

## **Domestic gas cooking appliances in metropolitan Perth, 1900 - 1950**

Ann Delroy\*

### **Abstract**

Museum historians are constantly confronted with a lack of primary research on types of artefacts when determining collection policies and on the artefacts in their social context when mounting exhibitions. Although collections of domestic artefacts abound in museums across Australia little is known about the changes in design and technology, and even less is known about the impact that new technologies had on the lives of women working in the home.

This is a typological study of gas stoves used in metropolitan Perth between 1900 and 1950. It examines the stoves which were imported and manufactured locally, and the changes in design and technology. It also assesses the popularity of the various models available.

The study serves two purposes. It allows museums to determine a precise collecting policy. More importantly, it provides the essential ground work for a broader study of the artefact. To fully understand changes in domestic technology it is necessary to study each of the different types of household technology in detail. This involves studying the history of the companies that manufactured appliances, the history of utility systems that provided fuel and water, and the history of price and income fluctuations.<sup>1</sup>

### **Introduction**

Although experiments to design a cooking stove fuelled by gas had begun in the early nineteenth century in Britain and the United States, it was not until the 1880s that gas stoves began to be accepted as an appliance for cooking food.<sup>2</sup> There was a widespread fear that gas would taint the food, that it would not cook as well as the tried and trusted wood and coal burning stoves, and that gas stoves might explode. Caroline Davidson cites an example of a late nineteenth century working class housewife in England who was reluctant to give up using her new gas stove, despite her husband's refusal to eat any food cooked in it for fear of being poisoned. To overcome her dilemma she continued to cook with the gas stove but transferred the food to an open fire just prior to him returning home from work. This ritual continued until the day he died.<sup>3</sup> Gradually these fears and reservations were allayed, a reduction in costs was demonstrated, and by the 1880s cooking with gas became a viable alternative to the solid fuel stove. The introduction of penny-in-the-slot meters, a pay-as-you-use system, in the late 1880s in Britain made gas cooking an option for 'modest homes' unable to pay quarterly bills. At the turn of the century a hire stove system gained popularity in Britain, enabling people unable to purchase their own stoves to take advantage of this new fuel.<sup>4</sup>

The introduction of the gas stove offered a major relief to the housewife from some of the hard physical work in the home. Previously, the most essential of tasks — lighting and maintaining the kitchen fire — involved chopping and fetching wood, cleaning out the ashes and constant attention to keep the fire burning at the desired temperature. The

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\*History Department, Western Australian Museum, Francis Street Perth, Western Australia 6000.

stove was not used for cooking but for heating kitchen, laundry and bath water and for warming flat irons on ironing day. The bare, cast iron stoves were difficult to clean and required regular polishing to prevent rust and to attain the desired sheen. As well the soot and dust from solid fuel stoves added to the task of dusting and cleaning in the home.

### Changing designs of stoves, grillers and boiling rings

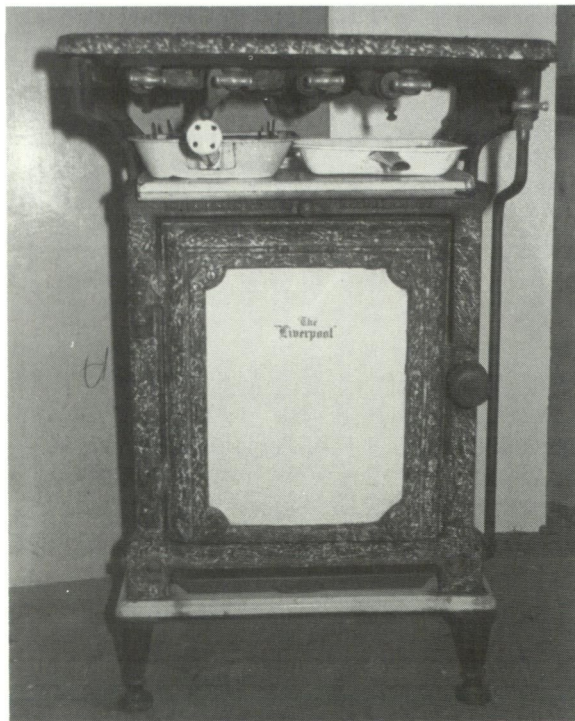
At the turn of the century gas stoves were box-like with burners on top, an oven below and a griller beneath the burners (Figure 1). They were constructed of black cast-iron and were almost as difficult to clean as the cast-iron wood-burning stoves. Routine cleaning required polishing with black lead but major cleaning required dismantling and immersion in a bath of boiling caustic to remove the build-up of grease and grime. The ovens at this time were mostly lined with enamelled panels and this offered the only relief in cleaning. However, the chief function of the enamelled panels was to hold in the insulation fibre and not to ease the task of the housewife.



**Figure 1** 'No. 844', c. 1910s. Manufactured by John Wright and Company, England. Bare, black cast-iron exterior.

It was not until after the First World War that the first changes in the appearance of the gas stove were seen. The stoves were raised off the ground on legs and, at about the same time, parts of the exterior were enamelled. Initially only iron panels on the door, or

on the door and sides, were enamelled (Figure 2) but, by the 1930s, it became possible to enamel the entire cast-iron stove.<sup>5</sup> The popularity of enamelling reached a peak in the 1930s and 1940s when colour co-ordinated kitchens with matching stove were fashionable.<sup>6</sup>



**Figure 2** The 'Liverpool', 1920s. Manufactured by the Parkinson Stove Company (Australasia), Melbourne. The first enamelling of gas stoves was on panels inset on the oven door. This stove is also enamelled on the cast-iron.

In the 1920s splash backs and plate racks were offered as optional extras. (Figure 3) The splash back was enamelled for easy cleaning. By the mid-1930s split-level stoves were available with the oven situated at eye level on either the right or left hand side of the hotplate burners. (Figure 4) These stoves represented the ultimate in gas cooking at the time. By the 1940s it was possible to have a large enamelled saucepan cupboard below the oven and hotplate. This was in keeping with the clean lines required for the most modern, streamlined kitchen. After the Second World War designs allowing the stove to fit flush with cupboards, and all-white enamelling indicated the beginnings of the clinical look. The legs disappeared, enhancing the clean lines.

