

ZBIGNIEW BELA

Museum of Pharmacy at the Jagiellonian University, Kraków, Poland

*The Jagiellonian University Museum of Pharmacy:
A maiolica jar inscribed “Conf. Alkermes Compl.”
and the history of the medication*

ABSTRACT

The article consists of four elements: description of the jar (type, character of decoration, provenance etc.), explanation of the inscription (the name of a former multi-ingredient medication), information about its principal ingredient (kermes and its substitutes: cochineal and Polish cochineal), and the history of the medication (from antiquity to the end of the 19th century).

Keywords: museum, pharmacy, antique, maiolica, vessel, decoration, medication, Alkermes, kermes, cochineal



Fig. I. A maiolica jar (the front and the back) inscribed *Conf. Alkermes Compl.* Height: 26 cm. Provenance: Apteka Pod Orłem (Under The Eagle Pharmacy) in Gliwice, 1949. Photo A. Olszowski

This type of maiolica¹ jar is called *albarello*². *Albarelli* can be of waisted, double-gourd and cylindrical form (see Fig. II). All of them have short necks and wide openings with protruding rims to be covered with parchment and tied with string. Receptacles of this type were used in apothecary's shops chiefly to hold semi-liquid medications.



Fig. II. *Albarelli* of waisted, double-gourd and cylindrical form. The Jagiellonian University Museum of Pharmacy. Photo A. Olszowski

The concave part of the jar's body is divided into three horizontal sections. The top band is decorated with an abstract pattern in purple and yellow colours³, while the bottom band is covered with a green and yellow plant motif on a blue background. The back of the middle section is decorated with a green and yellow plant motif on a white background, in the front we have a scroll with the name of the medication and the profile of a man in a helmet – a motif willingly used by manufacturers of majolica in the period from the 16th to the 18th century (see Fig. III).

¹ Maiolica – tin-glazed earthenware.

² The word *albarello* comes from the Arabic *al-barani* (C. Piccolpasso, *Li tre libri dell'arte del vasaio*, Firenze 1976, p. 219, and R. Drey, *Apothecary Jars*, London and Boston 1978, p. 47). Drey also writes that in Liguria *albarello* jars are known as *bornia*, *burnia* or *brunia*, while in the area of Naples they are referred to as *barattolo*.

³ The artist who decorated such ceramic jars had a limited range of colours available, since he could only use mineral pigments, which were the only type resistant to the high temperatures in a potter's kiln. His colours were blue (cobalt oxide), purple (pyrolusite or another manganese ore), yellow (antimonite compounds), green (copper compounds), orange and red (oxides of iron).



Fig. III. Examples of apothecary's maiolica jars with the motif of the head of a man in a helmet. Photo A. Olszowski

The bottom of the jar bears a trademark consisting of three bells, identifying its origin as a potter's workshop which operated in Delft (Holland) in the seventeenth and eighteenth century⁴.

The inscription on the scroll – “Conf. Alkermes Compl.” – is an abbreviation of the full name of the medication: “Confectum Alkermes Completum” (complete alkermes confection). The difference between complete and incomplete alkermes will be explained in a later part of this article.

The word *alkermes*, regardless of whether it referred to the complete or incomplete variety, stands for a former multi-ingredient preparation in the form of confection. The word derives from the name of its principal ingredient, that is kermes (Arab. *qirmiz*), preceded by the Arabic definite article *al* (cf. *alchemy*, *alembic*) to form *alkermes*.

⁴ “The curious custom of naming their factories after natural or artificial objects prevailed among the Dutch potters in the seventeenth and eighteenth centuries, and the marks which they adopted to distinguish their wares were frequently the pictorial representations. (...) The mark of The Three Bells consisted of rude drawings of three bells” (E.A. Barber, *Tin enameled pottery, Maiolica, Delft and other stanniferous faience*, Philadelphia 1906, p. 18). One of the owners of the workshop in 1759 was Dirck van der Does (W. Burton, R. Hobson, *Handbook of marks on pottery and porcelain*, London 1919, p. 45). “In 1654 a gunpowder explosion in Delft destroyed many breweries which became thus available to pottery makers looking for larger premises; some retained the old brewery names, e.g. *The Double Tankard*, *The Young Moors' Head*, and *The Three Bells*” (A. Caiger-Smith, *Tin-Glaze Pottery in Europe and the Islamic World: The Tradition of 1000 Years in Maiolica, Faience and Delftware*, London 1973, p. 131).



