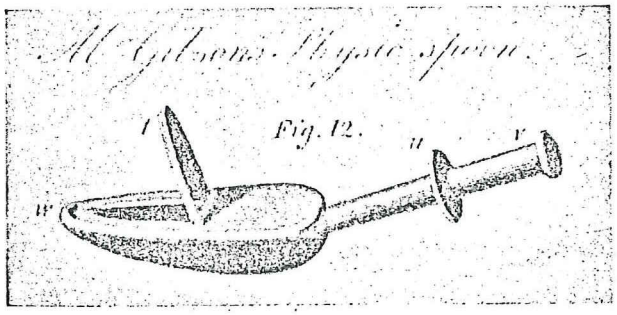
EGR

Mr. Gibson's Physic Spoon

By AGNES LOTHIAN

THE physic or medical spoon made its first public appearance in 1828, when Mr. Gibson, of 71 Bishopsgate Street Within, demonstrated his invention at a meeting of the Society instituted at London for the Encouragement of Arts, Manufactures, and Commerce. He was awarded the Society's silver Isis medal for his invention. In the London directories of the period Charles Gibson is described as a goldsmith.

The cut of the physic or medical spoon for administering nauseous medicines was drawn by Cornelius Varley[1] and engraved by W. Kelsall. It is illustrated in No. 1, taken



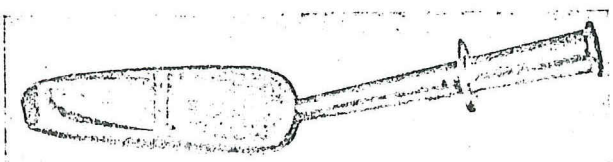
1. Engraving of physic or medical spoon from the *Transactions* (1828) of the Society for the Encouragement of Arts, Manufactures and Commerce (Royal Society of Arts).

from Vol. 46 of the Society's *Transactions* published in 1828. The description of Mr. Gibson's invention is as follows:—

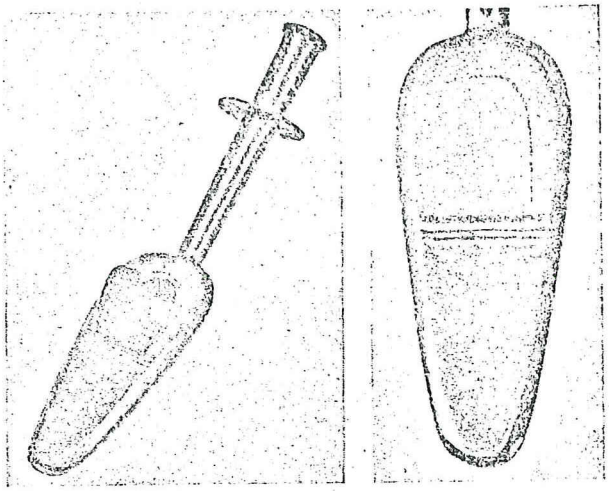
> "In administering medicine in an open spoon to fractious children or to insane persons, part of it is often lost from the struggles of the patient. To remedy this inconvenience, and thus to bring the quantity of medicine given to greater certainty, Mr. Gibson has invented a covered spoon, represented in Fig. 12, Plate I.
>
> The bowl of the spoon is covered, except just at the extremity *w*, where there is an orifice for the discharge of the fluid; in the cover is a flap *t*, with a hinge, which is opened in order to pour in the medicine; the handle *v* is round and perforated, opening externally, and also into the bowl. In order to use it, the medicine is to be poured into the bowl, and the spoon is so to be held in the hand that the thumb may cover the hole at the end of the handle, and two of the fingers may press against the disk *u*, so as to have a firmer hold; the spoon is then to be thrust sufficiently far into the patient's mouth, the thumb is to be withdrawn, and the pressure of the air will immediately force the medicine out of the spoon into the patient's throat."

The earliest Gibson spoon recorded is in the Wellcome Historical Medical Museum, London. It is made of silver and bears the silver mark of 1827 on the inside of the bowl. Gibson's signature and address are inscribed on the stem (illus. 2). This documentary piece is similar to another spoon (unsigned) with the 1829 silver mark. Both spoons measure 5½ in. in length and resemble the spoon in Varley's drawing.

A number of pewter spoons exist marked GIBSON INVENTOR. It is noteworthy, however, that the pewter ex-



2. Silver medicine spoon signed "C. Gibson, Inventor, 71, Bishopsgate St. Within." Silver mark inside bowl for 1827. (Copyright, Wellcome Historical Medical Museum, London).