Throughout the period 1900-50 gas stoves were constructed of black cast-iron. In Britain mass production of pressed steel stoves began in about 1937 but it was not until the 1950s that they became popular in Australia.<sup>7</sup>





**Figure 3** Wright's 'Eureka New World', 1920s. Manufactured by John Wright and Company, England.



**Figure 4** Split-level 'Early Kooka', 1930s-40s. Manufactured by Metters Ltd, Perth. (Source: Subiaco Historical Society).

Technologically the stoves changed very slowly. The first British models had no automatic temperature control or insulation in the ovens. The heat of the oven had to be judged by repeated inspection until the thermostat, which did this automatically, was introduced in 1923 in Britain.<sup>8</sup> The British-model stoves with thermostats, Wright's 'New World', were available in Australia after 1923. There was little financial incentive for manufacturers in Australia to spend time and money improving the technology, as gas stoves had no serious competitors until the 1930s and 1940s.

At the turn of the century, when gas stoves were first used in Perth, they usually contained some insulation. Initially it was put in the doors and later extended to the sides, back and top of the oven. The insulation material was slag wool and it was packed between the cast-iron and an enamel retaining sheet. However, constant slamming of the oven door caused the wool to bed down, requiring repacking, although by the 1930s improved methods of packing had remedied this defect.<sup>9</sup> Insulation of the oven door improved the heat-retention of the oven to some extent. More importantly, it reduced the temperature on the outside of the oven door making it less hazardous to work with and reducing the risk of burns to children. As the insulated area increased so too did gas efficiency. In addition the kitchen became cooler and a more pleasant work area. As well cleaning inside the oven was made easier by the smooth enamelled surfaces which replaced the rough cast iron.

Before the introduction of the thermostat, gas ovens had two burners, one on either side at the bottom, and a flue at the top of the back panel. Hot air passed directly from the heat source to the flue. Some early models had a damper in the flue, copying the principle of the solid fuel stove where it reduced the rate at which the fuel burned. However, this was redundant in a gas stove where the flame rate was controlled by a tap. Before the First World War a baffle was used in the oven to improve gas efficiency. This was a sheet of metal across all but a small opening near the top of the oven, which impeded the flow of hot air to the flue. (Figure 5) But the first improvement in lagging the oven was the transfer of the flue from the top of the oven to the bottom, which caused the air to circulate around the oven.<sup>10</sup>

The introduction of the oven thermostat was among the first major improvements in gas stove technology. The use of thermostatically controlled ovens was well-established in the United States by the mid-1930s and was rapidly gaining popularity in Britain and Australia.<sup>11</sup> However, it was not without problems on some models. When the desired temperature was reached the thermostat lowered the flow of gas, but the reduced flow was often not enough to keep two burners alight. A draught from opening the oven door was sufficient to extinguish the flame. It was then possible for a lighted hot plate burner to flash back, igniting the built-up gas in the oven, resulting in an explosion. The oven door was usually blown off and caused serious injury to anyone in its path.<sup>12</sup> A single oven burner soon replaced the double burner, ensuring a sufficient flow of gas to keep it alight.

The first moves towards efficient cooking and heating by gas had come with the adoption of the bunsen flame in the 1850s.<sup>13</sup> A hole in the gas tube drew air in and the correct mixture of air and gas produced a clean, hot, blue flame. However, the bunsen



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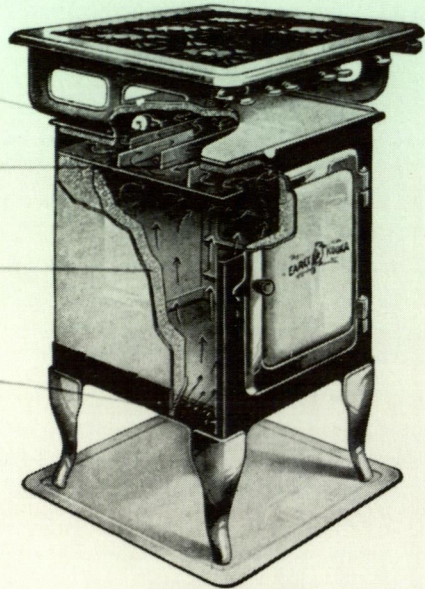
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Heat retaining Baffle Plates,  
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Heavily insulated sides, back  
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Oven Burners designed for  
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They are given a longer distance to travel, and pass between baffle plates, which absorb the heat that would otherwise go up the flue pipe, and transfers it to the oven top, which acts as a deflector plate and radiates the heat back into the oven. As well as the above process taking place, the heated air is retarded in its progress through the oven; therefore, doing its full amount of work before reaching the outlet.

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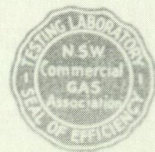


Figure 5 Metters' gas stove showing position of baffle plate and insulation in the oven. 1935. (Source: Metters' Gas Stove Catalogue, 1935).

flame was not without its problems. The flame had an inner and outer cone and interference with the inner cone from a solid object resulted in incomplete combustion. For most efficient heating the outer cone had to touch the object being heated but the object could not interfere with the inner cone.<sup>14</sup> This caused problems with the two types of early hotplate burners. The earlier type consisted of a circular pipe or ring which was drilled vertically. It was efficient when burning with a large flame, but a small flame failed to reach the bottom of the vessel. To lower the vessel resulted in interference with the inner cone when the gas was turned on full. To overcome this problem the 'Continental' burner was introduced with holes drilled horizontally, allowing the vessel to sit much closer to the burner head. At high gas rates, however, the flame spread beyond the sides of the vessel. By the 1930s-40s the most common type of hotplate burner was a combination of these two models. Holes were drilled at an angle in a ring or star-shaped burner. Alternatively the spreader burner was used, which was designed with slots in the side of a cap which fitted on to the burner head.<sup>15</sup>

Throughout the period 1900-50, problems were experienced with the flame at the tip of the burner flashing back to the point of gas injection. In a bunsen flame, the gas-air mixture rises at a speed controlled by the tap and the flame travels downwards. To keep the flame at the bunsen port, these two speeds had to be balanced. If the gas-air speed was too high the flame lifted and if too low the flame flashed back.<sup>16</sup> The optimum level was difficult to achieve and depended on the shape of the burner tube, the size, shape and position of the air inlet ports, the roughness of casting, and the number, size and shape of the holes at which combustion took place.<sup>17</sup> During the 1940s the Australian Gas Light Company in Sydney designed an anti-flashback burner.<sup>18</sup>

The design of the hotplate bars improved only marginally in the first half of the twentieth century. The early form of straight bars was placed directly over the flame but this caused a loss of heat to the bars instead of the vessel. (Figure 6)

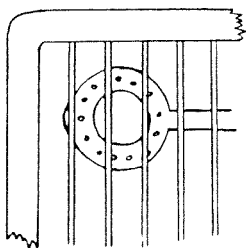


Figure 6 Bars directly over flames.

