

FOSSIL SHARKS' TEETH

A Medieval Safeguard Against Poisoning

by

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ABSTRACT:

In the Middle Ages and in the Renaissance, particularly between the thirteenth and the sixteenth century, the most common way of eliminating one's enemy was by poisoning his food or drink at a banquet. Amongst the precautionary measures adopted by royalty and members of the nobility (who were the chief victims of such attempts), was the use of fossil sharks' teeth mounted as amuletic pendants. Contemporary literature suggests that most of these teeth originated from the Tertiary rocks of the Maltese Islands.

Ornamental set-ups with fossil sharks' teeth attached or suspended, known as *Natternzungen-Kredenzen*, were placed on side-tables (*credence tables*) in readiness for detecting poison by "sweating profusely" or by "sweating and changing colour" when in proximity of poisoned food or drink. As an extra precaution, fossil sharks' teeth were often dipped in beverages to neutralise any poison that might not have been already "detected".

This paper, which is part of a more comprehensive study on fossil sharks teeth, entitled *The Curious Lore of Malta's Fossil Sharks' Teeth*, describes and figures three *Natternzungenkredenzen* known so far to have survived the ravages of time. It records and describes in addition, what is considered to have once been another credence. The treasured object, which is now preserved at the Cathedral Museum, Mdina, Malta, consists of a red coral tree (now devoid of any fossil sharks' teeth pendants) and a silver-gilt crucifix mounted on an elaborately worked pedestal containing representations of poisonous and other animals, leaves and fruit.

In Medieval times the quickest way of doing away with one's enemy was by poisoning his food or drink with an arsenical preparation. The solubility of these compounds in hot water and their tastelessness when mixed with food, rendered them the ideal poisons for homicidal purposes. Arsenious oxide or white arsenic seems to have been the best of them all, as it looked very much like powdered sugar and consequently went

undetected in a sugared drink even when not completely dissolved. In those days, the danger, or rather, the fear of being poisoned was extremely great and affected chiefly royalty and the nobility. As banquets provided an ideal setting for such nefarious projects, strict precautionary measures were adopted by the host to prevent any murderous attempts on his own life and on that of any of his guests. A trusted official of the household was generally allotted the task of tasting the food or drink before it was served at the general table. In France, Germany and Italy this was carried out ceremonially and in full view of the guests, on a small side-table or sideboard placed near the high table. As such side-tables provided visual evidence for the guests that their food was not poisoned, they were generally referred to by the French as *Credence* tables, by the Germans as *Kredenzen*, and by the Italians as *Credenze*, from the medieval latin word *Credentia*, believing. The Maltese word *Gradenza*, which is obviously a corruption of the Latin or Italian equivalent, has now come to mean a chest of drawers, but is a survival of the name long after the precautionary ceremony of food tasting for poison was abandoned. The word, however, still survives in its original meaning of a side-table placed next to the high table, in the Catholic Church inventory and refers to the stone or wooden side-table (Maltese, *Artalett* or *Kredenza*) south of the altar, on epist'le side, on which are placed the cruets containing wine and water, the chalice, the bell and other objects used in the Mass. It is said that the use of the *Credence* table at churches had its origin after the disuse of personal presentation of ablutions at Mass.

The person responsible for carrying out the ceremonial tasting was generally referred to as *Credentarius* (a trusted person) or *pregustator*, because he tasted food before anybody else. It is most probable that the modern custom of the host to "sample", in full view of all his guests, a newly-corked bottle before it is served to them, may not be just a check on the quality of the wine, but a survival of the ceremonial tasting for poison by the *credentarius*. It was also customary for the *credentarius* to give additional visual evidence of the safety of his master's food by handing some of it to the household dogs brought into the banquet-room for the purpose. Undoubtedly, this custom could explain the presence of a dog in an early fifteenth century banquet scene by the Limbourg brothers (*Tres Riches Heures du Duc de Berri*), in *The Last Supper* by Tintoretto and in *La Nozze di Cana* (National Gallery) by Mattia Preti in the seventeenth century. The banquet scene painted by the Limbourg brothers for the Duc's illuminated manuscripts deserves special mention. It depicts the Duc de Berri feasting at table, and a man (probably the *credentarius*) on his knees feeding a dog, with the guests keenly watching

the fate of the animal (1). As if all these precautionary measures were not enough, it was customary between the thirteenth and eighteenth century to have recourse to amuletic fossil sharks' teeth, particularly those from the Miocene rocks of Malta, as these were reputed to have special magical powers against poison.

