road racing for some years) but did not venture far. The sandy roads and great distances between the scattered settlements inhibited cycle touring (AuCy 7/9/93:5). The first known use of the bicycle outside of the southwest was a journey from Mullewa to Cue, on the Murchison goldfield, about September, 1892. The rider covered the 200 miles (322 km) in 2½ days; it is not known if he was touring or was a worker in the area (WesAusRev 4/10/92).

The first record of cycling associated with the Coolgardie goldfield is the ride of Perth cyclists Hooley and Hutchinson in November, 1892, only two months after the initial gold strike. Their return trip to Southern Cross, the furthest town at that time, was purportedly 'the longest and most difficult ride yet attempted in the colony' (WesMail 3/12/92).
Figure 5.1
THE WESTERN AUSTRALIAN GOLDFIELDS, c. 1900

[Map showing various goldfields and landmarks in Western Australia, including Lake Yelag, Lake Peake, Mt. Ophir, Goldfields, and others. Scale indicates 100 miles and 101 kilometers.]
They left Perth on Monday, 14 November, and rode to Southern Cross, via York, in 4½ days. Hooley was plagued by tube troubles resulting from the heat on the sand plain east of York. After several repair efforts and much walking he was forced to take the coach the last 38 miles (61 km) to Southern Cross, while Hutchinson rode the entire way. Hooley could not repair his tyre and returned to Perth on a coach.

Hutchinson left Southern Cross on Monday, 21 November. Not hampered by Hooley's constant stops, he rode 64 miles (103 km) in 9¾ hours (riding time) on Monday, 64 miles (103 km) in 9½ hours on Tuesday, and on Wednesday covered the last 96 miles (154 km) to Perth in 12½ hours. The latter time included the negotiation of the 20 miles of sand east of York and created a York - Perth record of only seven hours. For the entire trip he covered the 224 miles (360 km) in 31½ hours riding time, an average of 7.2 miles per hour (11.6 kph). He was met outside Perth and escorted to a welcome by a crowd at the Town Hall.

* * *

Conditions on the newly opening eastern goldfields were conducive to the adoption of the bicycle. Rainfall in the Kalgoorlie area averages only 9.43 inches (240 mm) annually (WAGR 1970:39) and decreases to the north and east. In the summer the temperatures range up to 115°F (46°C); the mean maximum is 93.2°F (34°C) in January, and the mean minimum the same month is 64.2°F (18°C) (WAGR 1970:44). Generally it appears that 1890 - 1903 was a period of 'marked overall deficiency' of rainfall (Foley 1957:181) on the fields, although there were some years with satisfactory falls. However, during the first two years, 1892 - 1894, the area was subjected to a particularly severe drought. In such circumstances the scarcity of water and stock feed and their high cost made the upkeep of camels and horses a burden, often impossible. The liability of the animals is reflected in the columns of the early
newspapers, which are replete with comments about the number of dead and
dying horses, often in the main streets. Good riding camels cost upwards
of £130 (Carnegie 1898:69-70) and a pack camel £70.

Many early travellers walked to the fields from Southern Cross,
often throwing their swags on accompanying teamsters' waggons to ease the
burden. Coaches were available, but were expensive, crowded and
uncomfortable, and often meant as much walking as riding along the sandy
track. Travellers eventually took to using bicycles (Plate 5.4), although
it is not known who took the first machine past Southern Cross, nor when.
However, given the popularity of the bicycle in the eastern states, the
large number of Victorians involved in the rush, and the publicising of
Hutchinson's rapid ride to and from Southern Cross, the machine may have
been introduced very early. The first definite reference comes from late
1893, when the bicycle was employed for delivering messages between
Southern Cross and Coolgardie, but it is probable that they were on the
scene much earlier.

The Bicycle Messenger Services

The rapid growth of Western Australia that followed upon the
Coolgardie find of late 1892 created, among other things, extensive and
voluminous communications requirements. These posed enormous problems
and, in the eastern goldfields, provided the basis for the first important
use of the bicycle in rural Australia. The colony's population, 58,600
in 1892, nearly tripled to 161,700 by 1897 (Batty 1924:App IV). The
immigrants were mainly men from the eastern colonies or the British Isles
(Crowley 1960:118). They were often well educated and a large number
were married. As gold was the colony's magnet, by 1896 nearly half of the
men in Western Australia were scattered about the eastern fields.
Ultimately most of the gold was found not in alluvial material but in
reefs, and companies had to be set up to handle the large operations required to extract it. In 1894, some 60 companies with a combined capital of five million pounds were formed to invest in gold mining (Crowley 1960:88) and by the end of 1896 there were over 300 firms involved (Crowley 1960:119). The large population and heavy investment combined with government activities resulted in a great need for communications. Residents corresponded with friends and relatives elsewhere, the press maintained a continuous stream of words chronicling the fortunes of the fields, and the very existence of mining companies, prospectors and brokers depended upon information exchange.

The most severe communications problems were faced from mid-1893 through 1896 on the eastern goldfields, where the sudden influx of a large shifting population over a vast area made the rapid provision of adequate facilities impossible. The greatest number of rushes occurred in 1893 and 1894 (Battye 1924:409-415) as prospectors explored throughout the interior. The posting of a claim or the rumour of a find was sufficient to cause several hundred men to immediately set off. Some of the rumours were groundless, such as the Mount Youle and disastrous Siberia rushes of 1893. Some finds were disappointing and relatively few prospectors remained. A few were initially fabulous, such as the Londonderry rush south of Coolgardie, but did not live up to expectation. Others proved rich and the population progressively grew, such as at Menzies and Kalgoorlie. The growth and continual redistribution of the population coupled with the ephemeral nature of many of the communities made it hard to rationally allocate postal and telegraphic staff and facilities.

The first official Coolgardie post office was not opened until September, 1893 (Collas 1960), one year after the initial rush. While later mining centres generally acquired post offices somewhat quicker,
the delays were often extensive. In a bid to provide a modicum of services in the interim, the post office frequently paid private individuals, known as Receivers of Mail Bags (RMB), to handle mail in a particular location. Most communities, however, experienced a lag between initial settlement and institution of even RMB services. Hannan's (Kalgoorlie) was rushed in June, 1893, but did not have a post office until eight months later, despite an extremely large population about the immediate area. Menzies, founded in the latter quarter of 1894, obtained its RMB in March, 1895, and a permanent post office seven months after that. The Dundas field was proclaimed in August, 1893, but no post office was established until April, 1895. It was not until late 1895 that the post office satisfied the demand for postal facilities in most centres; even then, however, Mt. Malcolm, Yerilla, Boulder, Mt. Margaret, and Niagara had yet to see their first.

The establishment of official facilities did not in itself guarantee reliable, fast communication. The task of the RMBs was 'indifferently performed on many occasions' (Collas 1960:5) and delivery was often frustratingly slow, with occasional bags falling off the vehicles (MtgMag 13/6/96:4). The Telegraph Department, in particular, was unable to cope. Services were chaotic and messages paid for at telegraphic rates were at times sent to Perth by ordinary mail (Trotman 1947:95). One editor, referring to the situation in late 1895, was not concerned about the delays:

Folks say that they can get their telegrams through by team almost as rapidly as by wire, and that they can place more reliance upon a camel than upon the telegraph wires. Well, what if they can. Surely it does not make much difference to a business man if his wires happen to be delayed a week or ten days. They should take the gifts the gods provide and be thankful' (CooRev 24/8/95:8).

