EOL

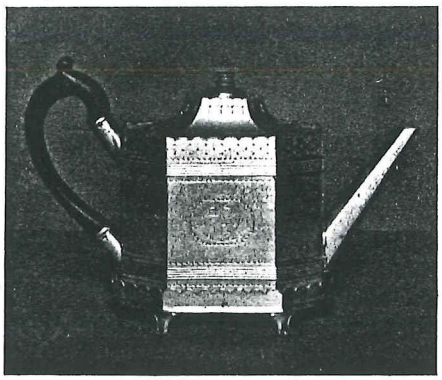
THE STORY OF BRITANNIA METAL

By G. BERNARD HUGHES

BRITANNIA metal, being cheap, containing no poisonous lead, and being more lustrous than pewter, offered an opportunity for the thrifty 19th-century housewife to dress her table with innumerable vessels possessing much of the glitter and elegance of silver. To-day, the main confusion is between old Britannia metal and pewter, for both tend to mellow to much the same tones. But at the height of its success the metal had virtually superseded pewter and, after about 1820, by improvements in manufacturing technique, could abandon traditional pewter forms and be presented in all the opulence of shape and surface ornament then admired in silver and Sheffield plate.

The pewterers themselves, increasing their profits at the customers' expense, hastened their virtual extinction by adding more and more lead to their alloy, until the harmful proportion of 40 per cent. might be present. Not until 1907 did it become illegal to issue vessels made of such dangerous metal: a maximum of 10 per cent. lead was then specified.

The beginning of pewter's decline may be traced to 1769, when John Vickers, of Sheffield, bought for five shillings a formula for making a soft tin alloy so closely resembling silver in appearance that the casual observer would never differentiate between the two after they had been made up and engraved. So highly did Vickers value his bargain that he at once set up a workshop to manufacture "Vickers White Metal" goods, thus laying the foundation of an industry estimated to employ more than five thousand people three-quarters of a century later.



TEA-POT AND STAND OF VICKERS WHITE METAL, FINELY DESIGNED AND ENGRAVED IN THE STYLE OF CONTEMPORARY SILVER. Marked I. Vickers. Late 1780s

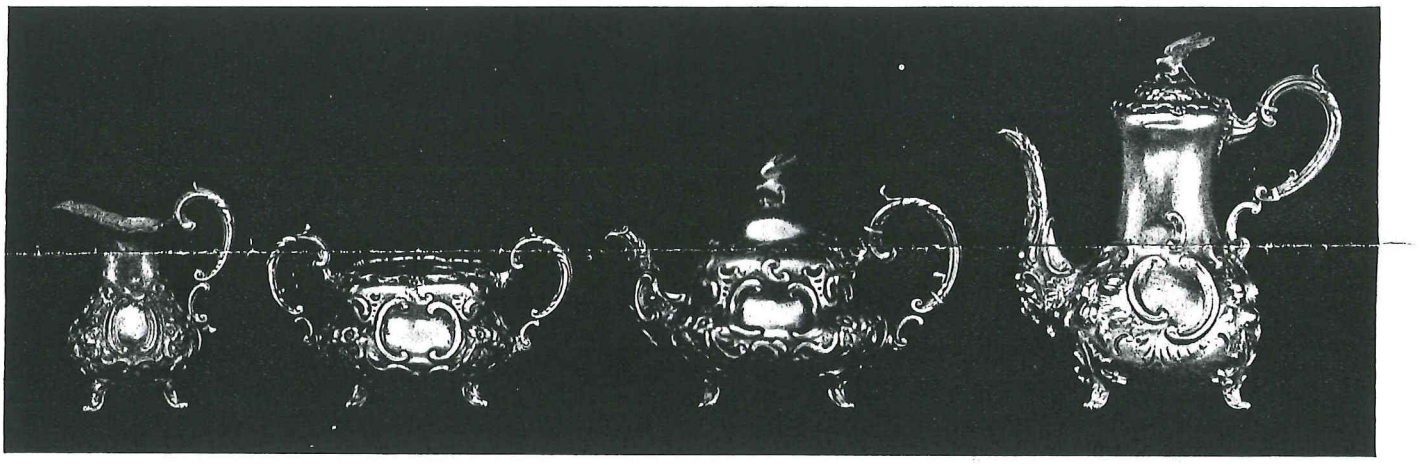
This new alloy, consisting principally of tin, was possibly the "new metal in imitation of silver, called Silvorum," manufactured in 1652 by Major Purling, whom the Pewterers' Company immediately suppressed at a cost to themselves of £14 4s. 9d. The once-powerful Pewterers' Company for centuries used every endeavour to stifle competition.