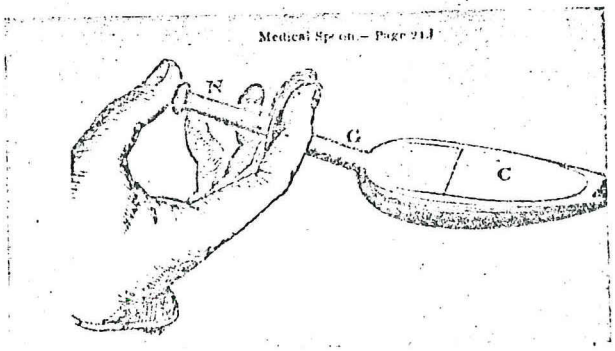
3 and 4. "Gibson" spoon in pewter, opening towards handle.

ample illustrated (3 and 4) opens towards the handle and not towards the spout as in the original (photograph by courtesy of Mr. J. Stanton, London).

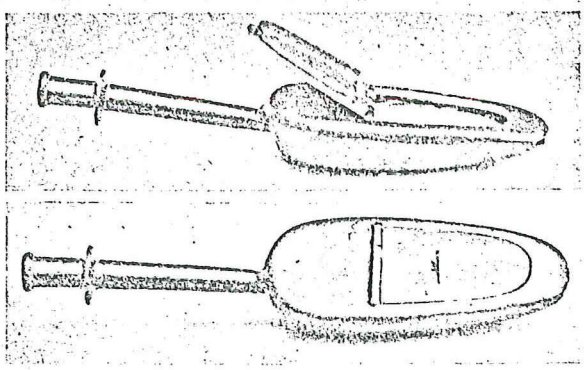
By the 1830's "improved medical spoons" were listed in three sizes in Maw's catalogue; they were priced at 1/4, 1/8 and 2/3 respectively. The method by which the spoon was to be used is clearly demonstrated in illustration 5. The cut is reproduced from the "Catalogue of Surgical Instruments" issued by J. & S. Maw, London, in 1832[2]. One of these early pewter spoons marked J. & S. Maw (not illustrated) is in the Wellcome Historical Medical Museum; it is 6·3 in. in length.

Solomon Maw used the same illustration in his 1839 catalogue[3] published at his "manufactory at No. 11 Aldersgate Street." The firm was restyled J. & S. Maw when the founder George Maw retired in 1828 and left the business to be carried on by his sons, J. H. Maw and Solomon Maw. Maw's business was removed to Aldersgate Street in 1834, J. H. Maw retiring shortly afterwards. George Maw was described as a "pewterer," the style of surgical instrument makers of that time, when pewter was universally employed for syringes, bleeding bowls, etc. The spoons marked "Maw Aldersgate St." must therefore be of later date than the "J. & S. Maw" spoons. Pewter or Britannia metal medical spoons appear again in the 1869 and 1882 lists—the latter issued by S. Maw, Son & Thompson, the designation of the firm between 1870 and 1901. The fluid capacity of these spoons varies from ½ oz. to 1 oz.

John Savory, of 143 Bond Street (the founder of Savory & Moore), in his *Companion to the Medicine Chest* pub-



5. Catalogue illustration showing method of use of spoon.



6a and b. Pewter spoon marked "Maw, Aldersgate St" shown open (above) and closed.

lished in 1836, also illustrated the medical spoon, together with the following observations:—

"For administering medicine to children and adults, without their tasting, or being able to resist its passing into the stomach; and for giving medicine and food in a recumbent position. This spoon is made to contain the quantity required, which is put in at the cover C, and then shut down tight; the tube G is then placed between the fingers, and the thumb pressed on the end of the tube N. When in the mouth, the thumb is removed."

There are also medical spoons in Britannia metal marked "James Dixon & Sons." Those were made by James Dixon & Sons, Sheffield, who were at that time manufacturers of Britannia metal wares. Their spoons have the opening towards the spout and are very similar in appearance to those supplied by Maw's. A James Dixon & Sons spoon from the collection of Mr. Charles Rowed is illustrated in the *C. & D.*, January 31, 1914, p. 146 and also in the *C. & D.* Annual Special Issue, June 25, 1927, p. 822. James Dixon & Sons, Ltd., manufacturing silversmiths, Sheffield, 6, inform me that their medicine spoon was introduced in 1839. It was illustrated in their catalogue of that period, where the sizes available were stated as "small, middle and large."

