'PARADISE', EUROA
Australia's first frog farm

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Abstract

In the 1930s Henry Willson and Sydney Jacka, two young men from Euroa in central Victoria, imported some live specimens of *Rana catesbeiana* (the American bullfrog) to farm for edible frog legs. Despite the arrival of two separate batches of frogs from the United States, efforts to establish a farm were unsuccessful. Only the year before, another anuran—the cane toad (*Rhinella marina*)—was imported into Queensland as a biological control for native beetle pests on sugar cane. The cane toad was overly successful in adapting to new surroundings. This article gives a brief history of the biology and use of frogs, especially when used as food, before exploring the impetus for Australia's first frog farm at Euroa. Today, wild or farmed frog legs are an important diet item in many countries, but not in Australia. Extinctions and diseases of frogs and toads in some parts of the world—including Australia's rainforests—are of great concern to biologists and ecologists. Introductions of the American bullfrog and cane toad have been linked here and elsewhere with the spread of disease and with frog population declines. The article concludes with some historically informative recipes for frog legs and related dishes.

Keywords

Euroa, food history, frog legs, frog farm, *Rana catesbeiana*

Introduction

A few years ago I saw a leaflet about a frog farm in Euroa, a small country town in central Victoria. As it happens, I know Euroa quite well. My parents have lived there for the last 16 years, and I often visit them there. But the frog farm was a complete surprise. The leaflet's date, 1937, was another surprise. Did Australians really eat frogs in the 1930s? There were very few recipes for frogs—almost none, in fact—in early 20th century Australian cookbooks, so it seemed that the optimism of Euroa's frog farmers did not stem from an established demand at the time for frog's legs. I rang Australia's most celebrated and knowledgeable 'frog man', Mike Tyler, in Adelaide. He had not heard of any successful frog farms in Australia. Perhaps he thought I was planning one myself: "You'd be better off putting your money into watching icecream melt", he said dryly.

The frogs imported for the Euroa farm were American bullfrogs (*Rana catesbeiana*), first imported in 1936 (the year before the frog farm opened), only a year after the arrival of another foreign amphibian. This was the South American cane toad (*Rhinella marina,* formerly *Bufo marinus*), introduced to Australia in 1935 after its apparent success in controlling a sugar cane beetle pest on the Caribbean island of Puerto Rico (Tyler, 1998: 104–5). The two sugar cane beetle pests which prompted the import into Queensland were native, and not the same pests of Puerto Rico's cane. The first shipment of 102 cane toads came from Hawai'i, where the toads had been introduced (Australia in turn introduced the toads to its own mandated territory of Papua New Guinea) (Tyler, 1975: 11; 1998: 106). Cane toads failed to control Queensland's sugar cane pests, but they embraced Australia's tropical north, beginning with coastal and near-coastal Queensland and later extending into the Northern Territory. They are the only toad in Australia today, and the only introduced amphibian pest so far (Cogger, 1983: 127; Tyler and Chapman, 2007: 86). The colonising success of the cane toad has been anything but palatable. It occupies more than a million square miles of Australia, at population densities which can be up to 100 times greater than those in its native range. Australian governments have spent more than AU$7 million trying to control it (Tyler et al., 2007: 11; Wikipedia, 2007: np).

I was visiting Euroa when I saw the frog farm leaflet. What had become of the American bullfrogs? Like cane toads, these animals are large, highly fecund, well-known colonisers, adaptable to a wide range of climates. The cane toad and American bullfrog are two of only three amphibians listed among 100 of the world's worst 'invasive alien' species (Lowe, 2004: 6). The bullfrog, a native of the central and eastern United States and south-eastern Canada, has been introduced to at least 20 countries, possibly to more than twice as many as that.

As well as being used for biological control, bullfrogs have been traded as pets and used as food and game. Today humans gather and farm them (but not in Australia) and worry about them. Bullfrogs can travel long distances overland if there are patches of suitable habitat along the way. When the Arizona Game and Fish Department introduced bullfrogs from Louisiana in the 1920s for hunting and eating, the frogs adjusted quickly to local conditions. Naturalists Albert and Anna Wright deplored the way in which people had moved this "voracious, omnivorous, carnivorous species" (1949: 447) within the US, taking it into states where it was not originally known. Outside its native range, the bullfrog is considered a pest. According to some biologists, its introduction in parts of the US and Canada might be leading to the extinction of other species. It isn't just an historical problem. An English conservation body, the Surrey Biodiversity Partnership, raised concerns about the release into the wild of bullfrogs that were available through the pet trade (2007: np).