John Vickers's first appearance in the directories of Sheffield was delayed until 1787, when he was described as a "Maker of Bits and Stirrups plated with White Metal. He also makes measures, tea-pots, caster frames, salt spoons, etc., of the same metal." His output included sugar-basins, cream-jugs, tobacco-boxes and beakers. The ware made from this white metal was finely constructed and engraved, following the shapes of contemporary Sheffield plate. Examples are now rare and always impressed beneath with the name I. VICKERS in small Roman capitals.

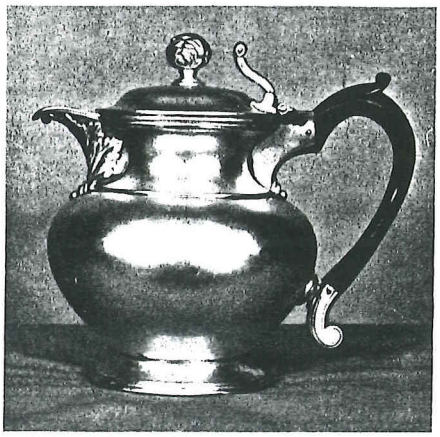
Shortly after 1790 Vickers altered the composition of his alloy, possibly under pressure from the Sheffield platers, to whom his ware was inevitably a formidable competitor. The resulting alloy, composed of tin, antimony, copper and bismuth, was harder, coarser textured and less suggestive of silver than the original Vickers metal. It was named Britannia metal. The absence of lead in its composition, combined with its toughness, made this serviceable metal a distinct advance on the pewter which it eventually superseded. When polished, this silvery-white metal, faintly tinged with blue, becomes highly lustrous. Standard quality Britannia metal, if struck with a wooden rod, emits a clear ringing tone, enabling it to be distinguished easily from pewter. Britannia metal formulæ eventually became countless, but the ingredients were approximately 90 per cent. tin, 8 per cent. antimony and 2 per cent. copper. Antimony is a brittle metal of a bluish-white colour which does not tarnish or rust and was obtained principally from China. A method of hardening Britannia metal was developed in 1844 by James Shaw, whereby it was heated in a bath of fat or oil, generally whale oil.

Britannia metal ingots were prepared in two qualities: for rolling and for casting. The ingots were made by melting the copper, then adding part of the tin and all of the antimony. The temperature was then reduced, for the melting point of the new alloy was considerably lower than that of copper. Finally the remainder of the tin was added and the resulting alloy, when thoroughly fused, was cast into ingots. Ingots intended for rolling contained an increased percentage of antimony. An extensive variety of goods were manufactured by either stamping with dies, casting in moulds or spinning in the lathe.

Some cast ingots—in 1840 they cost 1s. 4d. a pound—were rolled into sheets of suitable gauge by being passed repeatedly between heavy polished steel pressure rollers. Thin gauge metal was preferred because of its greater area to the pound weight and lower cost of working. The earliest Britannia metal was shaped by stamping in dies; the parts were afterwards assembled by soldering. This complicated and laborious process continued in use until about 1820, when it was superseded by hollow-ware produced from sheets by spinning in the lathe, a speedy process by which fine thin discs of rolled metal were made to take any desired convex or globular form. This was effected by the application of the ancient potter's wheel to the plate, a process still in use and known as metal-spinning. This is the earliest use of the process noted in England, although Professor Flinders Petrie found evidence that metal-spinning was practised in Rome two thousand years earlier.



TEA-SET WITH HOT-WATER JUG MADE FROM STAMPED BRITANNIA METAL ENRICHED WITH APPLIED CASTINGS. About 1815



JUG WITH BODY, NECK AND LID SHAPED BY SPINNING BRITANNIA METAL IN A LATHE. About 1825

A disc of Britannia metal rolled to a uniform thickness was placed against a shaped wooden block or chuck revolving in a lathe. Pressure from a bright steel or hardwood tool, or a bloodstone burnisher, forced the thin plate against the wooden form until it took the required shape. Articles made from two or more parts were assembled by tin soldering, carried out with the aid of a blow-pipe; decorative mounts were similarly attached.