Very few others shared his views. The system was so overwhelmed by the end of 1895 that communications were a principal subject at
large protest meetings held in Coolgardie and Kalgoorlie (Batty 1924: 427).

Amidst this erratic, uncertain and obviously unsatisfactory situation several bicycle delivery services were started. Australian philatelists have given credit for founding the first cycle messenger service to James A. Healey. (The philatelists are interested because Healey issued stamps for his service. This eventually brought him into conflict with Western Australian government officials, as a result of which the stamps were suppressed). However, the evidence is confusing and there is considerable doubt as to whether Healey was even involved initially. The philatelists rely upon two brief comments in the *Australian Philatelist* of May, 1896 and January, 1897. The first quotes part of a letter from Healey to a friend, particularly with regard to the stamps and relatively recent delivery services. The second reports on a letter written by Healey to the journal; unfortunately they did not print the letter, but a mixture of references to it and comments upon the bicycle service was put together by a journalist. There is no specific quotation, nor a specific statement that Healey founded the service.

A business card of the Coolgardie Cycle Express Co. (Hornadge 1974:11) was reprinted in commemoration of the firm's founding. The card, which the Stamp Show organising committee says was printed in 1894, lists Healey as an agent. However, an investigation of statements on the card suggests that it was printed in 1895, not 1894. The card indicates that 'Regular Cycle Mail leaves this office for Hannan's, (daily) Menzies, Niagara, Yerilla, Pindinini, Mt. Margaret, Norseman, Dundas, &c.' Yet, the *Australian Philatelist* (25/1/97:63-64) drawing upon Healey's own letter, specifically noted that regular cycle mail services were not established to Menzies until April, 1895 and on to Niagara somewhat later. It was not until June, 1895 that a regular cycle service was established.
to Yerilla and Mount Margaret, and regular service to Hannan's was only established in October, 1895, as a response to the delays in telegram transmission. Hence the card appears to have been produced in late 1895, at which time Healey was an agent.

The matter of who founded the first goldfields cycle delivery service is further confused by a series of references to several such agencies operating in the Coolgardie area. Healey's card, referring specifically to the 'Coolgardie Cycle Express Co.' is probably from 1895. However, a prospectus for the 'Cyclists' Express Co.' was printed on 21 April, 1894, in the Coolgardie Miner, clearly naming 'the promoters, Messrs. Bamlett and Williams'; an accompanying editorial about the service referred to a Mr. Summerhayes helping to inaugurate the service. Healey is not mentioned in either the prospectus or the news reports. Further, Piersenne's The Western Australian Directory 1893 - 1895, published apparently in late 1894, cited a 'Goldfields Cycle Express Co.', but gave no other details.

In summary, James Healey is not mentioned in any references to cycle delivery services until the printed card of late 1895. It appears that someone else was probably the initiator of cycle delivery services on the Western Australian goldfields; in all likelihood it was Bamlett and/or Summerhayes, the persons most frequently mentioned in connection with the early days of cycle delivery services on the fields.

Another unfortunate result of the philatelists' writings is that they leave the impression that for some years there was only one cycle express company on the goldfields. This is a natural result of their focus upon the stamp aspects, as the Coolgardie Cycle Express Co. was the only one to issue stamps, until another small service did so from February to June, 1897 in the Lake Lefroy region (AusPhil 24/12/97:57).
In fact, there were many cycle express operations, ranging from major networks to individual riders taking casual orders. After completing his overland ride in September, 1893, Percy Armstrong eventually went to Western Australia, arriving on the goldfields in March, 1894 (WANot 20/11/25:5). He established a 'Special Bicycle Express' sometime thereafter, his first ride being to Kurnalpi. Later in the year he founded the first bicycle sales agency on the field, which eventually expanded from its Coolgardie base to become the largest and most extensive cycle agency network in the colony, with outlets in nearly all goldfields communities and Perth and Fremantle. Like the Coolgardie Cycle Express Co., Armstrong located his office near the Coolgardie Post Office.

The Coolgardie Cycle Express Co. initially delivered between Coolgardie and Southern Cross, but the network quickly expanded. By early 1894 it was serving Kurnalpi, White Feather, I.O.U., 25 Mile, and Hannan's (MinRig 23/6/94:5), and was extended 140 miles (225 km) south to Dundas and Norseman. By early 1895 it had been expanded to include Menzies and later Niagara. By mid-1895 services were in operation to Mt. Margaret, Yerilla, and as far north as Lake Darlot (AusPhil 28/5/96: 286). Regular services were scheduled to these centres in addition to the 'special' messages that could be contracted at any time. The business card listed at least six riders in service. Armstrong's network also served the entire eastern goldfield and extended across to Cue on the Murchison field as well; he had as many as ten riders working for him. One writer, after examining the company's books, concluded that Armstrong's riders covered a total of 260,000 miles during the network's existence (WestMail (Xmas No.) 12/97:101).

There were numerous smaller cycle messenger services on the goldfields. One operated in the Lake Lefroy region between February and
June, 1897; they issued stamps and apparently delivered between Lake Lefroy and Kalgoorlie or Coolgardie, possibly both (Collas 1960; Aus Phil 30/3/97:87). A Mr. Crump pedalled mail (including newspapers and parcels) on a scheduled route between Coolgardie and Lawlers via Lake Dariot (CooRev 31/8/95:14). Special dispatch rides were carried out by many individuals and organisations. In Menzies, for example, a cyclist, Hatley Ellis, operated through the local auctioneers and agents; orders left with them were carried 'to all outlying districts' (MenMin 14/3/96: 1). Many cycle dealers carried messages when requested.

The forte of the cycle messengers was rapid delivery. Carnegie (1898:119) noted that the cyclists could do 100 miles (161 km) in a day, and when 'messages had to be hurriedly delivered ... a cyclist was approached in preference to camel or horsemen' (Kimberley 1897:322). The speed and endurance of the cycle riders was considered spectacular in the circumstances. The Prospectus for the Coolgardie Cycle Express Co., indicating that the Coolgardie-to-Southern Cross ride would be done in 10 hours, led one writer to suggest that a relay rider should be stationed at Boorabbin (the halfway point) as 'For one man to continue very long in doing the journey in ten hours ... is quite out of the question' (MinRig 23/6/94:5); one man described the road as 'sand, sand all the way' (Porter 1961:148). However, it appears that camel teams used an alternative route to the north of the main road between Boorabbin and Coolgardie (Young 1953:59) and it is possible that the cyclists used the camel pad, thereby avoiding some of the road used by the teamsters. Whether they actually attained the 10 hour time is not known; Healey (AusPhil 25/1/97:63) stated that a ride of 12 hours was the fastest recorded. In comparison, the record camel ride between Coolgardie and Southern Cross was 21 hours (Casey 1973:51).
Armstrong's first ride was an 85 mile (137 km) delivery to the Kurnalpi area and a return the following day (WesMail (Xmas No.) 12/97: 101). On one occasion he covered 105 miles (169 km) from Menzies to Coolgardie in 13 hours and continued on to Widgeemooltha the same night - a total of 152 miles (244 km) in 19 hours; in the next two days he rode an additional 190 miles (306 km), an average of 114 miles (183 km) per day over three days; this compares favourably with his 138 miles (222 km) per day between Sydney and Melbourne. Because riders were able to cover the 25 miles (40 km) between Kalgoorlie and Coolgardie in less than 1½ hours, they were hired to make urgent runs between the communities when delays occurred in telegraph transmission (SyMail 7/9/95:512). In 1897 a pair of riders delivered a dispatch for a mining company between Cue and Lake Darlot in 61 hours. Although the trip had been done in quicker times the fact that 540 miles were ridden in 'rain, adverse roads, and mud' in a 136 hour return trip was newsworthy (Morller 21/7/97:2). Such speeds eventually contributed to an almost legendary status for the special riders and it is not surprising that they were labelled 'the cycling telegraph' (CooMin 21/4/94:2).