And this was the frog that had been imported for the Euroa frog farm. If the cane toad had become so much at home in northern Australia, why wasn't southern Australia full of bullfrogs? [This article references a number of unattributed lineage items from Australian newspapers and magazines from the 1930s. These are referred to by the name of the publication and date and, when quoted from, by page number. Full information is supplied in the Bibliography.]

Frogs in history

In something like three million quotations, the *Oxford English Dictionary*—the conveniently alphabetical chronicler of English-speaking history—says nothing about the consumption of frogs, although it does confirm their usefulness to science from at least the mid-19th century. Following the work of Luigi Galvano (hence *galvanism*) and Alessandro Volta (hence *voltaic*), the English began to investigate electric impulses carried by nerves in frog legs. It was the beginning of a long and involuntary career in science for the frog.

In Australia frogs were bred for medical and scientific research from at least the 1920s. I feel I have an umbilical connection to them, and, unlikely as it may sound, so do most Australians my age. In the 1950s and 1960s, the standard pregnancy test used an assay with live frogs, usually an African clawed frog (*Xenopus laevis*) exported from South Africa in vast numbers (Weldon et al., 2004: 2102). If a laboratory confirmed my mother's second pregnancy—the one which resulted in me—it almost certainly used a frog to do so. My only other close encounter before adulthood with an amphibian was a cold, dead frog-like animal (probably a cane toad) dissected during a school biology class in the late 1960s. As a young adult, feeling daring, I ordered frog legs (once) in a restaurant. Since then, I have become more interested in the calls, appearance, biological achievements and ecological desirability of frogs than in eating their legs. In my work as a dictionary-maker, I have defined the *corroboree frog*, *gastric brooding frog*, *pobblebonk* and various other Australian amphibians. Hopeful male frogs call from the pond of my suburban garden in Canberra each spring, and I would no longer order a plate of frog legs in a restaurant. But others do still eat frogs; in fact, far more people eat frogs than I once suspected.

Where does the frog sit?

In culinary terms, the frog sits 'on the fence'. There is evidence in Europe that humans ate them more than 5000 years ago, in the Neolithic period (Lorenzi, 2007: np). In some cuisines people eat all parts of the frog. English-speakers tend to be

ambivalent (if not altogether opposed) to the idea of eating frogs. We normally eat only the hind legs of the animal, though it would be more accurate to say that we, the Royal and English 'we', normally don't eat frogs at all. This preference (or lack of it) is an old one. In 1542 English traveller and writer Andrew Boorde (1490–1549) was horrified at the practice of Lombards, who ate frogs "guttes and all" (in Davidson, 2006: 321).

The (French) culinary equivalent of Oxford's lexical bible, Prosper Montagné's *Larousse gastronomique*, makes up for the (English) Oxford's lack with a generous 17 recipes, beginning with '*Frogs' legs à l'anglaise*'. This is not a joke about English antipathy towards frogs as food. "It is well known", says Montagné, "that frogs' legs are not appreciated in England" (Montagné, 1976: 435). To a French chef, the designation *à l'anglaise* simply meant food dipped in egg and breadcrumbs, and then fried. It seems that things have changed since the 1970s edition of Larousse, and that egg-and-breadcrumbed frog legs now have a more overtly French character. In a recent Wikibooks cookbook, the dish Montagné referred to as *frog's legs à l'anglaise* had become *frog's legs à la Parisienne*. They taste, says Wikibooks, like a cross between chicken wings and shark, and baked legs go well with teriyaki sauce (Wikibooks Cookbook, 2008: np).

The ambivalence of the Anglophone towards eating frogs extends to an uncertainty about how to classify them (an uncertainty which is not confined to the British). In Tudor times frogs—which didn't count as 'meat'—could be eaten by Catholics during Lent, when meat was not allowed (Davidson, 2006: 321; Blumenthal, 2008). Recipes for frogs are usually in the fish section of cookbooks. *Madame Prunier's fish cookery book*, first published in 1938, was the result of her success in establishing a fish restaurant in London. The book has a separate section on frog legs, with 11 recipes including a rather pleasant-sounding frog leg risotto. The yellowing pages of my cheap 1967 paperback edition of *Madame Prunier* tell me that 50 frog legs will feed four or five guests (Prunier, 1967: 242). Howard Hillman, another food writer, likened their flesh to that of fish: it is tender, he said, and needs cooking mostly for aesthetic rather than other reasons. Sometimes frogs are categorised as poultry, which is reasonable if you aren't a taxonomist or a pedant, because the flavour of a