In Europe, fossil sharks' teeth were generally known as *Glossopetra*, *Linguae Melitensis* or *Linguae S. Pauli*, but the Germans often referred to them as *Nattern-zungen* (adder's tongues) or *Schlangenzungen* (Serpents' tongues). Wolff (1690) referred to them as *Maltesichen amuletten* (2) (the Maltese amulets), whilst the Maltese referred to each of these as *Ilsien San Pawl* (St. Paul's tongue).

In those days when the organic nature of fossil sharks teeth was not even dreamed of, their origin was deeply steeped in mystery. Some attributed to them a celestial origin (3), but others, including the father of Maltese History, Commendatore Gian Francesco Abela (1647) (4), the Maltese writer Francesco Buonamico (1668) (5), the local historian Count Giovannantonio Ciantar (1738-1772) (6) and many other learned men throughout Europe, were convinced that *Glossopetra* were spontaneously generated from rocks (7), particularly those of Malta. The local people believed that these objects were somehow associated with St. Paul's shipwreck on their Island in A.D. 60 (8), for it is said that the

1. Michael Levey, *A Concise History of Painting from Giotto to Cézanne*. (New York, Washington, Frederick A Praeger, 1962), 'Tres Riches Heures du Duc de Berri'. p.66, pl. 99; 'The Last Supper': p. 143, pl. 245.
2. J. Wolff, *Scrutinium amuletorum medicum* (Lipsiae et Jenae, 1690), p. 83.
3. C. Plinius, *Historia Naturalis*, lib. 37, cap. 59. See also Paulus Boccone, *Recherches et observations naturelles touchant le Corail, le pierre étoillée, les pierres de figure de Coquilles le Corne d'Ammon etc.* (Amsterdam, 1674).
4. Giovan Francesco Abela, *Della Descrittione di Malta, isola del Mare Siciliano, con le sue antichità, ed altre notitie, Libri Quattro*, (Malta, Paolo Bonacota, 1647). p. 133.
5. Giovan Francesco Buonamico, *Trattato delle Glossopetre di Malta e di Gozo* (Malta, 1668), pp. 22, 29, 30, 32. Published also in *Opuscoli di autori Siciliani*, Tom. XI (Palermo, 1770), pp. 125-200, as: "Lettera Missiva del Sign. Francesco Buonamico, Maltese, dottore di Medicina, filosofia, poeta, diretta al Agostino Scilla ecc. Data sotto li 28 d'Agosto, 1668".
6. Giov. Antonio Ciantar, "De Melitensibus Glossopetris, ac Lapillis, quae serpentum ocellos vocant" in *De B. Paulo Apostolo in Melitam Siculo-Adriatici Maris Insulam Naufragio ejecto*. Dissertatio Decima (Venezia, 1738), pp. 236-238. See also Giov. Antonio Ciantar, *Malta Illustrata, ovvero Descrizione di Malta, Isola del mare Siciliano e Adriatico, con le sue antichità, ed altre notizie, divisa in 4 libri* (Malta, Stamperia del Palazzo di S.A.S. 1772), Lib. I, Notizia XII, "Della Fertilità di Malta", pp. 388, 412-414.
7. See also Frank Dawson Adams. *The birth and development of the Geological Sciences* (New York, Dover Publications Inc., 1955), p. 122. This edition is an unabridged replication of the first edition of 1938.
8. George Zammit-Maempel, "St. Paul's Tongues and Maltese Folklore" in *Antiquity*, vol. 49, No. 159 (Sept. 1966) Cambridge, pp. 220-221.

Saint, after being bitten by the viper, blessed the land that saved his life, but cursed the Island's snakes. His spell is said to have rendered the local reptiles perpetually harmless creatures. Some even believed that *Glossopetra* in Maltese rocks represented the tongues of those unfortunate snakes that happened to be in existence at the time of the shipwreck (9). Malta's fossil sharks' teeth were consequently thought to possess not only supernatural powers against poison but also many other wonderful virtues. They were, in fact, greatly esteemed also for their powerful deodorant properties and were considered excellent amulets against the evil eye, particularly when the shape of the fossil tooth resembled that of a single horn (10).