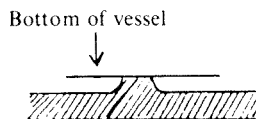


Figure 7 Profile of studded bar.

Heat from the vessel was also lost by conduction to the bars. To reduce the surface area of the vessel in contact with the bars, the latter were designed with squared studding. (Figure 7) The biggest problem, however, was the constant heating and cooling of the bars from flame contact. This resulted in weak points and eventually breakages. Repairing bars was a constant job for the Perth City Council Electricity and Gas



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Note.—These Grillers can now be obtained in Coloured Mottled Enamel Finishes.

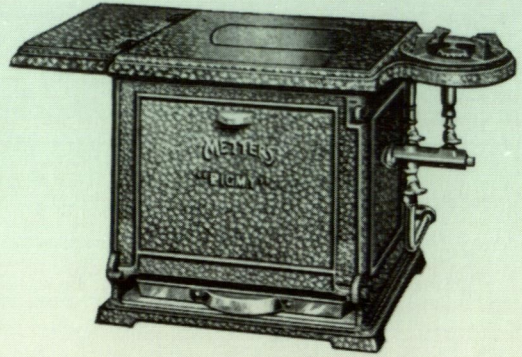
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Actually a small “Stove” embodying in its construction all the features of a full-sized Gas Stove, suitable for Flats, or as an adjunct to coal stove. Oven suitable for roasting or baking, as well as grilling, having two inside Bottom Burners, one Grilling Burner, and one Boiling Burner, all separately controlled.

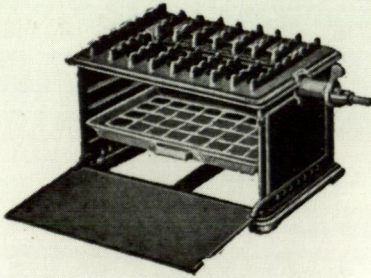
**Sizes:**

	Length.	Depth.	Height.
Inside Oven	12¼ in.	10¼ in.	11½ in.
Overall	.. 25 in.	13¼ in.	14½ in.
	Casing Extra.		



Illustrating Mottled Enamel Finish.

The “Pigmy” can be fitted on stand 24 ins. high with cabriole legs.



**THE “AUSTRAL”  
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Extended Lifting Hot-plate, Side Boiling Burner with separate Tap. Deflectors removable. Hinged Door. The Grill Deflectors may be raised or lowered for Grilling or Boiling as required.

Width.	Height.	Depth.
22½ in.	8½ in.	11 in.

Casing Extra.

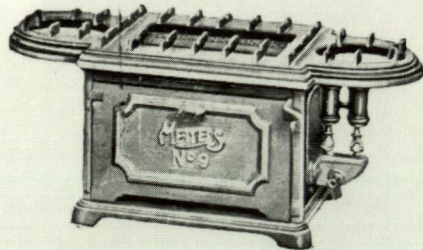


Figure 8 Metters' grillers, 1935 (Source: *Metters' Gas Stove Catalogue*, 1935.)



Department (PCC E&G Department).<sup>19</sup> The design of a semi-solid cast-iron hotplate bar, cut away to avoid flame contact, was an attempt to overcome these problems.<sup>20</sup> Nonetheless, the bars remained cumbersome and difficult to clean throughout the period, although by the 1930s enamelling provided some improvement. It was not until after the Second World War that enamelled drip trays were placed directly below the hotplate bars and burners, making cleaning easier.

The griller, below the hotplate, remained unchanged with a deflector plate constructed of cast-iron frets and a rotating burner. The latter provided an additional flame on top of the stove which was useful for simmering large pots of soup or jam.

Small griller stoves and boiling rings were used, often in conjunction with a solid fuel stove, by people unable to afford a larger stove or by people living alone who did not require a large cooking appliance. A small gas appliance was also convenient for boiling a kettle or cooking breakfast and in very hot weather it provided an alternative to lighting a wood stove.

The most versatile of the grillers were miniature stoves. (Figure 8) They had a small oven suitable for roasting and a griller burner, and were capable of accommodating up to five small saucepans, all in the space of about 35 x 10 x 26cm. On cheaper models the griller burner rotated to boil saucepans on the hotplate, to grill and to heat the tiny oven. The simplest griller had no oven. Grillers changed very little in design, their ovens having no thermostats and remaining uninsulated. By the 1930s they were available in enamel finishes but production of the cheaper, bare, cast-iron models continued.

Gas boiling-rings were a single-ring burner capable of heating one saucepan at a time. They were manufactured in slightly varying forms but they changed little over time, except for improvements in the hotplate burner design. (Figure 9) In the 1930s they were available in enamelled finishes as well as in black cast-iron.

In the fifty year period, 1900-50, gas stove design changed very slowly when compared with the rapid changes made in the post-war period. After the war all-white enamelled, streamlined, pressed-steel stoves were common. Modifications were primarily a consequence of changing fashions in kitchen design, although there were some technological improvements. But it was not until the 1930s and 1940s, when the threat of competition from electricity for the cooking market galvanized the manufacturers into action, that stove design was considered seriously. It was a reaction similar to, and no doubt influenced by, that in the United States in the 1930s. There, intense rivalry between the gas and electrical industries for technological and design innovation produced stoves by 1940 very different from those in the 1920s. By 1940 pressed metal had replaced cast-iron and eye-level ovens with storage cabinets replacing the legs, produced the popular streamlined image. In addition the adoption of automatic oven and top lighting, time control, and gadgets such as clocks and oven lights resulted in technological differences.<sup>21</sup> However, electricity was not a serious competitor in Australia until after 1950, which probably accounts for the lag in technological and design improvements of Australian gas stoves.<sup>22</sup>

### The Manufacturers and their Models

Until 1920 most gas stoves in the Perth and Fremantle districts were imported from England. Two companies supplied most of the local market: John Wright and Company in Birmingham, and the Cannon Iron Foundry at Bilston in the West Midlands. The PCC E&G Department imported from John Wright and Company and held the local franchise until the 1930s when it was taken over by Ray J. Sharpe, a Hay Street retailer.<sup>23</sup> The Fremantle Gas and Coke Company's (FGCC) early imports were from the Cannon Iron Foundry. (See Appendix 1).