mild, white-fleshed frog leg is something like that of chicken. And occasionally, as *Madame Prunier* shows, the frog has its own category. The Wikibooks cookbook lists meats separately: beef, chicken and turkey, and frog (for which it gives the solitary recipe reproduced below) (Wikibooks Cookbook, 2008: np). Food writers have occasionally puzzled over the bad reputation enjoyed by the frog. Elizabeth David found it odd that frog legs, "delicate little morsels that surely even the most fastidious could not object to" (David, 1974: 384), should inspire horror (ibid). It was not much use giving directions for cooking them anyway, she wrote in 1974, since they were unobtainable in England. After centuries of mainly bad frog press in that country, it is hard to say whether David's reference to the "most fastidious" was born of a desire to be provocative or of genuine puzzlement (or, of course, both). Alan Davidson wondered whether their status as a despised food came from the 'evil-smelling' ponds they lived in, or from the frog's ugliness (which is, of course, a matter of opinion, but one commonly held) (Davidson, 2006: 321; Tyler, 1997).

Though in general we avoid eating them, frog legs had (and have) some appeal for gourmets, English-speaking or otherwise (Nash, 2000: 467). Chef Louis Saulnier reported in *La répertoire de la cuisine* that while frogs were not popular before World War I, "epicures generally appreciate them" (Saulnier, 1982: 81). In the world of gastronomy, the French language has long been useful in giving recipes a certain cachet. The great Escoffier of the Carlton Hotel in London used the word *nymphes* on menus, because it was preferable to the 'more vulgar' term frog. His elegant recipe for *nymphes a l'aurora* is below (Escoffier, 1941: 154). Worldwide, numerous frog species are eaten, but bullfrogs (farmed in more than 20 countries) are hefty, which is why they are the main species used (Gasca-Leyva, 2004: 333). A pair of bullfrog legs weighs about a third of the weight of the whole animal: ⅛–½ a pound, or out 60–250g (see Figure 1) (American Bullfrog Canning Co, 1937: 9). Howard Hillman, who is more moderate than Madame Prunier, recommends two to five pairs of legs a person, "depending on the size of the legs and the diner's appetite". They are gourmet fare, he says, when crumbed and deep-fried, braised or grilled—though being American, he says "broiled" (Hillman, 1981: 187–188).

Figure 1—A fine-sized bullfrog from the butcher's. An illustration like this might well have inspired two Euroa lads to try frog farming (source: American Frog Canning Company booklet, 1937).

Americans have been eating frog legs since at least the 1880s—and using them, as has happened elsewhere, for research (*New York Times*, 1881: 8; Gibbs, 1990: 1027). By the 1940s, Louis Diat, chef at New York's Ritz-Carlton Hotel, claimed that the country consumed more frog legs than any other country. Frog legs were raised in special places "like terrapin, oysters, etc" (Diat, 1941: 148). Diat gave three recipes for them—*a la poulette* (with mushrooms, white wine, cream sauce, egg yolks and cream), *meunière* (with browned butter) and *provençale*, with a thick garlicky tomato sauce. The company that provided for the Euroa frog farm, the American Frog Canning Company, offered tinned frog legs for the domestic market in the US, either plain or 'a la King'. Those canned 'a la King' were in a white sauce with mushrooms and vegetables. "Serve over toast or patty shells", advised the company's booklet (American Frog Canning Co, 1937: 23).

Frog legs enjoyed a brief vogue in Australia in the late 1960s and early 1970s, which was when I ate them myself. Because I was just beginning to acquire both the means and the desire to eat in restaurants, I cannot now be sure if the small flowering of interest at that time began then or earlier. In any case, it didn't last long. Although frog legs have a low profile in Australian dining today, they have occasionally featured in cookbooks over the past few decades (see the 1980s recipe below). Fifteen years ago Australia apparently imported one to two tonnes of deep-frozen bullfrog legs a year, but in a country whose main settlers are still Anglos-Saxon, they have disappeared from menus, dinner plates and supermarket shelves (Tyler, 1997: 66–67).