When in 1664 Niels Steensen (Nikolaus Steno) visited Malta, he was surprised to see "that no ship goes thither that does not carry some of them" and he did not fail to express his bewilderment that a small island the size of Malta could provide so large a number of specimens for export (11). Leith Adams (1879) records that up to the eighteenth century Malta was still exporting large quantities of sharks' teeth to all parts of Europe (12). Indeed, from the thirteenth to the sixteenth century almost all courts of Europe used fossil sharks' teeth as amulets to detect poisoned food or drink (13) and Hansmann & Kriss-Rettenbeck (1966) (14) record that all regulations for the Tables Ceremonial Tasting of Wine refer to the presence of a *Natternzungenbaum* (adder teeth tree) standing on the side-table or side-board for protection against a poisoned drink. This so called *Languier* or *Natternzungen-kredenz* was a tree-like ornamental object from which were suspended a number of fossil sharks' teeth mounted in gold or silver and used for dipping in beverages in the belief that they removed any poison the drink might contain. It is most probable that the sharks' teeth incorporated in these ornamental set-ups were derived from the Miocene rocks of the Maltese Islands, as no other place in the world was reputed to have *Glossopetra* with greater anti-poison properties than Malta. Ironically as it may seem, no *Natternzun-*

9. J. Wolff, op. cit., p. 407 ff.

10. George Zammit-Maempel, "The Evil Eye and Protective Cattle Horns in Malta" in *Folklore*, vol. 79 (London, Spring 1968), p. 3, pl. 3 fig. B.

11. Nikolaus Steno (Niels Steensen), *De Solido intra solidum naturaliter contento dissertationis Prodrromus* (Firenze, 1669), p. 61. O. Worm, *De Glossopetris dissertatio* (Hafniae, 1686), p. 12.

12. A. L. Adams, "On Remains of Mastodon and other Vertebrata of the Miocene Beds of the Maltese Islands" in *Q. Jl. geol. Soc. Lond.*, vol. 35 (London, 1879), p. 528.

13. Heinrich Pogatscher, "Von Schlangenhörner und Schlangenzungen in 14 jahrhunderte, (mit Urkunden und Akten aus demen Vatikanischen Archive)" in *Romische Quartalschrift für Christliche altertumskunde und für Kirchengeschichte*, XII (1898); p. 203.

14. L. Hansmann and Kriss-Rettenbeck, *Amulett und Talisman* (Munich, Verlag George D. W. Callwey, 1966).

genkredenz has ever been recorded from Malta, notwithstanding that the German traveller Heberer (1610), who visited the Island in 1598 (1600) records having himself witnessed "such a stone" (fossil shark's tooth?, a chip of limestone from St. Paul's Grotto in Rabat, Malta?) being dipped in tankards of important personalities on the Island to protect them from a poisoned drink at a banquet given by the Grandmaster (15).

The immersion of "stones" in drinks for magical protection or as a medical treatment seems to have been still in use during the eighteenth century, for Lemery (1751) records the dipping of Bezoar stones (*Bezoar porcis* sive *Lapis porcinus*) in wine or water as a protection against poisoning. He also records that if the liquid so treated was drunk on an empty stomach, it was said to guarantee protection against ingested poison and to serve "as a sure cure for small-pox, malignant fevers, hysterical fits and amenorrhoea" (16).

Up to 1971, only three *Natternzungen-kredenzen* were known to have survived the ravages of time (17). The present writer, however, has lately discovered in the Treasury of the Mdina Cathedral in Malta, an ornamental set-up which is apparently another coral tree *Languier*. For easy reference, the known credences are herein named respectively:

1. The Tree of Jesse *Natternzunge-kredenz* (at the Grünes Gewölbe, Dresden, D.D.R.);
2. The Coral Tree *Natternzungen-kredenz* (now at the Schatzkammer des Deutsches Ordens, Vienna);
3. The Red Coral Tree and Crucifix "Credence" (now at the Cathedral Museum, Mdina, Malta) and
4. The Goblet *Natternzungen-kredenz* (now at the Kunsthistorisches Museum, Vienna).