Such services were not cheap. One newspaper reported that some 'very large sums have been paid' on occasion (MinRig 23/6/94:5). The first riders between Southern Cross and Coolgardie reportedly charged £25 per message (AusPhil 25/1/97:63), which was the cost of steerage class passage from London to Fremantle in 1894 (Pierssené 1894:62). With the establishment of regular services the charges decreased. Prices depended upon distance, urgency and weight, but the Coolgardie Cycle Express Co. applied the following standard rates for letters: between Coolgardie and Dundas, from 6d. to 5s; from Coolgardie to Menzies and Niagara 2s. 6d., and 5s; to Mt. Margaret 1s., 1s. 6d., 2s. 6d., and 5s. However, this route was partially supported by mining company subsidies, presumably to
assure service in the district. Between Kalgoorlie and Coolgardie the charge was 2s. 6d. per message, or 10s. 6d. for a weekly subscription (AusPhil 25/1/97:64); normal postal and telegraphic costs had to be added to the cycle charges, where appropriate. For the companies it appeared to have been highly lucrative. On the Lake Barlot - Coolgardie run, the most remunerative, Hamblin reportedly earned up to £50 per trip for the organisation (AusPhil 25/1/97:63).

The cycle messenger services were eventually closed down as telegraph lines and regular mail services were established. The last route operated by the Coolgardie Cycle Express Co. (to Mt. Margaret) finished in December, 1896. The brief Lake Lefroy service, during the first half of 1897, was closed when government facilities were established. Even after the opening of post offices and telegraph services, some special cyclists continued operating because they were quicker, the regular services were too infrequent, or the government could not cope with the demand. As late as 1898 one cycle express firm, 'Express Delivery Cycles', was still in business in Coolgardie, delivering messages, newspapers, or parcels at short notice to 'all parts of the Fields' (CooMin 26/11/98:4).

Given the close association of cycle messengers with cycle agencies, the closure of the exclusive messenger services undoubtedly did not mean the end of cycle deliveries, especially in the smaller communities and isolated areas. Witt (1977) suggests that mining companies continued to use cycle messengers for a couple of decades to reach isolated operations.

Price (1896:74) suggested that the riders earned up to £10 per week, although if the early cost of messages is any guide, some must have made more than that on occasion. They earned it, however, for aside from the speed and endurance they displayed, they rode under harsh conditions. Because of the need to travel fast and to carry as much mail as possible, they were 'unable to carry blankets or provisions except of the scantiest...
description, and took their chance of hitting off the camp of some wayfarer (Carnegie 1898:119), and failing that had 'perforce to make the best of a fire as a substitute for a blanket, and to be content with a hungry stomach, in place of having a meal' (Carnegie 1898:118).

The riders received great respect on the goldfields both for their physical prowess and for maintaining a quick link with the rest of the world. The extent of feeling at the time was well expressed by Carnegie (1898:119) who noted that when a cyclist was caught between towns at night an individual along the road 'would always be ready to show what hospitality he could, to messengers of so much importance. To have to part with one of your blankets on a cold night for the benefit of another traveller, is one of the severest exercises of self-denial'. An undated message regarding a passing cyclist carrying mail states it more succinctly: 'Let him have anything he may want for the road and oblige' (Coolgardie Museum).

The existence of the messenger services was widely acknowledged across Australia (e.g. HawCit 12/5/94; SyMail 7/9/95:512) and the Western Australian Commissioner of Lands (WAWh 16/6/97:14) and the Western Australian historian Kimberley (1897:322) said that the riders played an integral role in the development of the goldfields. It is impossible to assess the matter in any quantifiable way and it will probably never be known what fortunes were won or lost by the cycle riders' deliveries; as with all information conveyance, the cost of transmission is often no reflection of the value of that conveyed.

More than in any other single situation in rural Australia, the cycle messenger riders demonstrated the great practical value of the machine to a wide audience, both locally and vicariously. The adoption of the bicycle on the goldfields and the subsequent spate of spectacular
overland rides which popularised the machine's rural utility owe much to the early express riders.

General Goldfields Use

The bicycle was adopted to serve the needs of a wide variety of individuals and institutions: 'Cycling was never a novelty on the Coolgardie goldfields; its extreme utility and great cheapness as compared with any other method of conveyance made the bicycle essential' (Prospector 1896:208). In late 1894, the Western Argus of Kalgoorlie (8/12/94:2) editorialised in its third issue that

One of the great institutions in the district is the trusty bicycle, a machine which is daily becoming more useful. There are a good many machines in Hannan's, White Feather, Coolgardie and surrounding districts, and it is no uncommon sight to see ministers of religion, business people & c. making their way on the iron steed to Kurnalpi and other districts.

In 1896 one writer estimated that Coolgardie had

more bicycles in proportion to population than any other Australian town. Looking down Bayley Street the first thing noticed by a stranger is the great number of cycles lining both sides of the street, and dodging hither and thither the whole length of this well-known thoroughfare, giving it a very modern aspect (Prospector 1896:209).

The reaction was echoed by many visitors to the fields. After arriving in Coolgardie at night Walker's (1897:308) first impression upon awakening the next morning was that 'bustling merchants and clerks were hurrying past on bicycles to their various occupations'. Price (1896:67) noted the town's 'dusty roadway crowded with teams, camel caravans, buggies, horsemen, and bicycles'. His sketch of Coolgardie's main street (Plate 5:5) featured a cyclist in the forefront. Vivienne (1902:182) commented that Coolgardie streets were the 'most level and the best for cycling I have ever ridden on'. The bustle was not restricted to Coolgardie; one visitor to Cue commented that 'The first thing that struck [me] ... was the
Plate 5.5
'BAYLEY STREET, COOLGARDIE', WA
(Price 1896:66)

Plate 5.6
'AN OLD TIME COLDFIELDS CYCLIST'
(Thiel 1901:162)
Plate 5.8
'RETURNED FROM Mt RAGGED RUSH', WA, 1895
(Western Australian Government Tourist Bureau)
number of bicycles in use ... everyone seemed in too much of a hurry to walk' (WAWh 21/5/97:5).

Many visitors mentioned the bicycle's use in both rushing strikes on the goldfields (Price 1896:73) and for general prospecting (Plate 5.6) (Bedford 1976:189); a contemporary historian noted that the machine had been widely used throughout the Yilgarn Plateau (Plates 5.7, 5.8) in the course of exploration (Kimberley 1897:322). At a deep lead discovery at Kanowna the roads had been crowded with 'cyclists, buggies, etc.' (BrArSt 3/11/97:4). In referring to one man's pegging out a claim, one writer commented that 'almost as soon as he had put his pegs in, he was surrounded by the usual crowd of peggars on bike, buggy, cart and shanks' pony' (Coo Min 30/9/98:7). In Kalgoorlie in 1895, when Father Long announced the site where the 'Sacred Nugget' had supposedly been found (it was a hoax), the crowd of intending rushers included many bicycles. A stampede followed his announcement, with 'horses galloping, cyclists scorching, and buggies madly driving' (MenMin 20/8/98:18).