Fig. IV. The bottom of the jar – the trademark of the workshop. Photo A. Olszowski

Kermes is a scarlet-coloured natural substance obtained from impregnated female *Coccus ilicis* insects, which feed on the kermes oak (Lat. *Quercus coccifera* – see fig. V). These roundish smooth-bodied organisms, which grow to be as big as peas, were long thought to be plants – it was not until the beginning of the 18th century that they were discovered to be insects. In antiquity, a preparation of kermes “grains” ground with vinegar was applied externally: for example Dioscorides (1st century AD) recommended the medicine as one that makes wounds and other injuries of the body heal fast. Arabic medicine (8th to 13th century) would also apply kermes internally, as an ingredient of the very confection called *alkermes* which was considered to be cardiac and administered mostly to relieve palpitations. It was also used as a tonic and, less often, in the treatment of smallpox and measles.

The formula for *alkermes* arrived in Europe thanks to Latin translations of Arabic medical authors. For example, in the commentary to the *alkermes* recipe in the Prague Pharmacopoeia of 1739 we read that the confection was recommended by Avicenna⁵ and Mesuë⁶, especially as an analeptic (a stimulant) and as an aphrodisiac, and that *alkermes* was generally regarded as a suitable treatment “for weakness or depression not attributable to any particular cause, and as a restorative for the heart and vital forces, as a good medication to cheer the mind and enliven the heart to prevent apoplexy”.

⁵ Avicenna (Ibn Sina) was a Persian polymath who is regarded as one of the most significant thinkers and writers of the Islamic Golden Age. He wrote almost 450 works on a wide range of subjects, of which some 40 on medicine – of which the most important is *Canon medicinae*.

⁶ It is an Arabic name of the author of the Latin work from 11 or 12 century, bearing the Arabic title *Grabadin* (along with the Latin *Antidotarium*, both meaning the collection of recipes for medicinal compounds), whose Arabic original was never found. For a long time it was therefore thought that its author was some Mesuë the Younger, to distinguish him from Johannes Mesuë (777–837), a famous translator of the classics of ancient Greek medicine into Arabic, who therefore was named Mesuë the Elder. The *Grabadin* was very much appreciated by medieval apothecaries (they called its author “the evangelist of apothecaries”) and a lot of his recipes came into first European pharmacopoeias.



Fig. V. On the left: a kermes oak (*Quercus coccifera*). The tree is indigenous to the Mediterranean region (it is found, among others, in Morocco, Portugal and Greece). On the right: a *Coccus ilicis* insect, which resembles a bulbous growth

Recipes for Alkermes appeared regularly in European pharmacopoeias from the early 16th to the late 19th century. In one of them (the Württemberg Pharmacopoeia of 1754) the ingredients for Confectum Alkermes Incompletum included apple juice⁷, aloeswood (agarwood)⁸, lapis lazuli, “Oriental pearls” (see note 17), gold leaf, cinnamon, and sugar, alongside kermes “grains” and – curiously enough – cochineal, the Western hemisphere’s equivalent of kermes “grains”⁹, crushed and mixed with a few drops of oil of tartar¹⁰. Confectum Alkermes Completum contained also ambergris and musk, both very expensive.

A formula for “a crimson confection alkermes”, is also found in Syrenius’ *Herbal* (Zielnik, Kraków 1613). However, instead of kermes “grains”, the recipe uses larvae of the Polish cochineal (*Porphyrophora polonica*), which feeds on the roots of several plant species, especially the perennial knawel (*Scleranthus perennis*).