On account of their rarity and their great importance in the social life of the Middle Ages and Renaissance, all the above-mentioned credences are being figured and described in this study.

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15. Michael Heberer von Bretten, *Aegyptiaca servitus oder Beschreibung seyner drey-jährigen Dienstbarkeit* (Heidelberg, 1610), Lib. III, cap. XVI, p. 436.
 16. Niccolò Lemery, *Dizionario ovvero Trattato Universale delle Droghe Semplici* (Venezia, Stampata da Giuseppe Bertella, 1751), p. 49. This is the Italian translation of the third French edition of Lemery's work whose first edition was originally published in Paris in 1697.
 17. Hermann Fillitz, *Schatzkammer des Deutschen Ordens. Katalog*. Wien, 1971), not paginated, Raum 2, Nr. 21.

1. THE TREE OF JESSE NATTERNZUNGEN-KREDENZ

(Plate 1.)

There is at the Grünes Gewölbe, Staatliche Kunstsammlungen, at Dresden in East Germany, a *Natternzungen-kredenz* (Inventory No. IV/108) in the form of a Tree of Jesse. From it are suspended a number of mounted fossil sharks' teeth as amuletic pendants. This highly ornamental work of art was carried out in Nürnberg, Germany, at the very beginning of the sixteenth century. It is 19.5 cms high and represents the geneology of Christ from the stock of Jesse in the form of a tree whose stem arises from the recumbent figure of Jesse and ends in the figure of the Madonna with child Jesus. It consequently illustrates in a three dimensional way, Isaias prophecy:

“And there shall come forth a rod out of the root of Jesse,
and a flower shall rise out of his root”. (Isaias, XI, 1)

As Jesse was the father of David, from whose royal line Christ is descended, he is often regarded as the first in the geneology of Christ, so that the above-mentioned tree is generally referred to as *The Tree of Jesse*. It was formerly a favourite ecclesiastical ornament featuring on church windows (hence called “Jesse windows”, examples seen at Wells, Chartres, Dorchester, Oxon), on church doorways (examples seen at Laon and Amiens Cathedral), and on candelabras (Jesse candelabras). A wooden Tree of Jesse once stood behind the high altar in the church of St. Mary at Abergavenny, in the county of Monmouth, England) (18).

The *Languier* or *Natternzungenbaum* at the Grünes Gewölbe, Dresden, has a conical silver mount incorporating a gilted recumbent figure of Jesse, next to which is a snake. The mount supports a silver tree which at a certain level breaks up into a profuse foliage of serrated silver leaves. In between these there emerge six long-stalked drooping silver flowers, each having a mounted fossil shark's tooth (*Isurus*) suspended from the central cup-like corolla. Some of the leaves are upturned to enclose within them a silver-gilted figure of the crowned Madonna with baby Jesus in her lap and with a large serrated tooth of the extinct giant White Shark, *Carcharodon megalodon* Ag. at her back.

2. THE CORAL TREE NATTERNZUNGEN-KREDENZ

(Plate 2)

In Room 2 of the Treasury of the German Order (Schatzkammer des

18. *Encyclopaedia Britannica* (1962 edition), vol. 6, p. 633.

Deutschen Ordens) in Vienna, there is a 32 cms high *Languier* in the form of a red coral tree from whose branches are suspended fourteen fossil sharks' teeth of the Giant Tertiary shark *Carcharodon megalodon* Ag. The coral tree is embedded in a wide silver-gilt hexagonal base supported on a narrower pedestal bearing jewels and the monogram of Christ IHS. This stands for the first three letters of the name *IESUS* (capital E being written as capital H). The different mountings are of German workmanship, which is attributable to the period 1400-1540 (19). The credence which has been figured by Hansmann & Kriss-Rettenbeck (1966) (20) Perusini (1970) (21) and very lately by Oakley (1975) (22), could be the one ordered in Nürnberg in 1453 by Kaiser Frederick III and registered in his inventory as "Item des von Burgandy salzvas das sol man zu einer natternzungen ordnitlich machen und das darin ein pawn stee" (23). It will be noted that the sharks' teeth on this credence are not suspended from perforations in the coral branches, but hang from a loop in a silver-gilt "cap and sleeve" attachment that snugly fits the tip of each branch. The serrated edge of the gilded mounting of each tooth conforms closely with its serrated edges, and renders these pendants very closely similar to those which Maltese gentlemen once suspended from their watch-chain as ornaments and amulets against the evil-eye (24).