A famous incident involving the bicycle's use during a rush was a fruitless dash to Mount Ragged, located some 240 miles (386 km) southeast of Coolgardie, near Israelite Bay. Through isolated and harsh country at least four men (various sources suggest even more) pushed their machines through thick vegetation that had to be occasionally cut to allow passage. The rumour proved groundless and some of the cyclists, arriving early on the scene, turned back many men while returning to Coolgardie (GooRev 10/8/95:11; GooPio 21/8/95:6). The episode was widely reported in eastern newspapers (e.g. SyMail 3/8/95:252). Price (1896:74), when writing about one of the riders, noted that 'the appearance was most pitiful and bore eloquent testimony to the hardship he had gone through; though strangely enough, his bicycle was comparatively uninjured'. 
There was hardly an activity on the fields that seemingly could not benefit from the bicycle. Mr. Sing, a government employee serving plaints out of Broad Arrow, received 1s. per mile and 5s. per plaint served. He originally carried out his task on horseback and with camels, but switched when he found 'the bicycle being far and away the best for travelling purposes' in the area (NWH 15/1/97:15). The Sydney Mail's mining column was normally devoted to such matters as the depths of shafts and assay reports. However, from the Western Australian correspondent there were occasional discussions of mine managers and visitors from the east using the bicycle during their surveys of facilities. One visitor pedalled 520 miles (837 km) on a tour of mining sites and activities between Kalgoorlie and Mount Magnet (DeLand 1896). An understanding of the nature and extent of the machine's use on the goldfields is perhaps best obtained by looking at one group of users in detail.

Bicycles and Bush Clergymen

The question of whether or not the bicycle was a basically evil device was much debated in religious circles around the world when the machine made its appearance on the scene. The bicycle ostensibly purveyed its rider unerringly into immorality and sin — if not hell itself. For many years the attitude of various religious groups in Australia towards the bicycle, taking their cue from Heaven and abroad, was reserved at best, and more commonly condemnatory and antagonistic. However, with the influx of vast numbers of safety bicycles the church and society had to revise their position. By the mid-1890s the use of the machine by such respected members of the community as doctors, academics and government figures had led to a gradual religious acceptance. However, it appears that generally the higher his rank, the less likely a clergyman was to be found pedalling.
Plate 5.9
THOMAS TRESTRAIL, c. 1896
(Western Australian Government Tourist Bureau)
Smith's (1972:71-75) study of the bicycle in the United States suggests that by 1895 or 1896 the machine was accepted by the clergy, if sometimes resignedly, in the major cities, although there was still frequent resistance in rural communities. However, the Australian acceptance appears to have been a bit slower in coming. In early 1898 the New South Wales Cycling Gazette wrote that 'the church seems still undecided in its attitude on the question of cycling' (CyGaz 29/1/98:404), but suggested that the Reverend Daniel Murphy of Willoughby's use of the machine was evidence that the bicycle had probably received the clerical stamp of approval. The writer went on to state that Murphy, as a result of his solo ride to Melbourne in late 1897, was 'the first member of the clergy to essay a journey of any length'.

Unfortunately, as with many other cycling matters in Australia, the eastern journal failed to take into account Western Australia, where clergymen had been using the bicycle extensively on the goldfields for at least 3½ years. One, Thomas Trestrail, sought aid to buy his bicycle by writing to the editor of the Western Mail in Perth, in July, 1894 (the letter was reprinted in a Coolgardie newspaper the same month). In asking for a subscription to be established in his favour, he pointed out that

I have no money, it is very scarce here. From outlying places comes the call to me - 'Come and help us' - but I am unable to respond to these calls except that I walk distances of 30 to 100 miles. A good bicycle (none but a good one is any good here) can be delivered to me for about thirty five pounds'.

Other goldfields clerics quickly adopted the bicycle to solve the problem of transport. Trestrail (Plate 5.9) could have been speaking for all clergymen when he cried; 'Mothers and sisters of WA. Your sons and brothers are surrounded by very strong influences. Send me a bicycle and I will go to them' (Lang 1977a). And so they did. Trestrail conducted services at Kalgoorlie from his Coolgardie base and various other clergymen
used the cycle: Tom Allan on the Kalgoorlie - Kambalda circuit (O'Brien 1972a); Father Duff, 'the cycling priest of Coolgardie' (Calvert 1897); Frank West, of Boulder (O'Brien 1972a); Arthur Fry and Arthur Hay of Coolgardie (O'Brien 1972b); and H. Poole of Menzies, 'a scorcher at that' (WAWh 24/12/96:9). All were among the examples of 'muscular christianity' to be found on the fields (WACy 5/5/99:16).

The Rev. A. Sussex, appointed to Mt. Magnet in 1899, covered thousands of miles on his machine ministering to a vast area. On 26 November, 1900, he wrote to his fiancée:

During the last week my work has taken me to Morgans, Mertondale, Tampa, Kookynie, and Niagara, far distant fields. This week I go to Diorite, away north. Next week, I expect to visit Mertonale, again, and the following week Darlot, 90 miles north and Lawlers, 88 miles NW. The distances are great but the work must be done (Sussex 1900).

His 400 miles (644 km) of travel in the four weeks is even more impressive when it is appreciated that his temporary base in Leonora was itself 263 miles (423 km) from his Mt. Magnet headquarters.

Two years later he commented that

When in Lake Way last week a happy idea struck me. By running down to Mount Magnet via Cue, I could cut off fully 100 miles, no small consideration on summer days (Sussex 1902).

His first day on that trip he covered 130 miles (209 km), camping out at night. By 10:30 the next morning he had put in another 60 miles (96 km) to reach Cue. The next day he rode the 56 miles (90 km) to Mt. Magnet 'in really good style'. The following afternoon he pedalled to a friend, 40 miles (64 km) distant, where he spent the night. The following day he made for Lawlers, 140 miles (225 km) distant. He rode about 425 miles (689 km) in the five days, getting back to Leonora in time to rest a day before conducting services on Sunday.
With such travels, it is not difficult to believe Rev. Hay's account of having ridden 7,000 miles (11,300 km) in one year (MorHer 18/8/97:2). For a six day work-week that amounts to about 22½ miles (36 km) per day, not at all unreasonable for a circuit including Coolgardie, Kambalda, Bonnievale, Burbanks, and Kintone (O'Brien 1972b). In fact, in 1897 the Rev. Hay made a 350 mile (563 km) return-trip from Coolgardie to Mount Malcolm which led to the permanent establishment of clergy in the area; the trip was cited as an indication of the 'aggressive spirit' of Wesleyan Methodism on the fields (BrArSt 30/6/97:4). In comparison, the Rev. Benjamin Moffatt's 2,500 miles (4,000 km) of pedalling and walking in the Kalgoorlie area over a 16 month period in 1895 - 1896 (O'Brien 1972c) seems relatively insignificant.