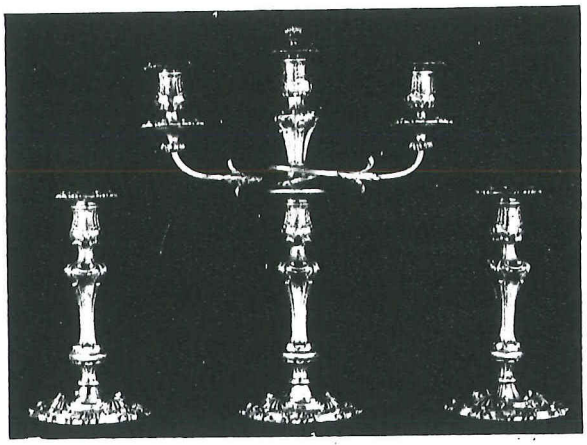
Complicated articles such as ornamental candlesticks, tea-pot handles, feet and decorations were cast in brass moulds composed of numerous sections fitted together and united firmly by enclosing in plaster of paris, which was easily broken off and removed after casting. Such moulds were costly; a handsome tea-pot complete with spout, legs and relief ornaments

might require a mould consisting of eighteen parts and costing as much as £80. The majority of tea-pots, however, were cast in pieces and built up by soldering. Plates, dishes and other simple pieces were cast as single entities.

Articles in Britannia metal, whether stamped, spun in the lathe or cast, were trimmed with steel tools. Until the 1830s smoothing was a hand-process. Steam-driven buffs then came into use, the ware being held against a roughly revolving wooden wheel with a two-inch rim covered with buff, a stout, velvety, dull yellow leather of buffalo or ox-hide. For polishing the depths of recesses, such as flutes, solid discs of walrus or sea-horse leather were used, two to six inches in diameter and tapering towards the rim. Objects unsuited to buffing were rubbed smooth with circular brushes and a fine brownish sand obtained from the River Trent. After washing and brushing in boiling water with soft soap and alkali, the metal was hand-polished with soft soap, a little oil and powdered rottenstone. The parts in relief, such as applied ornament, knobs or handles on covers, were finally burnished with steel tools or silversmiths' blood stones.

Spun Britannia metal was strengthened and given a more finished appearance by spinning over the edges of rims and bases: on cast ware such edges are solid. Fancy feet and handles on tea-pots, water-jugs, milk-jugs and so on are features of Britannia metal distinguishing it from pewter. The surfaces of Britannia metal and good-quality pewter made during the same period now greatly resemble each other, even when cleaned, with the result that much Britannia metal is mistakenly classed as pewter. The constructional methods of pewter were, however, entirely different.

Britannia metal was used for a wide range of table ware among those who could afford neither silver nor Sheffield plate, and especially for tea and coffee services, tea-canisters, soup tureens, gravy-dishes, every variety of vegetable and side dish, cruet frames, dish-covers, as well as tankards, beakers, measures, hot-water jugs, trays and waiters, mustard-pots and salt-cellars, candlesticks and candelabra, fruit-baskets, card-trays, flower-vases and wine-coolers. Spoons and ladles were made until the 1830s, being cast in brass moulds, then scraped and burnished with steel tools. None of these was engraved in the style of Sheffield plate or the earlier Vickers metal, although from 1842 "a frosted, grassed, matted, or dead surface" might be given to Britannia metal ware by the Sturges process. Sturges also evolved a method of engraving the surface of Britannia ware by means of rollers or dies on which were sunk appropriate dots or lines.



A CANDELABRA SUITE IN BRITANNIA METAL CAST FROM BRASS MOULDS. About 1825

Until 1820 Britannia metal tea-pots tended to be small, owing to limitation of manufacturing processes. Sections for building hollow-ware were chiefly produced by drop stamping, which enabled bodies to be decorated inexpensively with designs in relief. Between 1820 and 1845 the shapes of tea-pots made of Britannia metal were distinctive, owing to the development of spinning. Then came the less costly process by which tea-pots, sugar-basins and other hollow-ware could be cast in a solid piece with designs in relief.

Candlesticks were copied from contemporary Sheffield plate patterns and those platers engaged also in the Britannia metal trade might use the same dies for both metals. A considerable trade was carried out in Sheffield by fitting earthenware and stoneware drinking vessels with Britannia metal lids, many of which bear the mark of the eight crossed arrows struck by Broadhurst and Atkins.

Tremendous quantities of Britannia metal goods in special designs were being made for Australia and the Continent, in addition to the home trade. In Sheffield there were seven factories; Birmingham had twelve. Preparation of ingots for the rolling mills appears to have been a Sheffield monopoly at this date and the quality of their finished work was far superior to that of Birmingham.

Names or trade marks were impressed upon much good-quality Britannia metal. John Vickers was responsible for a great proportion of the output until 1806 and all of this was marked I. VICKERS in small Roman capitals. The same mark was continued until 1817, when the letters were enlarged. After 1837 the small capitals were reverted to by Vickers's successors, Rutherford, Stacy, West and Company, and the words BRITANNIA PLACE SHEFFIELD were added below.