3. THE CORAL TREE AND CRUCIFIX "CREDENCE"

(Plate 3, 4)

The association of a red coral tree with Christ's monogram in the *Natternzungenbaum-kredenz* at the Schatzkammer des Deutschen Ordens in Vienna recalled to the author's mind another red coral tree associated with a crucifix mounted on a silver-gilt pedestal once seen exhibited in the Treasury of the Cathedral Museum, Mdina, Malta. No particular significance had ever been attributed to this ornamental set-up except, perhaps, the importance formerly assumed by red coral in the field of religion and superstition (25). Indeed, the red coral single horn, often

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19. Hermann Fillitz, *op. cit.*, loc. cit.
 20. L. Hansmann & L. Kriss-Rettenbeck, *op. cit.* Nr. 258.
 21. Gaetano Perusini, "Amuleti Ittici" in *Bollettino dell'Atlante Linguistico Mediterraneo*, Nos. 10-12 (Firenze, 1970), p. 302, footnote 64; pl. 16, fig. 27.
 22. Kenneth Page Oakley, *Decorative and Symbolic Uses of Vertebrate Fossils* (Oxford, Pitt Rivers Museum, 1975), Occasional Papers on Technology 12, pl. 2, fig.d.
 23. Hermann Fillitz, *op. cit.*, loc. cit.
 24. George Zammit-Maempel, *op. cit.* in *Folklore* 1968, p. 3, pl. 3 C, A.
 25. Gaetano Perusini, *op. cit.*, p. 297.

surmounted by a closed crown to indicate the supremacy of the phallic emblem against the evil eye, is still very popular in Malta and on the Italian mainland. Perusini (1970) who examined the Cathedral Museum item, considered it to be the workmanship of eighteenth century craftsmen from Trapani (Sicily) (26). The present writer, however, could find no hallmark on it to prove this assertion, and documentary evidence from the Cathedral Archives revealed that the mounted cross and coral tree ornament is very much older than assumed by Perusini. Records show that it must have reached the Cathedral Treasury some time between 1550 and 1575, for the item is not listed in the Inventories carried out in 1534 and 1550, but is recorded in that of 1575 (27) and all subsequent lists. Its provenance is completely unknown, as the inventories do not record such details, and the Register of Acquisitions "*Doni fatti alla Catedrale: Opere d'Argento e d'Oro*, was not started before the year 1624, almost half a century after the item was first registered in the Museum Inventories (28).

The descriptions of it given in the various inventories are often very superficial and not always very accurate. No reference is ever made, for example, to the embossed and engraved figures of animals and plants seen on the mount, and yet their decorative and possibly symbolic value seems to be significant enough to warrant a mention. The later lists, however, are more informative and that for 1705 records for the first time the global weight of the ornamental object as being one pound four ounces (29). By 1729 this increased by half an ounce (30). Re-checking its weight in October 1975, the present writer found it to be just one pound, indicating that the object had lost four and a half ounces since 1729. The weight loss is probably due to fracture and disintegration of some of its branch tips.

The security of the Cathedral Treasury does not seem to have been very strict in the early nineteenth century, for in 1815, the treasured object could not be accounted for during the routine checking of the *Croci e Crucetti* material available in the Treasury. This is recorded by

26. *Idem*, footnote 52, and *Ibid.*, Tav. 12, fig. 19.

27. Cath(edral) Arch(ives), Malta, *Inventarii*, Tom. II, 1575, f. 46r.

28. Cath. Arch. Malta, *Indice degli Atti Capitolari* (Indice per Materia) —Doni fatte alla Catedrale: Opere d'Argento e d'Oro (1624 et seq)

29. Cath. Arch. Malta, *Inventarii*, Tom. II, 1705, f.171r.

The entry for the year 1605 (Cath. Arch. Mdina, *Inventarii*, Tom. II, fol. 79r), which is written in a very bad hand, is also very informative: "Item una crucetta d'argento col crocifisso con un capo di morti al piede Ingastato in corallo con il corallo ingastato in un pedicino di argento indorato." The help of Mr. G. Wettinger in deciphering part of this entry is gratefully acknowledged.