There is a big global trade in frogs, farmed and otherwise, for food. As recently as 2007, an estimated 85% of the trade in bullfrogs was wild frogs (Olvera-Novoa et al., 2007: 191). It reached such a volume by the 1990s that Mike Tyler described the figures as "astronomical and unsustainable" (Tyler, 1997: 66). The main frog farming parts of the world are South-East Asia (exporting to Europe) and Latin America (exporting to North America). In 2000 a figure of nearly 10,000 tonnes was given for the amount of live frogs and frog legs marketed globally each year (Warkentin et al., 2009: 1056; Flores-Nava, 2000b: 22). Though frog legs are regarded as being a typically French food item (and the French propensity for eating them gives the English their snappily dismissive nickname of 'frog' for French people), the frog legs eaten today in France and elsewhere in Europe come from large South-East Asian frog farms. France imports between 2500 and 7000 tonnes a year, sometimes more. Frog legs are also popular in Asia and in North America, which in 2003 imported a million bullfrogs from South America (Mazzoni et al., 2003: 997). All seven tonnes of frog legs (*cuisses de grenouilles*) eaten in 2004 at a festival in Vittel, eastern France, were imported from Indonesia (Broughton, 2004: np). In Java, wild frogs are harvested year-round. Their sale provides a livelihood for many people, and they are both a source of cash and a substantial food item (Kusrini, 2005: iii–vii).

It's not just French gourmets, though. "If you think cooked frog legs is a minor epicurean oddity enjoyed only by slightly eccentric French gourmets, think again", advises Australian–Canadian biologist Corey Bradshaw in an online discussion site

(Bradshaw, 2009: np). Indeed, according to a recent news item from the Australian Broadcasting Corporation: "Even Obama eats frog legs… Around the world they're consumed from school cafeterias right through to the high end restaurants" (ABC, 2009: np). One researcher estimated that the annual quantity of frog legs eaten globally in 1996 was 6600 tonnes—this weight is the legs alone, not the whole frog (Beebee [1996] in Tyler, 1997: 67). Translating weight to individuals, a 2009 estimate (which the author himself called "almost laughably conservative") put the annual number of frogs harvested globally at between 180 million and one billion (in Brahic, 2009: np). It's a large span because reliable figures are not available. Indonesia, one of the biggest exporting countries, exported an estimated 31 to 160 million frogs annually in the late 1990s (Warkentin et al., 2009: 1058). The quantity eaten domestically in Indonesia could be two to seven times the amount exported (ABC, 2009: np).

The first Australian frog farm

Humans have practiced aquaculture, the farming of aquatic animals, for at least several thousand years, though the modern large-scale industry dates from after World War II (White et al., 2004). In Australia, aquaculture appears to have been practised by at least one Aboriginal group several thousand years before European colonisation, based on the evidence of complex channel and pool systems used for eel cultivation around Lake Condah in Victoria (McNiven, Crouch, Richards et al., 2011). Among the first examples in Australia of small-scale enterprises by European-settlers were the ponds built by lawyer Joseph Allport in Tasmania in 1842, for breeding tench and perch (Royal Society of Tasmania Report, 1877: 11; Allport, 1966: 10).

In Victoria, a dentist named Willson and his family came to live at 'Paradise' in Kennedy Street, Euroa, in the 1920s. Their house was opposite the home of builder Harry Jacka and his wife Rosie, whose son Sydney was the same age as the Willsons' son Henry (Jacka, unpublished memoir). As teenagers, the two boys had an enterprising spirit. One year, they planted an acre of potatoes in the hope of making a good profit at Christmas time. At some time after Syd started work on the local

newspaper, the *Euroa Gazette,* Henry saw an advertisement for frog farming in an American magazine. Syd later recalled: "Henry used to buy a USA magazine [possibly *Popular Mechanix*]. In it was an ad for starting Edible Frog Farming" (ibid).

It could well have been the same advertisement which later ran in *Modern Mechanix* (1936: 25; see Figure 2).

Figure 2 – Advertisement featured in Modern Mechanix, January 1936: 25.

'Raise Giant Frogs', said the American Frog Canning Company's advertisement for 'Nufond Giants' (the American bullfrog): 'A New, Uncrowded Industry. Good Profits—No Competition… Competition is unknown because the wild supply is

practically exhausted… *WRITE* for our big, illustrated frog book. It explains our money-making proposition in detail.' (*Modern Mechanix*, 1936: np). Henry Willson and Syd Jacka contacted the company in New Orleans in 1933 (Jacka, unpublished). Any delivery of five or more pairs of bullfrogs from the company came with five printed lessons on frog farming. The whole thing was a fine example of a 'get rich quick' scheme. At about the time of the Euroa order, the company's founder Albert Broel and his fellow frog-fancier Sylvester Schutt had been arrested for claiming that their frogs would lay 25,000 eggs a year, and that a pair of bullfrogs would return a profit of US$360,420 million in 13 years (*Time Magazine*, 1936: np).