The most popular model imported from Cannon was the 'Trusty' but other models included the 'Country' and 'Chef'. They were black cast-iron, similar in appearance to that illustrated in Figure 1. Model differences were probably in oven size and the number of hotplate burners. John Wright and Company models included the 'Conway Castle', 'Balmoral Castle', 'Windsor Castle', '566' and '844', and were similar in design to the Cannon stoves of this period.<sup>24</sup> Gas boiling-rings and grillers were imported from both these manufacturers.

After 1920 the FGCC rarely imported stoves from England following an increase in tariffs from 20% to 35% which made them prohibitively expensive.<sup>25</sup> Most of the FGCC's new stock came from an Australian manufacturer, A. Simpson and Son in Adelaide, and included the 'A.M.S.', 'Modern' and 'Special'. (Appendix 1) In 1920, a Simpson stove cost £6 12s 0d. which was only slightly more than the 1917 English stove price. (See Figure 10) It was not until the later 1920s that the FGCC began supporting Metters, the only local firm manufacturing gas stoves.

Fred Metters began his stove-making business in Adelaide in 1891.<sup>26</sup> He was not new to the trade, having continued his father's stove-making business in partnership with his two brothers in Melbourne in the 1880s. The business being too small for three partners, Fred moved to Adelaide. The first years were not easy and he was constantly in debt. In 1894, recognizing the growth of Perth as a result of the goldrushes, Fred opened a Perth office. For the first two years stoves were shipped from Adelaide but by 1896 manufacturing had commenced in West Perth. In 1898 he went into partnership with Henry Langan Spring who was to become a key figure in the growing enterprise. In that same year the Metters' factory, known as the Great Western Foundry, opened in Marquis Street, West Perth with an office and showrooms at the corner of Hay and William Streets in Perth. By 1902 the company had opened its third branch in Australia, a factory and showroom in Sydney. Fred Metters sold his entire interest to Spring in 1908 and the company was registered with its head office in Adelaide. In Perth the showrooms moved several times: in 1906 to the east side of William Street between Hay Street and St Georges Terrace, and in 1911 to the Queens Building in William Street. In 1911 the foundry was also moved from West Perth when the company took out a 99 year lease on fourteen acres of land in Subiaco on the corner of Salvado Road and Roydhouse Street.

Manufacturing was concentrated on the production of solid-fuel stoves but by 1910 the business had diversified and was making small agricultural machinery. The First

World War was a boon to Metters because it resulted in an increased demand for locally produced goods to replace those no longer available from overseas.

In 1913 Metters submitted a gas stove to the directors of the FGCC for inspection in the hope that the gas company would undertake to buy on a regular basis. The directors decided not to purchase but agreed to sell the gas stoves on commission.<sup>27</sup> Although they did not give an explanation for rejecting the Metters' offer in favour of English stoves, it is likely that the local prices were not competitive.<sup>28</sup> Metters, however, decided against manufacturing gas stoves in Perth at that time. They did not even submit a tender to the PCC E&G Department following a request in 1914 for suitable locally manufactured gas stoves.<sup>29</sup> In 1918 the FGCC purchased four gas stoves from Metters on a trial basis. It is not clear whether they were manufactured at the Perth foundry or imported from the Eastern States. However, it was to be another eight years before the FGCC began purchasing from Metters on a regular basis. By this time the stoves were certainly being manufactured in Perth.

**Figure 10** Wholesale price of stoves purchased by the FGCC, 1906-26.

		Manufacturer	Model	Price £ s d
	1906	Cannon		3 15 0
	1910	Cannon		4 7 6
Nov.	1912	Cannon		4 5 0
Jan.-Oct.	1913	Cannon		4 5 0
Jan.-Oct.	1914	Cannon		4 5 0
Jan.	1915	Cannon		4 10 0
Nov.	1915	Cannon		5 1 0
Dec.	1916	Cannon		5 19 0
Mar.	1917	Cannon		6 6 0
Sept.	1919	Cannon		9 3 0
Apr.	1920	Simpson		6 12 0
Nov.	1923	Simpson		6 11 0
Nov.	1924	Cannon	'Trusty'	7 0 0
Mar.	1924	Simpson	'A.M.S.'	6 11 0
Nov.	1924	John Wright		9 8 0
Nov.	1924	Simpson	'Modern'	6 11 0
Feb.	1925	Simpson		6 19 0
May	1925	Parkinson		8 6 0
May	1925	Simpson		6 19 0
Sept.	1925	John Wright	'New World'	10 14 0
Jan.	1926	Simpson		6 12 0
Nov.	1926	Parkinson		8 10 10

Source: Prices calculated from Appendix 1

From 1926 to 1930, 60% of the FGCC stove purchases were from Metters (See Appendix 1) and this figure undoubtedly increased in the 1930s and 1940s. The other 40% were from the Parkinson Stove Company, an English firm which supplied the Perth market with gas meters before 1920. By the 1920s Parkinson was manufacturing stoves



in Melbourne and in 1929 had opened a branch in King Street, Perth, manufacturing gas meters and selling stoves.<sup>30</sup> In November 1926 a Parkinson stove cost £8 10s 10d. (See Figure 10). Although the price of a Metters' stove at the same time is not available, it must have been competitive to constitute the major proportion of the FGCC's purchases.

Details of the FGCC's stove purchases after 1929 are not available. However, in September of that year the directors decided to continue buying Metters' stoves, but only:

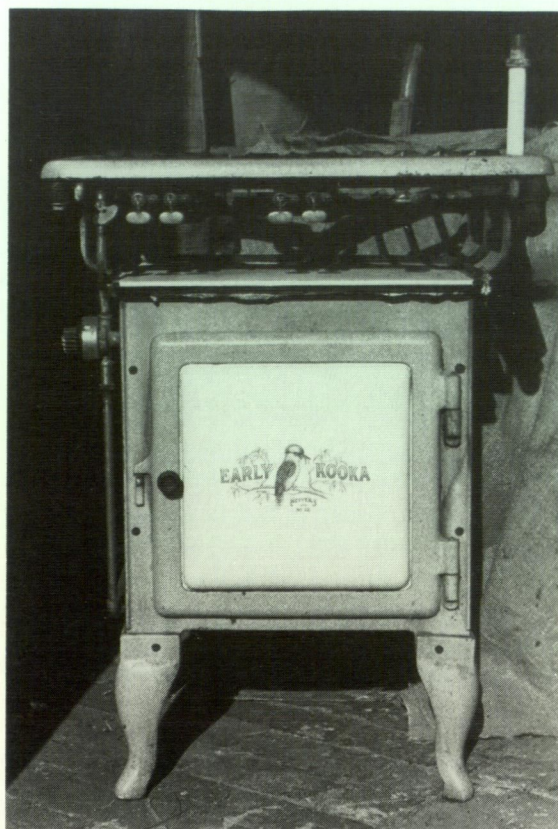
with the approved bottom [and] provided that they undertake to replace the old type of bottom . . . to the old pattern stoves as they are brought into our works from time to time for repairs and overhaul. Also that they give this company an indemnity in legal form, in respect to any claim which may be made against the company through explosions.<sup>31</sup>