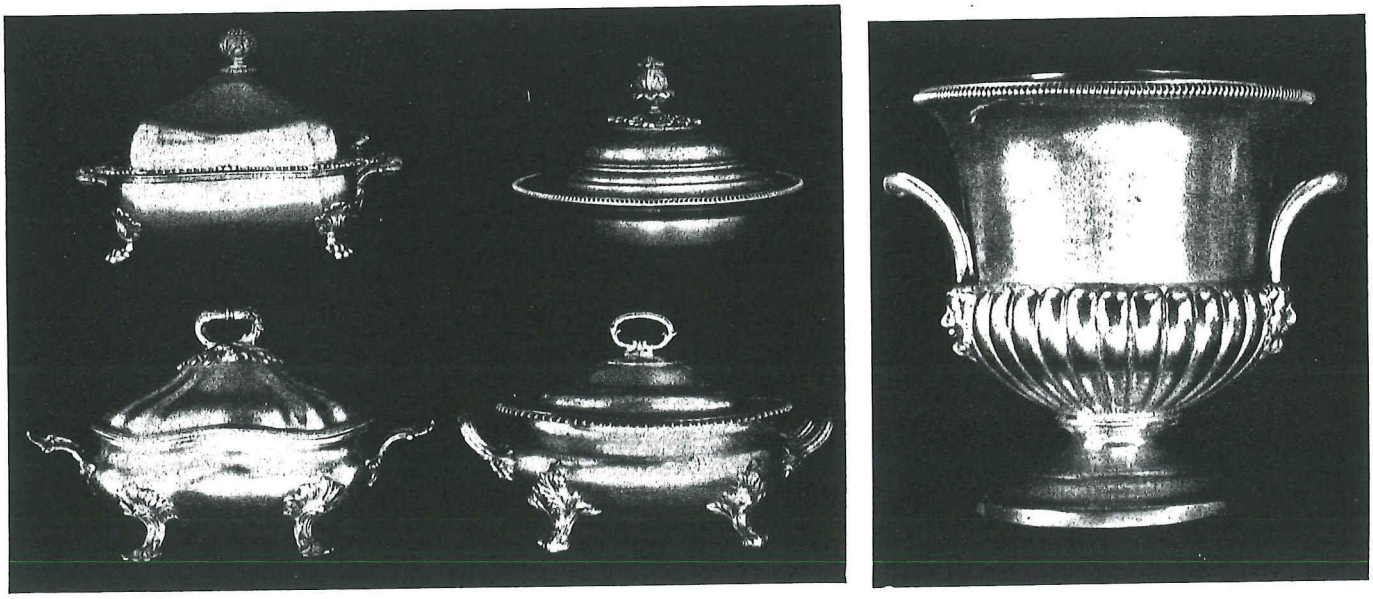
James Dixon, established at Sheffield in 1806, made some of the finest Britannia metal, impressing it with the trumpet and banner mark. This firm never manufactured pewter, yet so close is the resemblance to-day that early examples often find their way into pewter collections. Dixon exhibited excellent tea and coffee services at the Great Exhibition, and the jury reported: "They are an imperfect imitation of silver, but the forms might be very advantageously imitated in that metal. The workmanship is very good and a prize medal is awarded."

Other makers who marked their Britannia ware included Kirby, Smith and Company, from 1797; William Holdsworth, from 1800; John Parker from 1821; J. Wolstenholme, from 1828; P. Ashberry, from 1830; Broadhead and Atkins (eight crossed arrows), from about 1832. Matthew Boulton, of Birmingham, made Britannia metal between 1795 and 1809. When a catalogue number or the word SHEFFIELD is found impressed, the piece is Britannia metal and not pewter.

The pewterers, in an effort to compete with their rivals, began to work with what they called plate pewter. This, composed of 89.3 per cent. tin, 7.14 per cent. antimony, 1.78 bismuth, and 1.78 copper, and rolled into sheets, was in reality no more than Britannia metal.

Many were the variants of Britannia metal marketed under different names, such as Argentine plate, usually cast in moulds, and consisting of 85.5 per cent. tin and 14.5 per cent. antimony; queen's metal, 100 parts tin, 8 antimony, 4 copper, 1 bismuth; Ashberry's metal for casting, which contained 77.5 per cent. tin, 20 per cent. antimony and 2.5 per cent. copper.

Collectors should beware of substitutes for Britannia ware made during the mid-19th century. One method was to coat a thick sheet of lead with a film of tin by means of pressure rollers. Another deception of the period was the tea-pot with a "loaded bottom," the base of the vessel being filled with composition, making the weight of the Britannia metal appear greater than it was in reality. Such tea-pots were made at ten shillings a dozen and were retailed by hawkers, who emphasised that the melting value of the pot was worth its price of eighteen-pence.



CONTRASTING VEGETABLE DISHES IN BRITANNIA METAL. (*Right*) A WINE-COOLER OF ABOUT 1830