Willson and Jacka started building their ponds behind Henry Willson's house in Kennedy Street in December 1935. The company's booklet *Frog raising* recommended three concrete ponds: a main shallow breeding pond 20 by 20 ft, a 10 by 15 ft tadpole pond, and a 'growing' pond (American Frog Canning Co, 1937: 45). Euroa resident Steve McKernan, whose paper route in the 1960s included Kennedy Street, remembers a concrete pond on the property, divided in the middle and perhaps 20 ft long, standing perhaps four feet above ground (p.c. January 2011). Willson and Jacka fenced their ponds and covered them with wire netting. 'Frogs must be fenced or they will hop away', warned the booklet.

The first consignment of bullfrogs from the American Frog Canning Company fared poorly on their way to Euroa. They were probably packed only on a layer of damp grass or moss in a wooden box (see Figure 3), like other frogs shipped domestically by the company at that time. Live frogs could be shipped for two or three weeks without food, as the company's booklet noted, but a little water needed to be poured into the crate three times a day to keep the frogs damp. A trans-Pacific journey on a freighter such as the *Lindenbank*, which brought the first consignment, would have taken more like five weeks from the west coast of the United States to the east coast of Australia (*The Queenslander*, 1921: 30). Of the 18 consigned in New Orleans, only one—a female nicknamed 'Widow Watson'—survived the journey in August 1936. Eventually, the company sent a second consignment. This time, six of ten frogs survived, reaching Melbourne on 28 June 1937 on the steamer *Cedarbank* (*The Argus*,

1937b: 16; *The Advertiser*, 1937: 25; *The West Australian*, 1937: 18). The frog farm opened two months later (see Figure 4).

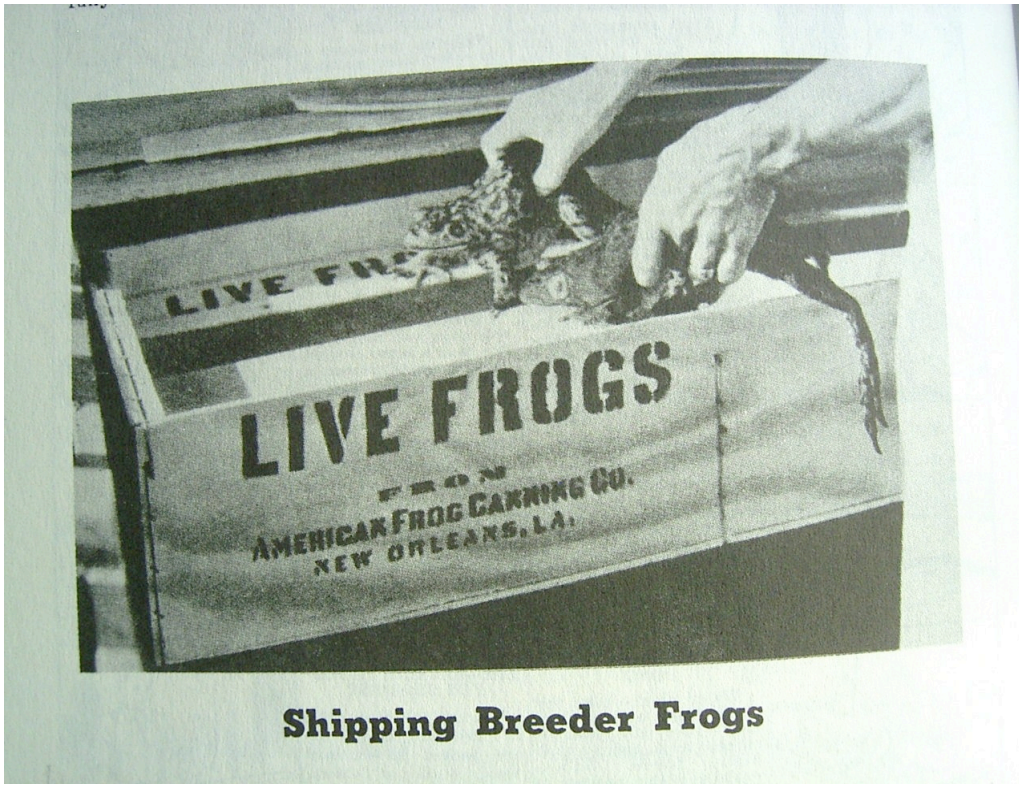

Figure 3 – 'Shipping Breeder Frogs' (source: American Frog Canning Co. booklet, 1937).

Figure 4 – The Euroa frog farm ('WATSON FROG FARM'), probably in 1937.