Obviously Metters had experienced problems with their stoves but it is not clear what the problems were and how they were overcome. Nevertheless, Metters' gas stove trade increased to dominate the Perth market in the 1930s and 1940s.

An absence of records makes it impossible to describe the earliest Metters' gas stove precisely. The 1920s 'Even Kooka' was one of the earliest Metters' models. It was a relatively small stove on legs with no oven temperature control and was finished with an enamelled door and side panels. The remainder was either blacked or nickel-plated. By the 1930s the choice of models was extensive. The 1935 *Gas Stove Catalogue* listed sixteen variations of the domestic cooker, mostly 'Early Kookas' of which the 'No 12' was the most popular. (Figure 11) The differences were in the oven and hotplate size and the type of finish on the cast-iron. The name 'Early Kooka' became synonymous with gas stoves in Western Australia and in the 1930s 'Early Kooka' stoves were immediately identified by a large kookaburra painted on the centre of the oven door. Other models included the 'New Suburban', 'New Sydney' and 'Pearl'.

By 1928 Metters patented the 'Retained Heat' oven which, the Company claimed, reduced gas consumption to a minimum by improved packing of the insulation fibre on all sides and the positioning of a heat deflector plate below the baffle which radiated the heat back into the oven. (Figure 5) The flue exit remained at the top of the oven and did so well into the 1930s. In 1935 the Company was still promoting the same 'Retained Heat' oven.<sup>32</sup>

From the mid-1930s Metters was producing stoves with eye-level ovens available on either the right or left hand side of the hotplate. These split level stoves had an enamelled splash-back and plate rack as a standard feature. On the upright stoves the splash back and plate rack were sold as optional extras. All upright 'Early Kookas' could be fitted with a 'Spersom' thermostat and split-level models with a 'Robertshaw Automaticook', both at extra cost. In 1940 the cost of a thermostat fitted to a No. 12 'Early Kooka' was £3 6s 0d. which was nearly 25% of the price of the basic stove.<sup>33</sup> The model name 'Thermett' was introduced in the 1930s to describe stoves fitted with thermostatically controlled ovens.



**Figure 11** Metters' No. 12 'Early Kooka', 1930s-1940.

Metters' stoves were available in a variety of finishes including enamelled door and side panels with nickel or chromium plated finishes, all mottled enamel finishes or all porcelain enamel finishes. By the 1930s the hotplate bars and burners were black enamelled or nickel-plated making cleaning easier.

Metters manufactured a variety of grillers and boiling-rings by the 1930s of which the 'Pigmy' and 'No. 9' grillers were the most popular.<sup>34</sup> (Figures 8, 9) These changed very little over time, as discussed earlier.

In the 1920s Parkinson Stove Company models included the 'Liverpool' and 'Sunray'. The early model 'Liverpool' had a damper in the oven flue and neither had a thermostat. Both had enamelled panels on the outside and the 'Sunray' insulation was held in these exterior panels. Production of the 'Liverpool' continued until the mid-1930s and the 'Sunray' continued until at least the early 1940s. The 'New Suburbia' was being produced in the 1930s and the 'Centennial' and 'Swift' in the 1930s and 1940s. There were several variations of each of these models including, in 1935, the numbers 11, 25 and 43 'New Suburbia'. In 1940 there were the numbers 11/502, 25/502, 36/502, 45/502, 45/498,

45/504 'Sunray', the 2/25, 2/43 and 2/45 'Swift', and the 45/700 'Centennial'.<sup>35</sup> It is no wonder that members of the Australian gas industry complained, in the 1930s and 1940s, of the over-abundance of models available on the market and called for a standardization of stoves.<sup>36</sup>

The PCC E&G Department began selling Parkinson stoves in the 1930s and these models constituted the Department's main sales until the late 1940s. (Figure 12) Of the 251 stoves sold by the Department in 1935, 169 or 67%, were Parkinson stoves and of these 83% were 'Sunray Minor' models. Only 14, or 6%, of stove sales were Metters' models. The 'Sunray Minor' was one of the cheapest stoves available, costing £7 0s 0d for

**Figure 12** Retail price of stoves sold by the PCC E&G Department 1935-47.

	Manufacturer	Model	No. Sold	Cash Price (£)		
1935	Parkinson	'Sunray Minor'	141	7	0	0
1935	Parkinson	'New Suburbia'	28	17	0	0
1935	?	'Bijou'	37	10	18	0
1935	?	'Donald'	31	5	12	0
1935	Metters	'New Suburban'	11	10	0	0
1935	Metters	No. 11 'Early Kooka'	3	16	12	6
1940	Parkinson	'Sunray'	53	9	13	6
1940	Parkinson	'Centennial'	16	11	12	0
1940	Parkinson	'Swift'	56	17	11	0
1940	Metters	No. 12 'Early Kooka'	22	14	0	0
1940	Metters	'Thermett Junior'	10	16	5	0
1940	Metters	No. 12 'Thermett'	7	17	6	0
1940	?	'Donald'	11	6	5	0
1941	Parkinson	'Sunray'	97	9	15	0
1941	Parkinson	'Swift'	90	17	15	6
1941	Parkinson	'Centennial'	33	12	7	9
1941	Metters	No. 12 'Early Kooka'	36	—	—	—
1941	Metters	No. 12 'Thermett'	27	17	13	0
1941	Metters	No. 11 'Early Kooka'	3	—	—	—
1941	Metters	No. 24 'Early Kooka'	3	18	6	3
1941	Metters	'New Suburban'	15	—	—	—
1941	Metters	'Thermett Junior'	3	—	—	—
1941	?	'Donald'	45	6	5	0
1942	Parkinson	'Centennial'	48	14	13	9
1942	Parkinson	'Swift'	31	18	2	0
1942	Parkinson	'Sunray'	16	9	19	0
1942	Metters	No. 12 'Early Kooka'	1	—	—	—
1942	?	'Donald'	7	6	5	0
1945	Parkinson	'Swift'	13	20	9	6
1945	Parkinson	'Centennial'	13	15	1	0
1945	Metters	No. 12 'Early Kooka'	14	17	2	0
1947	Metters	No. 12 'Early Kooka'	214	17	9	6
1947	Parkinson	'Centennial'	33	14	9	6