Perhaps the most famous ride in the goldfields was by the Rev. A. Burton, who left Norseman to pedal 120 miles (193 km) east to Balladonia to conduct a wedding, with only one intervening property along the way. He wrote about the trip in the West Australian Church News (15/8/99:125 - 126; Fitzpatrick 1977a), and the story was subsequently picked up and reported by various newspapers and eventually recounted by goldfields chroniclers as part of the local lore (Vivienne 1902). However, the journey was in fact no more spectacular or unusual than many others ridden by the 'sandgroper' clergy in the course of their work.

The Reverend William Kennedy, of the Baptist Union of Western Australia, ministered to a vast area: it extended from the Coolgardie railway line south to the coast, and from the Indian Ocean east to the Kalgoorlie - Esperance railway line. His bicycle was ridden for many individual trips of hundreds of miles in that area while establishing a Baptist Church network in the late 1890s and early 20th century (Gomm 1935:40, 66-67). In areas where food and water were not critical, he also used a horse and sulky.
The clergy on the Western Australian goldfields were probably among the world's leaders in adopting the bicycle for daily use. I am aware of no arguments or discussions, such as occurred elsewhere, as to whether or not it was appropriate. As with many other travellers on the field, it presented itself as an obvious solution to a difficult problem. And, as was wont with other situations in the hot, arid, expansive Australian bush, when it came to transport, God was generally conceded to be a very practical deity; the theological debates so prevalent elsewhere most likely seemed far removed when viewed from the perspective of the Yilgarn Plateau. That Westralians were undoubtedly in the forefront of clerical utilisation of the bicycle is evidenced by the reaction of a London newspaper. It was responding to an interview in which a man returned from Western Australia had advocated the use of bicycles for the English clergy, including the Bishop. The paper advised that 'It is scarcely the office of a Bishop to be roving about his Diocese on a cycle gossiping with old people and children ... Dr. Kennion has evidently not quite shaken off his Australian experiences' (Morlier 6/8/98:2). It must have appeared obvious on the fields that something so efficient at delivering the message of God to the parishioners, and the bush parishioners to the Church, could not be entirely evil.

The use of the bicycle by rural clergymen was not restricted to Western Australia, of course. The Reverend Gilbert White, in the year immediately preceding his consecration as Bishop, used a bicycle in his travels through the country west of Townsville, QLD. One year he tried a horse and buggy, but the blacksoil plains proved too difficult to negotiate. The following year he rode a horse but it ate poisonous plants and died. Consequently he carried out the journey on bicycle in 1899. As with many rural cyclists he found 'Great ingenuity required to reduce my luggage, including books and a large water-tin, to 40 lb.
in weight and a convenient shape' (White 1919:35). Although he commented
upon the ease with which he could travel with the wind behind him, he
also had to walk some 25 miles (40 km) at one stage into the face of a
southerly gale. On one occasion he fractured the frame on a rough basalt
road and had to ride with a makeshift repair. A clergyman at Chinchilla,
QLD, used to make a once-monthly circuit to Drillham and back (Little 1977),
and in late 1896, Richardson (1897), during his trans-Nullarbor ride, met
the Denial Bay, SA, minister on his bicycle east of Penong.

* * *

Evidence suggests that the bicycle was probably more important and
more intensively used for transport on the Western Australian goldfields
than in any other rural area of the world in the 1890s. Certainly, no
other part of Australia saw such use, and I am aware of no suggestion of
such intense use elsewhere. In addition to written material, the most
striking evidence lies in photographs. In contrast to pictures taken in
the eastern colonies, where few bicycles are to be found in rural or small
community scenes, Western Australian photographs contain innumerable
examples of bicycles or cyclists either featured or just casually visible
(e.g. Plate 5.10). As one writer stated, 'In no other colony has the
cycle been put to such severe practical tests as in Westralia' (AuWh 8/96:
209). I have found no reason to disagree.

The Overlanders

For more than three years after Percy Armstrong completed his
Croydon-to-Melbourne journey, there was no other transcontinental bicycle
ride. However, from late 1896 through mid-1900 some two dozen men under-
took a series of often widely publicised overland rides that convincingly
demonstrated the cyclist's ability to traverse some of the harshest
and most isolated parts of the continent (Figure 5.3). The majority of the rides began in Western Australia (Table 5.1) and most of the riders had cycling experience on the Western Australian goldfields.

I have found no references to any cyclists crossing the Nullarbor to the Western Australian goldfields in the 1890s. However, rides east from the West Australian goldfields were occasionally proposed by early 1896. J. Riley and C. Reid, for example, planned to pedal from Menzies, but apparently gave up the project when the W.A. Cycling Club refused to 'grant a bonus' to riders attempting the journey (BellWA 8/8/96:3). On 24 November, 1896 Arthur Richardson (Plate 5.11), son of a Kalgoorlie doctor, left Coolgardie for Adelaide. He reached there 31 days later, the first man to complete the journey (Richardson 1897); there is no evidence that anyone had actually attempted the ride before him. A few months later William Snell rode from Menzies to Melbourne in only 28 days (Aust 6/97:189). After a period of prospecting, the James brothers left Mt. Magnet to return to their home in Geelong, taking 48 days for the ride (James 1897a, 1897b, 1957). On September 1 William Virgin (Plate 5.12), a former cycle express messenger rider, (CyGaz 6/11/97:208) left Perth for Brisbane; he arrived 60 days later to wide acclaim for the longest single ride yet undertaken in Australia (MornHer 24/2/98:2). In mid-September Bails and Edgar left Mt. Magnet for Adelaide, but received relatively little press coverage because they were not moving at a record-breaking pace (MornHer 16/10/97:2).

In 1898 J. 'Scotchy' Wright and Jack Denning began a race from Perth. However, a broken chain out of Norseman ended Denning's effort and Wright suffered from equipment troubles and personal illness and required 44 days to reach Melbourne (Wright 1898). Wright prepared a map and route notes for subsequent riders (Western Australian Museum).

On May 9, 1898, Frank White left Perth for Brisbane (Plate 5.13) in an
The dashed lines indicate partially known or suspected (but unconfirmed) routes.

The solid lines approximate known routes or those most commonly used.

Overland Cycling Routes
Figure 5.3
<table>
<thead>
<tr>
<th>Route</th>
<th>Riders</th>
<th>Dates</th>
<th>Days</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>I. North - South</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Croydon, QLD - Sydney</td>
<td>R. Craig</td>
<td>7/8/93 - 9/93</td>
<td>50?</td>
<td>WAWh 8/1/97:13</td>
</tr>
<tr>
<td><strong>II. West - East</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coolgardie - Adelaide</td>
<td>A. Richardson</td>
<td>24/11/96 - 24/12/97</td>
<td>31</td>
<td>Richardson 1897</td>
</tr>
<tr>
<td>Mt. Magnet, WA - Melbourne</td>
<td>F. James, B. James</td>
<td>17/8/97 - 3/10/97</td>
<td>48</td>
<td>James 1897a, 1897b</td>
</tr>
<tr>
<td>Perth - Brisbane</td>
<td>W. Virgin</td>
<td>1/9/97 - 31/10/97</td>
<td>60</td>
<td>MorHer 24/2/98:2</td>
</tr>
<tr>
<td>Mt. Magnet, WA - Adelaide</td>
<td>? Bails, ? Edgar</td>
<td>15/9/97 - 15/10/97</td>
<td>30</td>
<td>MorHer 16/10/97:2</td>
</tr>
<tr>
<td>Perth - Adelaide</td>
<td>J. Wright</td>
<td>28/3/98 - 10/5/98</td>
<td>44</td>
<td>Wright 1898</td>
</tr>
<tr>
<td>Perth - Rockhampton</td>
<td>F. White</td>
<td>9/5/98 - 11/7/98</td>
<td>62+</td>
<td>MorHer 10/10/98:2</td>
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<tr>
<td>Perth - Armidale, NSW</td>
<td>J. Denning</td>
<td>10/5/98 - 7/6/98</td>
<td>5½</td>
<td>MorHer 4/7/98:2</td>
</tr>
<tr>
<td>Perth - Adelaide</td>
<td>P. O'Dea</td>
<td>10/10/98 - 28/10/98</td>
<td>18½</td>
<td>MorHer 29/10/98:2</td>
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(Continued)
### III. Via Alice Springs