On Saturday 21 August 1937, in an event covered by the Melbourne papers and commemorated by a souvenir leaflet (see Figure 5), the two proprietors capitalised on the novelty of the occasion by charging a silver coin for admission. They donated the takings to the Euroa Bush Nursing Hospital (*The Argus*, 1937b: 16).

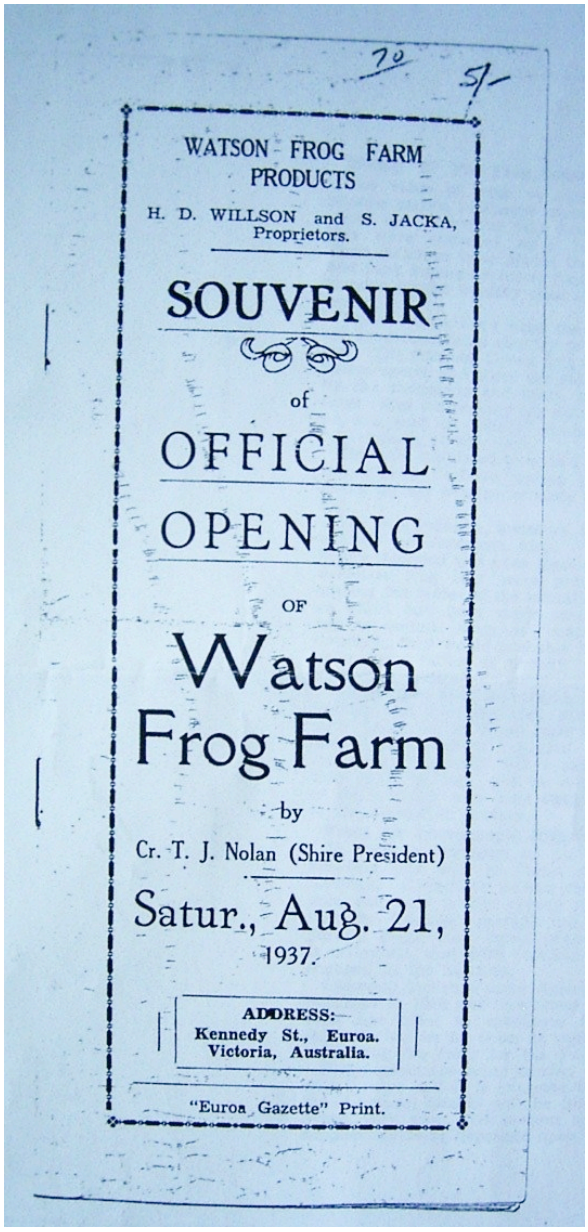

Figure 5 – Leaflet from the opening of the frog farm, August 1937.

At the opening, shire president Councillor TJ Nolan ceremoniously added the pale green, brown-spotted bullfrogs to the new ponds (ibid). With the even balance of sexes among the new frogs, popular sentiment did not fancy the chances of the lone

female that had survived the first consignment. The Melbourne *Argus* printed a ditty written for the occasion by 'Oriel' (1937: 31):

Of the frog who would a wooing go
You probably know well,
But have you heard the other tale,
The one I'm going to tell?

It concerns the Widow Watson,
You perhaps already know 'er
She lived in quiet seclusion
At the frog-farm in Euroa

But seclusion wasn't really
What the farm was mostly needing;
So they sent a delegation
In the interests of good breeding.

The widow combed and curled her hair,
But found, to her dismay
That none of the three gentlemen
Would even look her way,

For it appears that each of them
Has brought with him his wife —
So the Widow Watson has to stay
A widow all her life.

The Euroa farm was mildly sensational. Syd Jacka's mother painted a green frog onto a mustard-yellow tie for him (Elma and Geoff Grayden, p.c. March 2010). Syd later recalled that a "major element" of his life through the teens was being involved in "the first edible frog farm in Australia, the Watson Frog Farm" (Jacka, unpublished). The 1936 shipment, with its sole survivor, began the first known attempt at an Australian frog farm. A second attempt in Sydney followed soon after. In December 1936, Mr GM Harris, of Dee Why, received a delivery of bullfrogs from America. Of the 18 frogs he ordered, eight survived their journey (*Courier-Mail*, 1936: 13).