⁷ The recipe specifies that the apple juice should be made from apples from Borsdorf in Saxony, which were also known as German rennet apples, the oldest variety of rennet apples cultivated in Germany since 1175 and used by European apothecaries in other medications as well.

⁸ Agarwood, also known as oud, comes from the *Agallocha aquilaria* tree.

⁹ More on this subject later in this article.

¹⁰ Oil of tartar was obtained from cream of tartar (chemical name: potassium bitartrate), a crystals which precipitate out and form a sediment on the bottom and sides of wine casks. In the *Herbal* by Marcin Siennik (Kraków 1568) we read that cream of tartar is heated in a pot in a kiln to obtain “pure charcoal”, which is then crushed, put in a linen bag, and suspended in a cellar (viz. in a place which is cool and damp). “After some time it will exude a fine oil which removes pimples and skin blemishes from the face”.

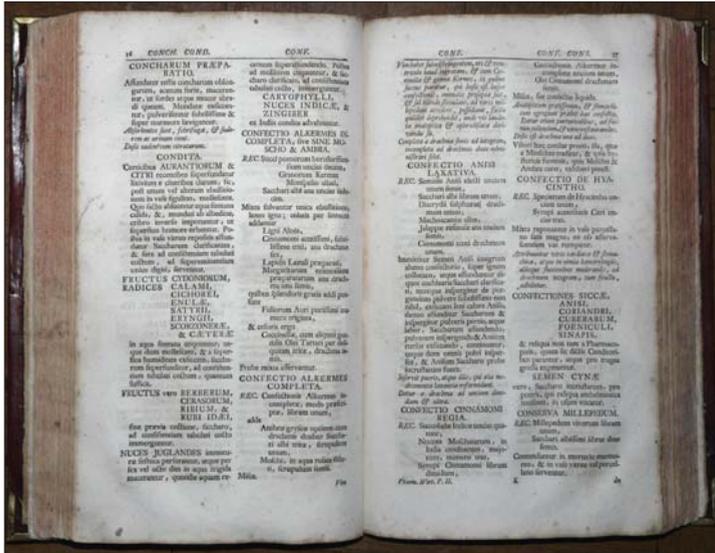


Fig. VI. Confectum Alkermes Incompletum and Confectum Alkermes Completum recipes in the Würtemberg Pharmacopoeia of 1754

**CONFECTIO ALKERMES, seu ELECTUARIUM
GRANAE TINCTORIS MESUE**

*TRIPARTITA, et ex herbis selectis, ac diligentiſſime in noſtra OFFICINA
MEDICINALI apud duorum Aethiopicorum Venetiis.*

Uſum normalis viuetis pro tuerendi Corporis ab infirmitatibus. Eſdem ad
pſentia potuiſſim utilitatem hic heretice receduntur.

Confeſta ipſius Alkermes omnes cordis Palſiones, Cordis Palpitationem,
Syncopeſ, Langorem, & miſſionem eandem ſubleuat.

Indiſpoſitionem, inueterem ſive cauda manifeſta, ac acutiſſimam, & ha-
morum vitalem ſuſcipere eleuat, atque reſtituit.

Plagi, ac cruditatis, & ventriculi diſſipat, Cochleam auget, & Appetitum
mirifice excitat.

Cerebrum permixtione regunt, atque anguſtias ſoluit, ideo a deſidio laborantibus, ſimmo
cum feſtu ſumitur, delectatis Capitis a ſerido excitatis iocundum eſt praefidium, peſſimum
austibus praecaveri, eodemque iam factus expellit.

Cardiaco morbo aſſidua prodit, conſequae corpori facultates conſtituit.

Iuuentum ſurſum, tenaciam vitalem reſtat, Inebrietas, & debiles quae diſſimile reſtat.

Ventriculi caſum fovet, Reſpirationem faciliorem praebet, ac totum hominem exhilarat.