30. Cath. Arch. Malta, *Inventarii*, Tom. II, 1729, f. 202v.

a pencil marginal note of "*non si è trovato*" in the inventory list for that year (31).

Description: The "credence" is 309 mm high and consists of a three-branched red coral tree and a silver-gilt cross with crucifix, all set on a richly decorated silver-gilt pedestal. The 150 mm-high coral tree is mounted anterior to the cross, has a diameter of 19.9 mm at its base and lacks most of its branch tips through old fractures. Its central main branch, which re-branches distally, is encircled by two yellow metal "collars" or "sleeves" measuring respectively 19 mm and 23 mm in height. The lower and larger collar is decorated with the engraving of two stylised four-petalled flowers, whilst the upper one lacks any decoration whatsoever and is of a much coarser material. The lower collar does not show any lateral seam and as the branch encircled by it re-branches distally, it must have been inserted subsequent to a fracture. Industrial X-ray films of the coral tree confirm the suspicion that the metal collars or sleeves with fringed edges are not mere ornamental attachments, but are covers and splints for underlying fractures, with the peripheral fringes serving for better anchorage of the broken parts. The films reveal also other internal cracks in the coral tree and the presence of two internal pins: a longitudinally one placed under the middle part of the lowermost metal collar and a smaller one placed transversely near its proximal end.

The elaborately worked silver-gilt mount is 80 mm high has an oval base measuring 132 mm x 88 mm and displays a number of animals and plants embossed or engraved on its surface. Some of the figures represented could not be identified with certainty. The ferocious looking animal with exposed teeth and pricked ears (seen on the left lateral side of the pedestal), seems to represent a bat or a snarling dog, possibly rabid; whilst the triangular skull with lateral projections from the anterior part of its body suggests a turtle. The significance or symbolism of these and other representations, such as that of the snail, is presently obscure, although it is well known that the snail was used for magical healing in the past (32). The renowned emblems of poison — the viper and the salamander, which are encountered also in the impressions or seals on some of the contra-veleno cups made from the *Terra Sigillata Melitensis* (33) — figure several times on the gilded mount. The plant kingdom is

31. Cath. Arch. Malta, *Inventarii*, Tom. VI, 1815, p. 26.

32. *Man Myth and Magic. Illustrated encyclopaedia of the Supernatural.* (London, Purnell, Edition 1), p. 2620.

33. George Zammit-Maempel, "Two contra-veleno cups made from Terra Sigillata Melitensis" in *St. Luke Hospital Gazette*, vol. 10 No. 2, (Malta, December 1975), pp. 85-95 5 figs.

well represented on this pedestal by leaves (monocotyledon, trifoliate leaves and ? palm fronds) and by bunches whose nature could not be ascertained. (? pine cones) Representations of birds and fishes are conspicuous by their absence, probably because they were not generally associated with the idea of poisoning.

There are presently no fossil sharks' teeth suspended from the coral branches; and if there ever were any, these must have been lost either through fractures of the branch tips or through loss of the silver-caps bearing a loop for suspending the pendants. It is possible also that the "credence" never had any suspended amulets, and relied for its magical action (of detecting poisoned food or drink) solely on the power of the red coral and on that of the crucifix. The crucifix seems to be an intrinsic part of the original ornamental set-up and not a later addition, as it counter-balances the forward-tilted coral tree and is recorded in the inventory of 1575 and in those of subsequent years (1575-1880) (34).

It was generally maintained throughout the sixteenth century that red coral could detect poison by changing its colour. Cardanus (1554) confirms this belief and records that he had himself observed red coral losing its brightness and getting paler whenever its wearer became ill or was threatened with a severe illness or else had taken a deadly poison (35). The red coral tree, its association with Christ and the symbolic representations of poisonous animals on the pedestal seem to suggest that the above-mentioned item, now preserved in the Treasury of the Cathedral Museum at Mdina, Malta, was originally intended for the detection of poison in food or drink and is in many ways analogous to the *Natternzungenbaum-kredenz* preserved in the Treasury of the German Order in Vienna.