Source: PCC E&G Department Show Room Sales Ledgers, 1935-47



a cash purchase in 1935 compared to £10 0s 0d for the cheapest Metters' stove. The 'Sunray Minor' was a very small and basic model without any extras, such as a splashback or thermostat, but its cheapness dictated its popularity. The 'New Suburbia' models were much more expensive costing £17 0s 0d in 1935. (Figure 12)

By 1940 the number of Metters' stoves sold by the PCC E&G Department had increased to 39, or 23%, but Parkinson models still dominated, making up 71% of sales. In 1945 only 40 stoves were sold by the Department, due to restrictions under the National Security Act, and of these two thirds were Parkinson models and one third Metters'.<sup>37</sup> By 1947, however, Metters' stoves, already popular on the local market, dominated the PCC E&G Department sales with 214 of the 247 stoves sold being Metters' No. 12 'Early Kookas'. The remaining 33 sales were Parkinson 'Centennial' models.

English imports from John Wright and Company continued throughout the period although increased tariffs in 1920 made them prohibitively expensive for most people and the quantities imported declined accordingly.<sup>38</sup> In the 1920s the 'New World' series went into production and was manufactured until at least the 1940s. This model was considered the best stove available on the Australian market and members of the gas industry regretted its decreased sales, due to the high cost, and the resultant loss to the standard of appliances in the industry.<sup>39</sup> Oven 'Regulos' were fitted from the 1920s making the 'New World' one of the first gas stoves to offer the benefits of the thermostatically controlled oven. The oven used a single burner and the flue was moved from the top to the bottom when the thermostat was fitted.<sup>40</sup> This provided a more even temperature in the upper part of the oven and in addition a low temperature area below the flue. The latter area was useful for cooking food which required a very low heat while other food was being cooked at a high temperature in the upper section of the oven. The early regulators were numbered from 1/4, 1/2, 1, 2, . . . 12, and a metal plate indicating the correct temperature for cooking different foods hung beside the stove.

The late 1930s and early 1940s 'New Worlds' had anti-flashback hotplate burners which were ignited automatically.<sup>41</sup> The flame slots in the burners were at a slight angle which prevented food spillages extinguishing the flame and clogging the slots and also gave a higher gas efficiency. The hotplate had at least one high powered burner for rapid boiling and on some models, one or more duplex burners. The duplex burner enabled either the entire burner or just the simmering slots to be used. The 'Vertico' tap, in use by the 1930s, was unique to the 'New World' stove and was designed to avoid leakage after prolonged use.<sup>42</sup> Gas leakage was a common problem with other tap designs. The safety handles of the 'Vertico' taps had to be lifted to a horizontal position before turning on the gas. This prevented the taps being inadvertently knocked on.

The 1920s 'New Worlds' often had enamelled insets on the oven door and sides simulating tiles. (Figure 3) By the 1930s they were generally plain or mottled enamel. In the late 1930s and early 1940s the 'New World' stoves had clean exterior lines with all the supply pipes concealed. The most modern model available was a cabinet style with a hinged splash back which folded down to cover the hotplate, providing additional bench space and complying with the fashion of clean lines.

During the 1920s the PCC E&G Department continued to buy most of its stoves from John Wright and Company in England. In the twelve months to June 1928 the Department sold 790 English stoves compared to 97 Australian stoves although the Gas Department plumbers, whose numbers made up most of the plumbers registered to install gas appliances in the PCC E&G Department area of supply, had connected about 1000 of each.<sup>43</sup> Because there were a number of local businesses supplying Australian models, the Gas Department stocked mainly John Wright imports for which it held the franchise until the early 1930s. By 1935, however, the PCC E&G Department was no longer selling John Wright stoves.<sup>44</sup>

Imported stoves from England dominated the Perth metropolitan market until the 1920s. In 1920 a sharp increase in tariffs made English imports prohibitively expensive for most people and, except for the PCC E&G Department, local retailers turned to Australian stoves even though they were considered inferior. From the later 1920s stoves manufactured by the Metters company in Perth and the Parkinson Stove Company in Melbourne dominated FGCC sales and, from the 1930s, PCC E&G Department sales. The Parkinson Stove Company, although not manufacturing locally, remained a competitor for Metters — albeit in second place — in the 1930s and the early 1940s due to the popularity of its cheaper, basic 'Sunray' models. By the late 1940s, Metters prices compared favourably with all Parkinson models and Metters clearly dominated the local market.

### CONCLUSION

The gas stove was introduced for the first time in metropolitan Perth homes in the early 1900s. At that time it was constructed of black cast iron and had little insulation in the oven and no oven thermostat, and was almost as difficult to clean as the wood stoves it replaced.

Gas cooking appliances in metropolitan Perth had no serious labour-saving competitors before the 1950s so there was little incentive for manufacturers to improve stove design. However, in the 1930s and 1940s the perceived threat of competition from electric stoves for the cooking market provoked reaction from the Australian gas industry. This was influenced by the intense rivalry between manufacturers of gas and electric appliances in the United States. There, competition for technological and design innovation produced stoves in the 1940s which differed markedly from those in the 1920s. However, electricity in Australia was not a serious competitor until after 1950, which probably accounts for the lag in technological and design improvements.

## APPENDIX I

Listings of new stoves purchased by the FGCC, 1906-29.