Corpora a vaporibus, & hamorum melancholicis perſelle deſcendit, Oppreſſos ab illis
ſanat.

Pateſcentiam ab interſtitiis, & ventriculo penitus abſurgens, Ipſamque ſigni prohibens. Com-
plexiones reformi.

Agitabilibus longis, quiniſimo moribundis, ac tarde reconvaleſcentibus, aut naturaliter, vel
ipſos caſu languentiſſis ſecundum eſt Remedium.

Hallitum oris commendat, atque omnem penae noxam corpori aduerſam abicit.

Cilicem ſatis floridum, ac placidum aſfert. Totum corpus vitium, Delectationem inducit.

Quotum praebet, & ſonorem placidum atque ſine perturbatione ſolent. Non mirum, ſi a
Regibus, & Magnatibus valde probatum, & frequenter acſumptum.

Fig. VII. A leaflet from a Venice's 17th century pharmacy "Apud duorum Aethiopicum Venetiis" ("Under Two Venetian Ethiops") which advertises "Confectio Alkermes, seu Electuarium Granae Tinctoris Mesue" ("Alkermes confection or electuary, made of kermes grains according to Mesue's formula"), as a splendid medication for "all ailments of the heart, fatigue, and general weakness; it is good for headaches and respiratory problems; it improves the appetite, aids digestion, and stops bad breath, so no wonder it is often applied by kings and lords"

On the subject of Polish cochineal “grains” Syrenius writes thus:

There are red grains in the ground, attached to the roots of some plants, especially the burnet saxifrage, wild strawberry, rye, (...) as well as many others. These are called *czerwiec* for, if they are not gathered in time, *czerw* (maggot) (...) infests and destroys them, which happens at the very beginning of *czerwiec* (June). The grains are dug up and gathered at a suitable time and sold to foreign lands, bringing great profit and considerable benefits. They are dried in full sun or roasted in an oven, while still hot after bread has been baked in it, so that they are not infested by maggots, and can be used to dye the most precious silk and baize¹¹.



Fig. VIII. *Porphyrophora polonica*. At the end of March or the beginning of April, Polish cochineal larvae crawl out of their cocoons in search of perennial knawel shoots. As soon as they find one, they cling to it with suckers. In June they turn into two-winged imagoes and fly away

As far as the recipe itself is concerned, Syrenius' *Herbal* reads:

Alkermes, a Crimson Confection

Alkermes, which is highly beneficial to human health, is made thus: take a pound of raw silk¹² that has just been dyed in pure¹³ crimson cochineal grain juice; a pound and a half each of apple juice obtained from the sweetest, ripe, healthy apples and rose water. Leave the silk, either whole or chopped into pieces, to soak in the apple juice and rose water for 24 hours. Then boil it on low flame until it colours the juice; remove impurities and squeeze the silk out, then put it away. Add some Canaries sugar¹⁴ to the liquid and boil it again to the consistency of honey. Once you have removed the liquid from the flame but before it goes cold, add one lot¹⁵ of chopped ambergris. When the ambergris has dissolved, add some lignum aloe, cinnamon, prepared lapis lazuli, exquisite Uryan

¹¹ Syrenius, *Herbal*, p. 1343.

¹² Raw silk fibre consists of filaments cemented with sericin. Silk processing consists in removing sericine, so that filaments can be separated.

¹³ That is without any additions, which dyers would use to cut back on the expensive material proper, that is “crimson cochineal grains”.

¹⁴ Sugar cane.

¹⁵ The word *lot* (Pl. *lót*) comes from the Old-Germanic *Loth*, meaning lead, which was used to produce half an ounce (about 12–13 g) weights.

pearls¹⁶, half a lot each, a quint of choice gold leaf, and one third of a quint of excellent musk. Mix them together promptly and stock the mixture away immediately. Administer according to (the patient's) age: a quarter of a lot to the old.