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34. Cath. Arch. Malta. There is no reference to it in the Inventories for the years 1543 and 1550. The first time that it appears is in the Inventory for the year 1575, and subsequently reference to the same appear in various other Inventories: (Arch. Cath. Malta, *Inventarii*, Tom. II, f. 46r: "Crucetta di corallo encastata in argento", this is the 1575 reference. Thenceforth: 1587, *Ibid.*, f. 69r; 1605, *Ibid.*, f. 79r; 1618, *Ibid.*, f. 95r; 1629, *Ibid.*, f.101r; 1656, *Ibid.*, f.112v; 1666, *Ibid.*, f. 124v; 1678, *Ibid.*, f. 144v; 1686, *Ibid.*, f.154v; 1705, *Ibid.*, f. 171r; 1729, *Ibid.*, f. 202v; 1744, *Ibid.*, f. 227r; 1746, *Inventarii*, Tom. III, p. 21, para 14, Item 5; 1767, *Inventarii*, Tom. IV, f.17v; 1815, *Inventarii*, Tom. VI, p. 26; 1834, *Inventarii*, Tom. VII, p.15; 1853, *Inventarii*, Tom. VIII, p 20; 1880, *Inventarii*, Tom. IX, p. 40, para. 13.
35. Hieronimus Cardanus, *De Subtilitate* (Basileae, 1554), Lib. VII, pp. 191, 205. George Frederick Kuns, *The Curious Lore of Precious Stones*, New York, Dover Publications Inc., 1971), p. 160.

4. THE GOBLET NATTERNZUNGEN KREDENZ (Plate 5)

Another credence known to be still in existence is preserved at the Kunsthistorisches Museum of Vienna (Inventory No. 89). The *Katalog der Sammlung für Plastik und Kunstgewerbe*, Wien, gives a short description of it on p. 32, No. 80, and figures it on plate 43 (36). This languier appeared also in E. Kriss as Goldschmiedarbeiten No. 7 (37).

It is a German work of art of the fifteenth century, originally forming part of the Ambras Collection, and is probably the same credence "with many adder tongues" mentioned in the inheritance of Kaiser Maximilian I. Measuring 270 mm in height, it consists of a topaz goblet whose long, slender stem is surrounded by a bunch of long-stalked silver flowers and a few monocotyledon leaves. A fossil shark's tooth (*Isurus*) protrudes from the central cup-like corolla of each flower surrounding the goblet, and points radially outwards and slightly downwards, as if to protect it from all quarters against poison. The floral arrangement is limited to the upper half of the credence, which has at its middle a conical boss of artistically designed foliage leaves set with their narrow apices pointing upwards and their wide bases downwards. Beneath this level, the stem assumes the shape of a truncated four-sided pyramid resting on a flat, cross-shaped base whose ends recall the shape of the petals of the silver flowers seen on this credence.

The fossil teeth are mounted radially and are permanently fixed in their position at right angles to the goblet. Their fixed position excludes definitely that they were ever intended for dipping in drinks. Their chief function must have been that of protection of the user of that goblet and must have been expected to detect the poison and to neutralise it should any find its way in the goblet which they surrounded.

It was at one time generally believed that fossil sharks' teeth would "sweat and change colour" if applied to someone bewitched or if brought in proximity of poisons (38). The "sweating" of tonguestones was by some believed to be a prerogative of "genuine Maltese tongues". Aldrovandi (1648) however, warned the general public against such a belief, urging them not to attach any importance to it as there were many other "stones" besides "genuine Maltese tongues" that would likewise 'sweat'

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36. Kunsthistorisches Museum, Wien, *Katalog der Sammlung für Plastik und Kunstgewerbe*, Saal XXXVI, p. 32, Nr. 80, pl. 43, Inventory Nru. 89.
 37. Walter Berger, "Fossile Haifischzähne als Materialalterlicher Goldschmiedarbeiten" in *Unsere Heimat*, Monatsblatt des Vereines für Landeskunde von Wien und Niederösterreich, 1950, vol. 21, p. 119.
 38. C.J.S. Thompson, *The Mystery and Romance of Alchemy and Pharmacy* (London, The Scientific Press, 1897), pp. 135-136.