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</thead>
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<td>J. Murif</td>
<td>10/3/97 - 21/5/97</td>
<td>73</td>
<td>Murif 1897</td>
</tr>
<tr>
<td>Darwin - Adelaide</td>
<td>T. Coleman, A. Mather</td>
<td>12/8/97 - 15/10/97</td>
<td>65</td>
<td>Coleman 1898a - 1898f</td>
</tr>
<tr>
<td>Darwin - Melbourne</td>
<td>A. MacDonald</td>
<td>22/8/98 - 24/9/98</td>
<td>34</td>
<td>ACA 1898</td>
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</tbody>
</table>

### IV. Circum-Australia

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<th>Date Range</th>
<th>Number</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perth (Clockwise)</td>
<td>A. Richardson</td>
<td>5/6/99 - 4/2/00</td>
<td>245+</td>
<td>Richardson 1900</td>
</tr>
<tr>
<td>Melbourne (Counter-Clockwise)</td>
<td>A. White</td>
<td>(see footnote 5)</td>
<td></td>
<td>Clune 1942</td>
</tr>
<tr>
<td>Brisbane (Counter-Clockwise)</td>
<td>D. MacKay</td>
<td>29/7/99 - 29/3/00</td>
<td>340+</td>
<td>Clune 1942</td>
</tr>
<tr>
<td>Melbourne (Failed)</td>
<td>F. White</td>
<td>(see footnote 5)</td>
<td></td>
<td>Clune 1942</td>
</tr>
</tbody>
</table>

### V. Miscellaneous

<table>
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<th>Name(s)</th>
<th>Date</th>
<th>Number</th>
<th>Reference</th>
</tr>
</thead>
</table>

(Continued)
Footnotes

1. Depending upon the times of departure and arrival, the actual journey times could have been more than a day less than indicated (where plus signs are given, the actual journey time is correct to the day).

2. Information about each journey has been obtained from many sources; those cited are among the better descriptions of the journeys.

3. Several riders actually departed from Fremantle after dipping their wheels in the ocean.

4. Coleman and Matter rode on to Melbourne, but I did not determine the exact date of arrival there.

5. Alex and Frank White left Melbourne about two weeks before meeting MacKay in Brisbane, but I did not confirm the exact date of departure. Alex White returned to Melbourne apparently only a few days after MacKay passed through. It is not known when Frank White returned.
Plate 5.11
ARTHUR RICHARDSON, 1897
(Battye Library)

Plate 5.12
WILLIAM VIRGIN
(CyGaz 6/11/97:208)
Plate 5.13
'SEND-OFF OF THE OVERLAND WHEELMAN, F.A. WHITE'
(WesNail 20/5/98:26)

Plate 5.14
JEROME J. MURIF
(AuWh 7/97:222)
attempt on Virgin's record. The next day Denning left and the two engaged in a race across the continent that received widespread publicity and was followed in many newspapers on a day-to-day basis because they were ahead of the record at virtually every stage of the way, and passed and repassed one another at various points. While in the lead, Denning's ride abruptly ended with a fall and hospitalisation in Armidale, NSW. Frank White pedalled through Brisbane (breaking Virgin's record by several days in the process) and on to Rockhampton, requiring only 62 days for the nearly 4,500 mile (7,240 km) ride. After resting several days he began the return journey to Perth, and completed the 9,000 mile (14,500 km) trip in five months, becoming the first known man to pedal west across the Nullarbor in the process (Motor 10/10/98:2).

Pat O'Dea rode from Perth to Adelaide in only 18½ days in October, averaging 103 miles (166 km) per day across the Nullarbor; he continued on to Melbourne, raising his daily average for the entire crossing to 110 miles (177 km) (O'Dea 1977a, 1977b). In late 1898 Porteus and Donald pedalled from Perth to Adelaide on a Perth-built bicycle (the Endean & Wemyss 'Arrow') and tires (B & B Tires), the longest 'all-Australian' ride yet made (WAH 16/12/98:16); however, they were not after records and received scant attention for their efforts.

On the 10th of March, 1897 Jerome J. Murif (1897) (Plate 5.14) left Adelaide to attempt the first ride through Central Australia. His journey was deliberately slow (he spent a week touring the Alice Springs district, for example). He required 74 days to negotiate the route, which because of the extensive sand, was more difficult than the Nullarbor; long before he finished the journey he was the subject of many telegraph reports from stations along the way. By the time he reached Darwin a team of racing cyclists was formed and sponsored by Dunlop and the Austral Cycle Agency to break the obviously 'slow' record. The first party, Tom
Coleman and Charles Greenwood, left Darwin but abandoned the attempt shortly afterwards when Greenwood fell ill. A replacement, A.W.B. Mather (Plate 5.16), arrived in Darwin and on 12 August, 1897 they left on the record attempt. Mather was plagued with a broken fork (Coleman's machine performed faultlessly on the journey), and strong headwinds and intense heat faced them continually. They were frequently separated as Tom Coleman attempted to push on to break the record; he eventually nearly died of thirst and had to cut the telegraph wires to get assistance from the line patrol. At Oodnadatta, SA, Mather telegraphed that 'In all my experience I have never yet met such terrible going.' (AWH 15/10/97:22); they broke the record by only a few days and given their financial and administrative support, the attempt was considered an outright failure. To make matters worse, Coleman was served with writs for £150 worth of repairs to the line (AWH 3/98:73). The most important lesson for all subsequent overland efforts was that it was essential to start with experienced bush cyclists — and hope for good riding conditions.

In 1898 Albert MacDonald (Plate 5.15), a telegrapher with several years experience in the Northern Territory, left Darwin on the 22nd of August. He knew the route intimately, was fortunate in having had rain previously over much of the route to 'set' the sand, and benefitted from tailwinds during the ride. He covered the 1,960 mile (3,154 km) route in only 28 days, capping it off with a 187 mile (301 km) ride into Adelaide; he rode on to Melbourne, completing the entire journey in 74 days (ACA 1898).