Melbourne newspaper *The Argus* predicted that it would be the beginning of a new Victorian industry (*The Argus*, 1937a: 8). Euroa's locals were sceptical. As one of them, George Harrison, later related: "Everyone laughed at it [the farm]. 'What are you going to have for tea?' people would ask Syd. To eat frog's legs you'd have to have something wrong with you" (p.c. March 2010). And that was the problem. The newspaper story which reported the opening of the frog farm went on to say that there was absolutely no demand for the meat in Australia. "One never sees 'frogs' legs remoulade' or 'frogs sauté meuniere [sic]' on a dinner menu", said the reporter, who had searched Melbourne and turned up only two tiny, dusty cans of frog legs on the pantry shelf of a French restaurant. The cans had been there for about 10 years. *The Argus* reported that the Euroa farm would supply the frog glue and frog skin industries, as well as frog meat (*The Argus*, 1937b: 16). But its main aim was to supply restaurants, hotels and clubs. It was doomed from the start by the complete lack of a market, probably also by the two young men's complete lack of experience of bullfrog-raising techniques, and possibly by the appetites of the local native birds.

In temperate climates, bullfrogs lay eggs in shallow water in Spring, and these hatch into tadpoles in one to three weeks (Helfrich, 2001: 1). The speed of metamorphosis of bullfrog tadpoles into frogs depends partly on temperature—it can take about five months in the tropics, longer in temperate regions (Flores-Nava and Vera Muñoz, 1999: 341–345; Flores-Nava, 2000a: 54). Under tropical conditions, farmed bullfrogs can become sexually mature as soon as seven months after they hatch. Even under good conditions in the US, it can take three years or more from egg-laying to producing a frog of harvestable size—which would be a poor investment compared with perhaps 16 to 19 weeks from egg to marketable chicken today.

It was going to take two and a half years for the frogs in Euroa to breed and grow to harvestable size, and the frogs would not be at their best as breeders until they were three years old (Flores-Nava 2005c: np; *The Argus*, 1937c: 3; American Frog Canning Co, 1937: 11). The length of time was an academic question, as it happened: as far as anyone now knows, the frogs failed to breed at all. Marion Rennie, a lifelong resident of the Euroa region, said "I can remember the tanks plain as day. I don't think it really got off the ground" (p.c. March 2010). According to Euroa resident Stuart

Bourne, "the problem was that they didn't breed and all died out within a year" (p.c. March 2010). Joan McKendrick, who later lived at 'Paradise' in Kennedy Street, can remember the brickwork and all the cement. The frogs "never got properly into action", she recalls (p.c. March 2010). The two young proprietors had failed to consider the "ferocity of Australian birds", an older resident, the late Bill Stevens, told Steve McKernan. It was the birds, he remembered Bill saying, which ensured the farm's failure (p.c. March 2010).

Though the opening of the frog farm was news, it closed without a murmur, and without a single frog being sold or killed for the table. Frog farming, especially of the American bullfrog, did not become commercially viable until the 1970s—decades after the 1936–37 attempt in Euroa—and even today small-scale farms are still not economically feasible (Tyler et al., 2007: 10). By the 2000s, when the last signs of Henry Willson and Syd Jacka's frog farm ponds were removed, it was obvious that large or easy profits from frog farming were extremely unlikely (McKernan, p.c. March 2010; Helfrich et al., 2001: 3). Frog farms were so vigorously promoted in at least one popular magazine that frog farms may well have been tried elsewhere in Australia, but the Euroa and the Dee Why efforts are the only known attempts to farm edible frog legs in Australia. They are also remarkable for being among the earliest attempts outside the US to farm frogs—the American bullfrog was introduced for farming in Canada in about 1901, Japan in 1917, Brazil in about 1935 and Germany in 1935 (Lever, 2003: 208–210; Flores-Nava 2005c: np; *The Mercury*, 1935: 4; *Barrier Miner*, 1901: 6).

More than just a small and local failure

Frogs today are often in the news. Though they may be hard to classify in food terms, they are popularly seen as a canary of the modern world. Like any other organism, frogs are susceptible to changes. They are vulnerable to drought, pesticides, disease and competition from introduced species. Their susceptibility to pollution and their wide-ranging habitat on land and in water make their health something of a general indicator of environmental health (Warkentin, et al., 2009: 1056). Over the last generation, major declines in some frog populations and

extinction of some species have attracted attention (Tyler et al., 2007: 2). Our modifications to the environment raise concerns not only for frog populations, but for humans, too.