Date	Manufacturer	No.	£ s d		
			Cost		
Mar.	1906*	Cannon Iron Foundries	118	6	8
May	1906	Cannon Iron Foundries	36	18	2
	1906	John Wright & Col			
	1908	Chalmers & Browne			
Jun	1906	Cannon Iron Foundries	10		
Nov	1912	Cannon Iron Foundries	40	172	1 9
Jan	1913	Cannon Iron Foundries	40	170	12 6
Jun	1913	Cannon Iron Foundries	20	84	19 6
Jul	1913	Cannon Iron Foundries	20	84	0 6
Oct	1913	Cannon Iron Foundries	20	84	19 6
Jan	1914	Cannon Iron Foundries	20	84	7 4
Feb	1914	Cannon Iron Foundries	20	85	5 6
Apr	1914	Cannon Iron Foundries	40	167	13 2
Oct	1914	Cannon Iron Foundries	30	127	16 0
Jan	1915	Cannon Iron Foundries	40	180	11 2
Jan	1915	Plummer & Love	1	3	19 6
Apr	1915	Parkinson Stove Co.		6	11 10
Jul	1915	Cannon Iron Foundries	40	176	0 5
Aug	1915	Stoves x 'Hebburn'		14	6 10
Nov	1915	Cannon Iron Foundries	40	202	15 4
Jan	1916	Cannon Iron Foundries	40	206	6 6
Dec	1916	Cannon Iron Foundries	36	214	0 8
Mar	1917	Cannon Iron Foundries	4	25	6 5
May	1918	A. Simpson & Sons		7	6 1
Sep	1918	Metters Ltd		33	4 1
Sep	1919	Cannon Iron Foundries	40	365	17 8
Apr	1920	A. Simpson & Sons	6	39	10 9
Jun	1920	Cannon Iron Foundries		11	8 6
Oct	1921	A. Simpson & Sons		36	13 0
Jan	1922	A. Simpson & Sons		70	13 9
Feb	1922	A. Simpson & Sons		69	0 0
Aug	1922	A. Simpson & Sons		83	2 6
Aug	1922	Cannon Iron Foundries		163	7 7
Jan	1923	A. Simpson & Sons		158	12 8
Feb	1923	A. Simpson & Sons		81	2 6
Apr	1923	A. Simpson & Sons		78	7 0
May	1923	A. Simpson & Sons		78	7 10
Sep	1923	A. Simpson & Sons	12	78	0 6
Sep	1923	R. & A. Main Ltd	1	9	13 1
Nov	1923	A. Simpson & Sons	36	235	2 6
Dec	1923	A. Simpson & Sons	24	156	16 0
Feb	1924	A. Simpson & Sons	25	163	7 2
		(24 A.M.S. & 1 Modern)			
Mar	1924	Cannon Iron Foundries	13	90	17 11
		(12 Trusty & 1 Challenge)			
Mar	1924	A. Simpson & Sons (A.M.S.)	23	150	4 6



Date		Manufacturer	No.	£	s	d
				Cost		
Apr	1924	A. Simpson & Son (A.M.S.)	25	163	2	9
Apr	1924	Wm H Hunt (Royal)	6	43	12	0
Aug	1924	A. Simpson & Sons	23	159	6	9
Nov	1924	J. Wright & Co.	6	56	9	8
Nov	1924	A. Simpson & Son (Modern)	24	157	18	6
Feb	1925	A. Simpson & Son (18 Modern & 6 Special)	24	167	0	10
Apr	1925	Parkinson Stove Co.	4	36	2	0
May	1925	A. Simpson & Sons	24	167	2	0
May	1925	Parkinson Stove Co.	8	66	6	3
May	1925	A. Simpson & Sons	24	167	0	0
Aug	1925	A. Simpson & Sons	12	79	4	0
Sep	1925	J. Wright & Co. (New World)	6	64	2	5
Nov	1925	A. Simpson & Sons	12	79	4	0
Jan	1926	A. Simpson & Sons	12	79	4	0
Mar	1926	Metters Ltd		91	6	3
Apr	1926	Metters Ltd		20	10	3
May	1926	Parkinson Stove Co.		27	11	5
Jul	1926	Metters Ltd		123	8	2
Sep	1926	Metters Ltd		125	7	11
Oct	1926	Metters Ltd		195	11	9
Nov	1926	Parkinson Stove Co.	6	51	5	0
Nov	1926	Metters Ltd		89	10	1
Jan	1927	Metters Ltd		118	6	2
Feb	1927	Metters Ltd		136	8	9
Mar	1927	Metters Ltd		99	15	3
Apr	1927	Metters Ltd		134	5	2
May	1927	Metters Ltd		94	9	6
May	1927	Metters Ltd		109	6	6
Jul	1927	Metters Ltd		148	2	9
Aug	1927	Metters Ltd		92	7	7
Sep	1927	Metters Ltd		33	3	0
Oct	1927	Metters Ltd		193	18	7
Nov	1927	Metters Ltd		127	10	11
Jan	1928	Metters Ltd		109	2	9
Feb	1928	Metters Ltd		193	0	0
Mar	1928	Metters Ltd		22	7	6
Apr	1928	Metters Ltd		233	14	9
May	1928	Metters Ltd		168	5	1
May	1928	Metters Ltd		168	5	1
May	1928	Metters Ltd		205	10	3
Jul	1928	Metters Ltd		77	1	6
Aug	1928	Metters Ltd		77	18	6
Aug	1928	Parkinson Stove Co.		18	6	6
Sep	1928	Parkinson Stove Co.		27	8	0
Oct	1928	Parkinson Stove Co.		91	14	0
Oct	1928	Metters Ltd		30	5	0

Date		Manufacturer	£	s	d
			Cost		
Nov	1928	Metters Ltd	75	16	7
Nov	1928	Parkinson Stove Co.	47	13	6
Nov	1928	Parkinson & Cowan	86	13	6
Nov	1928	Metters Ltd	41	8	9
Jan	1929	Metters Ltd	112	5	10
Jan	1929	Parkinson Stove Co.	91	15	0
Feb	1929	Parkinson Stove Co.	107	0	0
Feb	1929	Metters Ltd	74	3	6
Mar	1929	Parkinson Stove Co.	74	0	0
Apr	1929	Parkinson Stove Co.	132	12	6
May	1929	Parkinson Stove Co.	46	0	0
May	1929	Metters Ltd	16	9	10
May	1929	Metters Ltd	68	7	6
May	1929	Parkinson Stove Co.	100	15	0
Jul	1929	Parkinson Stove Co.	27	7	6
Jul	1929	Metters Ltd	17	0	0
Aug	1929	Parkinson Stove Co.	76	7	6
Sep	1929	Parkinson Stove Co.	31	0	0
Oct	1929	Parkinson Stove Co.	80	10	0
Oct	1929	Metters Ltd	54	14	11
Nov	1929	Parkinson Stove Co.	78	12	6
Nov	1929	Metters Ltd	57	0	4
Nov	1929	Metters Ltd	54	5	5
Nov	1929	Parkinson Stove Co.	184	2	6