In mid-1899 the last great untried route was attempted: around Australia. Arthur Richardson (Plate 5.16), the first Nullarbor cyclist, left Perth on the 15th of June heading north. A few weeks later Frank White (Plate 5.16) of Perth — Rockhampton fame, left with his brother from Melbourne in a counter clockwise direction. In Brisbane Donald
Plate 5.15
ALBERT MACDONALD
(A.C.A. 1898:6)

Plate 5.16
CYCLING OVERLANDERS RICHARDSON, ARMSTRONG, MATHER AND WHITE
(WACY 9/6/99:87)
MacKay joined them. The two parties each required eight months for the journey. When Alex White and MacKay eventually arrived in Perth, Richardson had just completed his continental circuit. To best Richardson's time of 243 days and 4 hours MacKay had to pedal from Perth on to Brisbane in 50 days; he subsequently made the 3,750 mile (6,034 km) journey in 48 days and 4 hours to set the round-Australia record of 260 days, 7 hours (Clune 1942:171). However, Richardson (1900) received the greatest publicity by virtue of having been the first to do the ride and, more importantly (according to many), having done so alone. Frank White had to wait in the Northern Territory for a crank and the other two went on. After repairs he pedalled south through Alice Springs to Port Augusta and then crossed the Nullarbor to Perth (Clune 1942:167). This ride went generally unreported; in the context of the circum-Australian efforts it was a mere sideline.

* * *

The overland rides were seen by many as a good indication of the cycle's value: 'Journeys such as this, although somewhat dangerous, are far more useful than races as demonstrations of what a truly wonderful machine the modern bicycle is, and what long and rough journeys it enables men to accomplish' (AuWh 6/97:194). The skeptic felt that the rides merely increased the sales of tyres and machines and benefitted only the manufacturers and agents (WACY 14/7/99:5). Certainly there were strong grounds for this view. For example, after Murf, Coleman and Mather had required over two months to cross Australia via Alice Springs, MacDonald was rebuffed in his first efforts to get a bicycle donated for his attempt. The manager of the Austral Cycle Agency argued that if it required 60 days to do 2,000 miles (3,200 km), it was hardly regardable as a test of the quality of the machine (ACA 1898:20); what he meant was that from a commercial perspective 'speed' was synonymous with 'quality'. With
trans-Nullarbor cyclists covering nearly 1,800 miles (2,900 km) in three weeks, a trip of 2,000 miles (3,200 km) in over eight weeks was no advertisement. It was only when MacDonald promised to ride all the way to Melbourne from Darwin within 15 days that the Austral Cycle Agency agreed to help -- but they acknowledged the arrangement and paid up only after successful completion. The extensive commercialism led one writer to comment about one overlander's non-commercial effort that, 'wonderful to relate, we do not know what tyres he uses, or what machine he rides, which is rather a relief' (AuWh 9/97:286).

Some saw in the overlanders' rides the demonstration of the machine's value for exploration:

No doubt the use of the cycle will receive every consideration, especially in the face of all the marvellous transcontinental rides that have been accomplished ... the up-to-date safety bicycle can hold its own with either horse or camel when it comes to traversing the interior of the Australian continent (AuWh 10/99:279).

In considering the bicycle's potential for general exploration, it was proposed to seek out traces of the Leichhardt expedition by using a party of cyclists to carry out a series of quick excursions from a central base (AuWh 10/99:279). It was felt only a matter of time until 'the botanist, geologist, mineralogist ... will all adopt the cycle as a means of gaining access to the subjects they examine and collect' (AuWh 1/96:4).

Photographs suggest bicycles were part of the equipment of various bush exploration and survey parties (TAR 1901; GC 1896). The Transcontinental Railway Survey Party that left Kalgoorlie in 1901 was equipped with a bicycle (WesArg 28/5/01:24) and Mawson (1912:212) used one during his geological survey work about Broken Hill.

However, the overland cyclists were never really 'explorers' of new country. While they were on occasion among the earlier travellers along some routes, they normally tried merely to get from one point to another
as quickly as possible. All depended to some extent upon established
properties, telegraph stations and teamsters for food and other assistance
along the way, and in some instances the aid was crucial to their
survival. If the riders were courageous, considerable cour:; was
unquestionably drawn from the fact that a place to rest and re-stock was
rarely more than 75 miles (121 km) away. Murif (1897:187) emphasised
that

The cyclist who is sure of his road can never imagine the
weakening effect which uncertainties on that most vital
point can produce. Such doubts evoke sickening,
pressing, unhappy sensations which make themselves felt
more acutely than do the mere bodily disablements associated
with hunger and thirst.

The overlanders had the benefit of others' knowledge of a route. For
example, in crossing the Nullarbor there were, between Eucla and Eyre
Station (Figure 5.4), 10 rock holes, two tanks, two homesteads, and a
well along the 164 mile (264 km) route.

All of the overland journeys were along routes previously traversed
by migrants, prospectors, teamsters, or bush workers. The manager of the
Alice Springs telegraph station reported that during the months prior to
Murif's cycle journey through the centre, the route had been walked by
several men looking for work, and another cyclist had ridden from
Oodnadatta to Alice nearly a year earlier (Bul 4/9/97:24). Richardson,
on his round-Australia ride, received information about northern Western
Australia and Northern Territory cycling conditions from J. Philips, who
had just come across by bicycle from Croydon to Derby (Aust 8/99:217).

Had attention not be focussed upon these men by the overlanders, it is
highly unlikely their exploits would ever have become known to the
general public.

Probably the greatest importance of the overlanders' journeys was
in publicising the speed and feasibility of the bicycle in the outback.
Figure 5.4
'EULA TO EYRE'S SAND PATCH 170m'
(After Heath 1894)
Their rides were widely reported in Australia and not just in cycling columns or cycling journals. When Frank White returned to Perth from Rockhampton, for example, he was escorted into Perth and the police had to clear the streets to allow him to reach the C.P.O.; he received a medal and newspapers carried a several-column article on the trip. The extent to which the overlanders encouraged the bush use of the bicycle can only be speculated upon. But it is possibly suggested in an obscure note in the Eucla Recorder of 15 September, 1900, which reported that one of the community's telegraphers rode to Port Augusta, SA, to begin his holidays, accompanied by a friend who had cycled from Norseman to join him. Such a trip was undoubtedly encouraged by the number of overland cyclists who had passed through Eucla in the past three years; many persons must have had confidence in the use of the bicycle for rural travel instilled in them by the overlanders' publicised efforts.

The overland journeys quickly sated the press and public and it took ever greater feats to sustain interest. After only five men had pedalled the Nullarbor a journal opined that

'We appear to be having quite a procession of cyclists from Western Australia to Melbourne, and it looks as if the journey will ere long become quite popular amongst athletic cyclists ... a speed of 10 miles per hour can be fairly kept up, so that the road to the Golden West is not so terrible as it is generally thought' (AdWh 10/97:324).

By 1899 the Nullarbor crossing was considered to have lost its 'novelty' and become insignificant in comparison with the around Australian rides (WACy 10/11/99:7).

The rides were not always easy. The members of at least two parties nearly died of thirst, and a couple refused to undertake subsequent rides for which they were invited; one stated flatly that he 'had had enough' (Morell 10/3/00:2). The motives for the rides varied; some did it for glory and others merely wanted to get from one place to
another or see the country. Whatever the reasons, the result was a period during which the overlanders became momentary heros and made Australia the undisputed long-distance cycling centre of the world. Yet, for some strange reason, their adventures were quickly forgotten. No Australian history books mention them and the few subsequent writings on Australian cycling history (e.g. Grivell 1951) mention only a couple of the riders. Within three decades few (including the press) could seem to recall accurately who had pedalled where, and when. Records are replete with erroneous claims as to the 'first' to cross the Nullarbor, for example (e.g. Howard, 1964, SmWkly 4/12/37:3; SpoGlo 8/1/49:5).