Properties and action

It immediately restores to health those who find it difficult to recover from a severe illnesses. In serious ailments it can be of great help to patients who faint or seem to be dying, as if bringing them back to life. Taken a quarter of a lot a time and followed by a drink of good wine or malvasia¹⁷, it may be a powerful cure for those anxious at heart or those who suffer from palpitations or heart weakness or who are losing their mind and are melancholic, who worry or are sad for no good reason¹⁸.



Fig. IX. Pages 1344 and 1345 of Serenius' *Herbal* – the formula for “Alkermes, a Crimson Confection”

¹⁶ The author's suggestion concerning the etymology of the adjective *Uryan* (Old Polish *uryański*), originally *Urduyan* (*urduyański* – pronunciation simplified by dropping *d*) – coming from the country whose inhabitants speak Urdu (mainly today's Pakistan). Hence *Uryan pearl* (Old Polish *perły uryańskie*) stood for *Indian pearls* at that time. Urdu language – the language originated in the 12th or 13th century. It developed among converts to Islam and warriors captured by Muslim forces of Mahmud of Ghazni during the conquest of the Indian Subcontinent. According to Siennik's *Herbal* (p. 336) “pearls strengthen the body against nausea and faintness caused by excessive purgation or haemorrhage. To cure these ailments apply powdered pearls with rose sugar (...). Pearls are also very good against melancholy, which is caused by the quivering of the heart”.

¹⁷ Malvasia – sweet, aromatic, dark-coloured wine which was originally produced in the vicinity of the city of Malvasia in the Peloponnese from the grape variety known as Malvasia and later in other countries of the Mediterranean as well as in the Canary Islands and Madeira.

¹⁸ Syrenius, *Herbal*, pp. 1344–1345.

From the beginning of the 17th century onwards, alkermes was made not only of kermes or the Polish cochineal, but also of *Dactylopius coccus* (cochineal) – the South-American equivalent of the two. *Dactylopius coccus* is a hemipteron of the superfamily *Coccoidea*, which feeds on various kinds of cacti (including *Opuntia coccinellifera*, *Opuntia tuna*, and *Opuntia vulgaris*). Impregnated females were used as a raw material for diuretics, tranquillizers and diaphoretics. The following formula for „alkiermas” (a distorted form of the correct *alkermes*) found in apothecary Antoni Ryl’s manual¹⁹, illustrates the use of the cochineal to prepare alkermes.



Fig. X. Left: impregnated cochineal females on a cactus leaf. Right: dried cochineals

Alkiermas

Coccionellae
 Kali carbonici $\overline{\text{aa}}$ $\frac{3}{j}$
 • Arg. ferri $\overline{\text{aa}}$ $\frac{4}{jj}$
 Aluminis $\overline{\text{aa}}$ $\frac{1}{i}$
 Tartari depurati $\overline{\text{aa}}$ $\frac{3}{j}$
 zmyśniać jak napisano a
 pro przepłukowaniu dwać
 Saccharum $\frac{4}{j}$ i przegotować.

Fig. XI. The formula for alkermes in apothecary Antoni Fortunat Ryl’s manual

¹⁹ Preserved in the library of the Jagiellonian University Museum of Pharmacy (no. 7667).

The formula lists cochineals (Lat. *Coccionellae*) first, as the principal ingredient. The other ingredients are *kalium carbonicum*, *aqua fervida*, *alumen ustum* and *tartarus depuratus*. *Kalium carbonicum* is a potassium carbonate; it was formerly obtained by leaching wood ash. *Alumen ustum* (or *alumen sine aqua*) means “burnt alum” (or “alum without water”). *Aqua fervida* means boiling water, while *tartarus depuratus* stands for beeswing. The formula for alkermes found in Antoni Fortunat Ryl’s manual concludes with the following sentence: “Mix the ingredients together as described and once filtered, add one pound of sugar to the liquid, then boil it”. In comparison with recipes for alkermes mentioned above, with ingredients like gold, pearls, lapis lazuli, ambergris, and musk apart from alkermes, Antoni Ryl’s recipe could well be called *Confectum Alkermes Maxime Incompletum*.

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