Source: FGCC Ledgers, 1906-29

\* 1906-11 listings incomplete

#### REFERENCES/NOTES

- <sup>1</sup> The author has carried out a more detailed study of the gas stove which examines these issues. Ann Delroy, 'The introduction of the domestic gas stove in metropolitan Perth, 1900-1950', History Honor's Thesis, Murdoch University, 1985.
- <sup>2</sup> Davidson, Caroline. (1982). *A Woman's Work is Never Done: A History of Housework in the British Isles 1650-1950*, Chatto and Windus, London. pp. 66-67; Siegfried Giedion, *Mechanization Takes Command: A Contribution to Anonymous History*, Oxford University Press, New York, 1948, pp. 537-39.
- <sup>3</sup> Davidson, *A Woman's Work*, p. 67.
- <sup>4</sup> *Ibid.*
- <sup>5</sup> Wilson, G.B.L. (1978). 'Domestic Appliances', Trevor I. Williams(ed.), *A History of Technology*, Vol. VII, Oxford University Press, Oxford, pp. 1137-38.
- <sup>6</sup> See 'Brighter and Better Kitchens', *National Gas Bulletin*, April 1941, Vol. 5, No. 9, pp. 20-21, on ideal colour combinations for kitchens.
- <sup>7</sup> Challis, C.C. and Barr, J.A. (1936). 'Experiences and impressions gained by a recent visit abroad'. *The National Gas Institute Transactions*. p.54.
- <sup>8</sup> Wilson, 'Domestic Appliances', p. 1136.
- <sup>9</sup> Smith, Norman S. and Le Fevre, R.N. (1937). *Domestic Utilization of Gas Part I*. Walter King Ltd, London. pp. 88-91.
- <sup>10</sup> Wilson, 'Domestic Appliances', p. 1136.
- <sup>11</sup> Challis and Barr, 'Experiences and impressions gained abroad', p. 54.
- <sup>12</sup> Interview with Alf Mason, September 1984. Mr Mason began work with the PCC E&G Department in 1935. For the first few years he cleaned and repaired gas stoves.

- <sup>13</sup> Wright, Lawrence (1968), *Homes Fires Burning: The History of Domestic Heating and Cooking*, Routledge and Kegan Paul, London, p. 157.
- <sup>14</sup> Smith and Le Fevre, *Domestic Utilization of Gas*, pp. 48-49.
- <sup>15</sup> 'The choice of hotplate burners', *National Gas Bulletin*, 5(6), January 1941, p. 13; Smith and Le Fevre, *Domestic Utilization of Gas*, pp. 78-81. It is not known when the 'Continental' burner replaced the vertically drilled ring.
- <sup>16</sup> Fitzpatrick, A.S. (1931), 'The nature of flames', *Gas Institute Transactions*, pp. 97-98.
- <sup>17</sup> Smith and Le Fevre, *Domestic Utilization of Gas*, pp. 49-52.
- <sup>18</sup> 'The design of anti-flashback burners', *National Gas Bulletin*, 5(4), November 1940, pp. 10-11.
- <sup>19</sup> Interview with Alf Mason.
- <sup>20</sup> Smith and Le Fevre, *Domestic Utilization of Gas*, pp. 81-83.
- <sup>21</sup> Busch, Jane. (1983), 'Cooking Competition: Technology on the Domestic Market in the 1930s', *Technology and Culture*, 24(2), pp. 222-45.
- <sup>22</sup> The extent of competition from electricity for the cooking market in Australia is discussed in Ann Delroy, 'The introduction of the domestic gas stove in metropolitan Perth, 1900-1950', History Honor's Thesis, Murdoch University, 1985, Chapter Three. The impact of the threat of competition is discussed in Chapter Four.
- <sup>23</sup> Interview with Alf Mason. The earliest extant PCG E&G Department Show Room Sales Ledger of 1935 does not list any John Wright stoves amongst its sales. Presumably the Department had ceased holding the franchise for John Wright stoves sometime before 1935.
- <sup>24</sup> Interview with Alf Mason.
- <sup>25</sup> Correspondence with the Department of Industry, Technology and Commerce, Canberra.
- <sup>26</sup> The following information is taken from an anonymous typescript, 'Metters Limited, Perth Branch: History', Battye Library Acc. No. PR2383.
- <sup>27</sup> FGCC Minute Book, 16 July 1913.
- <sup>28</sup> The Manager of the PCC E&G Department believed that it was impossible for a satisfactory stove to be produced locally at a reasonable price. PCC Minute Book, 4 July 1912.
- <sup>29</sup> PCC Minute Book, 4 August 1914.
- <sup>30</sup> Post Office Directory, 1929.
- <sup>31</sup> FGCC Minute Book, 17 September 1929.
- <sup>32</sup> *Metters' Gas Stove Catalogue*, 1935.
- <sup>33</sup> See Figure 12. The cost of a thermostat is calculated from the difference between the price of a No. 12 'Early Kooka' and a No. 12 'Thermett'.
- <sup>34</sup> Interview with Alf Mason.
- <sup>35</sup> PCC E&G Department Showroom Sales Ledgers, 1935 and 1940.
- <sup>36</sup> Fitzpatrick, A.S. (1935), 'Some problems concerning domestic gas appliances', *Gas Institute Transactions*, p. 159.
- <sup>37</sup> FGCC Minute Book, 23 January 1945.
- <sup>38</sup> Correspondence with the Department of Industry, Technology and Commerce, Canberra; J. MacKenzie, 'What are the most pressing needs of the gas industry today — commercially?' *Gas Institute Transactions*, 1931, p. 25.
- <sup>39</sup> MacKenzie, 'Pressing needs of the gas industry', p. 25.
- <sup>40</sup> 'What the regulo means to you', a booklet published by Radiation New World, c. 1930s.
- <sup>41</sup> Information on the late 1930s — early 1940s 'New Worlds' is from the *Radiation Cookery Book*, London, 1938.
- <sup>42</sup> Interview with Alf Mason. Mr Mason commented on the superiority of the 'Vertico' tap.
- <sup>43</sup> PCC File 940/1952 'Gas Stoves', letter dated 19 June 1928.
- <sup>44</sup> The PCC E&G Department's Show Room Sales Ledgers, 1935-50, do not record any sales of English stoves. See Figure 12.