One strand of the wider story of the small, failed frog farm of Euroa in the 1930s is the continuing harvesting of so many of the world's frogs for food. Another is the possible role of the bullfrog in the global decline in amphibian populations (Daszak, 1999: 735). The bullfrog, like the cane toad and African clawed frogs, has been shipped around the globe in the interests of human health and nutrition. Biologists have linked traffic in these species to the spread of the amphibian fungus disease *chytridiomycosis*, probably associated with catastrophic declines in frog populations in central America, Spain and the rainforests of north-eastern Australia (Mazzoni et al., 2003: 995; Ficetola et al., 2007b: 477; Cunningham et al., 2005: 386; Weldon et al., 2004: 2100). It is not possible to know how narrowly south-eastern Australia might have escaped the establishment of a naturalised population of the American bullfrog from the Euroa farm; a wetter year might have been all that was needed for this to happen. Given the bullfrog's adaptability and omnivorousness, the sad fate of the Euroa frogs might have been instead a mirror of the successful colonisation of the cane toad.

Today in Euroa there is no sign of the frog farm, or of the bullfrog (see Figure 6). As a business, it was a failure. There were never any frog legs to sell from it. A handful of local residents (many of whom contributed recollections for this article) still remember the farm. Some of these people patronise an antiquarian bookshop in Euroa's main street. It was in this shop that the proprietor, my 84 year old father, first showed me the frog farm leaflet. Its few pages of print are the one surviving material remnant of the frog farm.

Figure 6 – Site of the former Euroa frog farm, January 2011 (source: Bernadette Hince).

Thanks to my sister Barbara Hince and father Kenneth Hince for the leaflet about the frog farm. My mother Pat Hince wrote about the frog farm for the Euroa Gazette *in 2007.* Euroa Gazette *editor Paul Rieusset circulated my request for information. Local residents Stuart Bourne, Kevin Dowell, Rev Geoff and Elma Grayden, George Harrison, Joan McKendrick, Steve McKernan, Des Nicel and Marion Rennie contacted me with information. Steve McKernan showed me the site of the farm, whose industrial remains he remembered from childhood. Thanks to Dr Peter Stanley, Director of the Centre for Historical Research (National Museum of Australia), for the associateship that enabled me to write this article, and to two anonymous referees for suggestions that improved the paper.*

Recipes

Frogs' legs à la Parisienne (Wikibooks Cookbook)

16 large frog legs
juice of ½ lemon
salt and pepper
2 eggs, beaten
fine dry bread crumbs
fat, for deep frying

Blanch frog legs in boiling water with lemon juice and salt and pepper. Drain legs and pat dry. Dip legs into eggs and roll in bread crumbs. Deep fry at 370°F (190°C) for 2 to 3 minutes until legs are tender. Serve with onion cream sauce.

Frogs' legs amandine (Kirkwood, 1980: 44)

6 pairs frogs' legs
½ c milk
½ c flour
salt and pepper
4 tbsps oil
1 tsp lemon juice
60 g butter
1 c slivered toasted almonds
1 tbsp chopped parsley
slices of lemon

Soak the frogs' legs in cold water for two hours. Drain and dry thoroughly. Dip them in the milk and then the flour seasoned with salt and pepper. Heat the oil in a frying pan and cook the legs for 7 to 10 minutes. Transfer to a serving dish seasoning with salt, pepper and lemon juice. Cook the butter until it is nut brown and pour it over the legs. Scatter with the almonds and parsley. Garnish with lemon.

Escoffier's *Nymphes a l'aurore*

> *For various reasons, I thought it best, in the past, to substitute the mythological name "Nymphs" for the more vulgar term "Frogs" on menus, and the former has been universally adopted, more particularly in reference to the following "Chaud-froid a l'Aurore."* (Escoffier, 1941: 154)

Poach the frogs' legs in an excellent white-wine *court-bouillon*. When cooled, trim them properly, dry them thoroughly in a piece of fine linen, and steep them, one after the other, in a *chaud-froid* sauce of fish with paprika, the tint of which should be golden. This done, arrange the treated legs on a layer of champagne aspic-jelly, which should have set beforehand on the bottom of a square, silver dish or crystal bowl. Now lay some chervil *pluches* and tarragon leaves between the legs in imitation of water-grasses, and cover the whole with champagne aspic-jelly to imitate water.

Send the dish to the table, set in a block of ice, fashioned as fancy may suggest.

Frogs' bones

These dessert biscuits from Cataldi (the Milanese cook at Birkhall, Aberdeenshire, private residence of the Prince of Wales and Duchess of Cornwall), are "either round, ratafia shape, or long, and glazed outside, should be very crisp"(Clark, 1909: 334). Their only connection with frog legs is the name.

5 oz (150 g) flour
4 oz (125 g) sugar
3 egg whites

Whip the egg whites in a basin. Add flour and sugar. Flavour with pounded vanilla. Drop through a funnel onto a baking tin; let them rise a little before the fire, then bake.

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