The nature of the rides to some extent placed them outside the commonly conceived realm of bicycle 'sports'; yet, the fact that the overlanders were never really the 'first' to go anywhere, meant that they earned no place in the tableau of Australian exploration history. It is a shame, for they comprise a truly remarkable episode of the history of man putting himself and his technology against the Australian environment in the never-ceasing attempt to overcome transport difficulties. If an important function of an explorer in a broad sense is to demonstrate possibilities to those that follow, then certainly the overland cyclists were explorers in Australia's transport history.

Tourists and Road Maps

The tradition of extensive cycle touring that existed in the eastern colonies intensified in the 1890s. Both individuals and clubs travelled far afield, as the previous discussion of touring in the Australian Alps indicated. An immediate result was that many persons were made aware of the conditions of Australian roads, and the lack of directional signs, mile posts, danger boards, guidebooks and maps.

Whereas formerly roads tended to be the province of local residents,
coachmen, teamsters or others who knew the route, the introduction of
200,000 bicycles within a decade resulted in an increased number of
travellers who had no previous knowledge of various routes.

While some cycling clubs agitated for better roads, more sign posts
and danger boards, most focussed upon racing activities and demonstrated
a singular unconcern about such matters. Understandably, many cyclists
formed separate touring clubs. Unlike densely settled England, where
Dunlop, for example, provided many road signs and assistance in improving
touring conditions, Dunlop never became intensely involved here,
although they did offer their knowledge and experience to any local
authorities who requested it. Interestingly, on the Western Australian
goldfields directional signboards were erected almost as soon as new roads
were opened (BrArSt 24/7/97:2) because directions and distances were
critical and a wrong turn could prove dangerous.

By the mid-1890s the continent's first road maps were produced,
principally through the efforts of such individuals as George Broadbent
of Victoria and Joseph Pearson of New South Wales, who, during the course
of their extensive cycle journeys, had noted details about road conditions
and distances. Some of the first maps were crude. Saxton's (1895)
Cyclists' and Tourists' Handbook of Victoria: Showing Upwards of 10,000
Miles of Roads, did just that, but little more. It had no compass
direction arrows, scale, key or distances on the map; while it indicated
lakes and some streams, it gave no indication of hills, slopes or road
surfaces. However, it did include a 72 page booklet that listed distances
between the principal towns throughout the state.

In 1896, in Victoria, C.A.A. Schwaebach published The Cyclists'
and Victorian Tourists' Road Guide, Part I - Eastern District (there is
no evidence that any were published for other parts of Victoria). The
booklet contained 10 maps, perforated for easy tearing out, printed in
two colours. It had a map of the Melbourne area within a radius of 10 miles (16 km) from the G.P.O., and individual maps of various districts to the east, as far as Orbost. The booklet described road conditions and touring matters of interest; the backs of the maps listed cumulative mileages from Melbourne to the various communities. Broadbent's map of the same year was in great demand, the only one to be reprinted; by May 1898 he had turned out a fourth edition, on linen (AwWh 5/98:133).

Among the best of the early maps were those published in various issues of the Austral Wheel. They described the roads, local vegetation, and touring facilities en route, gave distances, and indicated hills and slopes by hachuring. As well, they had a scale and direction arrow and classed roads as good, fair, or bad (e.g. 4/96:84); some maps had other categories, such as 'fair weather road' (AwWh 5/96:108). As far as I am aware, the journal printed not only the most detailed (and apparently the first) road maps for parts of Victoria, but the first for southeastern South Australia and parts of Tasmania as well. In contrast, other cycle journals published relatively few maps. Issues of the New South Wales Cycling Gazette rarely included a road map, despite being the official organ of the New South Wales Cyclists' Touring Union. However, this was probably because the same organisation was responsible for the detailed Cyclists' Handbook and Guide to the Roads of New South Wales, briefly discussed earlier (Chapter 4). In Western Australia road maps were not printed in the cycling journals. There is the possibility that maps produced as separate sheets were removed and did not make their way into the archives, but a reading of the journals does not suggest that that was the case.

The first road map for New South Wales was produced by Joseph Pearson, and a copy of it (Plate 5.18) appeared in the Review of Reviews (20/7/96:26) in 1896. Over the years he progressively improved and
revised it into a series of touring guides for cyclists and motorists (e.g. Pearson 1902, 1906, 1913). While some of the earlier versions (e.g. Pearson 1902) contained little information (probably because he had also been closely associated with the Cyclists' Touring Union Guidebook), his later maps and guides often went into great detail as to the road surface materials, roughness and conditions in varying weather (e.g. Pearson 1913).

In South Australia in 1897 the Adelaide Register published a map indicating roads within a 25 mile (40 km) radius of the G.P.O.; it was reprinted as a pamphlet later in the year (Peattie 1897). The following year the South Australian Cyclist (5/8/98) produced probably the first road map depicting the entire colony (it excluded the areas to the north and west of Port Augusta); the existence of these maps were unknown to the South Australian map librarian, who had presumed the first road maps were produced for the colony only this century. The Adelaide Register map was again reprinted in 1900 (Peattie) as an expanded touring guide.

An important aspect of the cycling road maps is that they were generally quite accurate, as they had been produced by men who had recently cycled over the routes. In contrast, government plans (not read maps per se) occasionally indicated roads that were not in existence, or left off well-travelled routes, particularly those not officially gazetted as roads (AuWh 2/96:38). The cycling road maps and guide books were of interest to military authorities, as they often represented the most thorough (or recent) mapping undertaken in many areas; in preparing for their Military Dispatch Relay Rides (Chapter 6), Dunlop had a map of the Meningie - Casterton, SA, stretch drawn up in 1909 and in 1912 hired George Broadbent to produce an even more detailed one of the Coorong, SA, area; it was reportedly superior to any military maps of the area (James 1939h).
The most comprehensive and detailed map and touring guide in Australia was that of the New South Wales Cyclists' Touring Union (NSWCTU 1898), two small volumes held in a pound, pocket-sized (4 1/2 X 6 1/2 X 3/4 inch (11 X 16 X 2 cm)) case. The Handbook's 136 pages provided information on gearing; care and repair of the machine; legal and medical tips; phases of the moon, and sun and moon rising and setting times; telegraphic, railway and steamer rates; the names of the local Touring Union Consuls (33 of them, in such towns as Bourke, Bingara and Delegate); and the Union's constitution, rules and member clubs. As well, the Union arranged for its members to receive 20 to 33 1/3 percent discounts at many hotels, and listed the tariffs (there were a variety in each case) for 171 hotels about the state.

The 234 page Guide (including a 17 X 26 1/2 inch (43 X 67 cm) folded map of the state) indicated intermediate and cumulative mileages between each important town; the formation of main and branch roads; dangerous gradients; where pushing was required; what the roads were like in varying weather conditions; the specific soil ('red clays', 'black soil'); where to cross rivers, depending upon the amount of water flowing at the time; and facts important to particular areas ('look out for bullocks') -- for several thousand miles of roads.

The basic principles that cycle touring clubs established (Union membership, discounts, local Consuls) and the facilities they encouraged or developed (road maps and touring guides) provided the basis upon which subsequent motor touring associations were organised. The overall impact of cycle tourers (Plate 5.19) upon, for example, accommodation, eating and recreational facilities (especially within a one-day return-trip distance of the major cities) has yet to be properly assessed and appreciated.