These physic, or castor-oil spoons, as they are sometimes called, are now of more interest to those who collect pharmaceutical or domestic bygones, but it does seem clear from the inventor's description that the nauseous draught was *not blown down the throat* of the unfortunate patient as has been suggested by many writers.

[1]Cornelius Varley (1781–1873), an artist and inventor, was the father of C. F. Varley, one of the pioneers of telegraphy.

[2]A priced Catalogue of Surgical Instruments, pharmaceutical implements, dispensary utensils, labels, etc., manufactured and sold by J. S. Maw at 55 & 54 Aldermanbury, London, 1832.

[3]A Catalogue of Surgical instruments, pharmaceutical implements, dispensary utensils and vessels, etc., manufactured and sold by S. Maw at his Manufactory at No. 11 Aldersgate Street, London, Nov. 1839.

Permission to reproduce photographs gratefully acknowledged to the Director of the Wellcome Historical Medical Museum; to Mr. John Stanton, London; and to S. Maw, Son & Sons, Ltd., Aldersgate House, New Barnet, Herts.

Leaf Surface

Its part in resisting or admitting chemicals

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RECENT studies indicate the fundamental importance of the macroscopic, microscopic and submicroscopic morphology of the surfaces of leaves in the distribution, retention and penetration of chemicals applied to them. Those factors influence the techniques of formulation. Leaf surfaces have also been shown to play a significant rôle in the defence mechanisms of plants against pests and diseases.

Surface Characteristics

Leaves of higher plants differ macroscopically in the prominence and distribution of veins, and in the presence or absence of hairs or trichomes. The surface of a leaf is protected by a layer of cuticle which covers the epidermis closely and follows the contours of all epidermal cells, including those overlying veins and the epidermal outgrowths or trichomes. The cuticle is frequently smooth—always so in young leaves—but on mature leaves it may be roughened by nodules, cracks, ridges or striations.[1] The cuticle of *Atropa belladonna* exhibits striations which follow the wavy anticlinal walls of the epidermis. Cuticle varies in thickness with the degree of exposure of plants to a drying climate, and is therefore responsible for water conservation. The cuticle layer is important as a barrier to the penetration of parasitic fungi and the sucking organs of insects, and the immunity of certain cultivated varieties of plants to pests and diseases may therefore sometimes be traced to the thickness of the cuticle. A waxy layer is often associated with the cuticle, and the leaves of plants may be classified as waxy or non-waxy. The leaves of potato and tomato are non-waxy while those of the indian-rubber plant and the leek are waxy. The occurrence of wax is responsible for the greyish "bloom" which is frequently described by the term "glaucous." The waxy covering may be seen as minute grains which are loosely adherent to the cuticle, as slender rods attached to the surface by their ends, or forming a more or less continuous sheet. The smooth waxy cuticle of *Juncus inflexus* is folded into ridges and that of *Salvinia* sp. shows curious microprojections. Wax is found as sheets 5-mm. thick on the leaves of the palm *Ceroxylon andicolum* and in such quantity that it can be scraped off for use in making candles. The leaves of the wax palm *Copernicia cerifera* of Brazil produces large amounts of wax, which is collected and marketed as Carnauba wax.

De Bary (1871), who discovered and illustrated the waxy layer of leaves, mentions granular, columnar and plate-like structures. The idea that the leaf wax arises from wax canals is now disproved, and although the mechanism of wax production is imperfectly known it appears that wax is extruded as a soft paste via the cuticle. The cuticle in cross section is complex, being constructed of external cutin (polymerised acids) and wax (higher alcohols and other constituents), then a cutin framework with wax platelets embedded in it.[2] By means of electron microscopy several workers have investigated the submicroscopic morphology of leaf surfaces, for in the majority of plants the surface roughness is beyond the limits of resolution of the ordinary microscope.[3, 4]. Surface replicas reveal minute projections which are assumed to be wax extrusions. Different forms have been found that may be characteristic of species, genus or even family, but, in view of the immense range of surface morphology exhibited, a classification is at present impossible. *Musa* sp. show ribbon-like forms and these are associated with large pits in the leaf. All forms of *Brassica oleracea* look much alike (chimney-like structures), while those of *Chrysanthemum segetum* resemble macaroni. Other plants show "crys-