if exposed to the vapours of hot food or drink, poisoned or otherwise (39). Aldrovandi did not specify which were the 'other stones' possessing the same properties as "genuine Maltese tongues", but it is probable that he was referring to the palatal teeth of fossil fish of the *Sargus* family. These are small, button-like yellowish objects formerly referred to as "serpents' eyes" or "bufonites", and likewise considered to be charged with magical powers against poison. Undoubtedly, there must have been several cases of poisoning in spite of the presence of a fossil shark's tooth in the proximity of the poisoned beverage and there must have also been several times when the teeth failed to "sweat profusely" or to "sweat and change colour" as a warning of hidden danger. In such cases, the cause was generally attributed to the "tongues" being *false* or *fakes* or else *not good*. For absolute protection, a tongue had to be not only *genuine* but also *good*. Information leaflets or handbills, which were probably distributed free from St. Paul's Grotto in Rabat, Malta, along with chips of limestone from the "blessed cave" warned our forefathers that "above all one must ascertain that the stone and other above-mentioned objects (St. Paul's tongues and serpents' eyes) are genuine (or as it is put in the handbills: "*vere e reali e non falsificate*")", and that they were brought from the Island of Malta by a trusted person possessing the necessary credentials" (40).

The widespread belief that fossil sharks' teeth from the Island of Malta possessed enormous magical powers and unsurpassed medicinal value, must have greatly boosted the demand for the local *Ilsien San Pawl* or fossil shark's tooth and must have undoubtedly encouraged dishonest dealers to flood the market with *fake* specimens. Bartholinus (1643) records that even "calcareous concretions" were used as substitutes for genuine *Linguae Melitensis* (41), whilst Kai Peterson (1963) narrates that an archbishop in Mainz, Germany, was said to have made considerable profit by selling *fake* Maltese tonguestones (42). The truth or otherwise of this accusation could not be verified as Peterson did not

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39. Ulysses Aldrovandi, *Museum Metallicum* (Bologna, Ambrosini, 1648), Liv. IV, cap.20.
 40. Anon. "Virtù della Pietra di S. Paolo, Delle Lingue & Occhi di Serpi pretiosi quali si trovano nell'Isola di Malta" in a Collection of papers compiled by Jean Hermann in 1738 entitled *Folia naturalis res spectantia*, f.4. This collection forms part of the Librairie National et Universitaire, Strasbourg, Cot. R.5.
 see also G. Zammit-Maempel, *op. cit.*, in *St. Luke Hospital Gazette*, (Malta 1975), fig. 1.
 41. Thomas Bartholinus, *Historiarum anatomicarum et medicarum rariorum* (1643), cent. VI, hist. 1, (Quoted by Wickersheimer, Ernest, "La Pierre de Saint Paul, les yeux de serpent de l'île de Malte" in *Bollettino dell'Istituto Storico Italiano dell'Arte Sanitaria*, 1923, p. 155, footnote 9).
 42. Kai Peterson (in conjunction with the Department of Zoology, Columbia University), *Prehistoric Life on Earth* (London, Muthuen Press, 1963), pp. 10-11.

acknowledge the source of his information and failed to reply to a request dated "Malta, 3rd July, 1972" from the present writer to clarify his statements.

In what may be regarded as the first *illustrated* book on fossils, Gessner (1565) narrates that he himself managed to track down one such fraud in which "teeth of the still existing monsters" were substituted for genuine *glossopetra* (43). Gessner had devised a method by which he could distinguish between a *genuine* and a *fake glossopetra, ceraunia* (fossil sea urchin) or a "thunderstone" (belemnite). His method consisted in winding up a thread round the suspected fake. This was done in such a way that none of its surface remained exposed and that in no place was the string to be ever doubled. After having been so treated, the fossil tooth or other object, was then exposed to hoar frost. Under these conditions, the "genuine" *glossopetra, ceraunia* or "thunderstone" was expected to get damp, and if it did not, it was to be discarded as a "fake". Gessner's test was simple enough, but unluckily, it could not be utilised on the Maltese Islands as the prescribed climatic conditions did not exist locally!

By the end of the sixteenth century, the circulation of faked fossil sharks' teeth does not seem to have been any more of a problem, as none of the writers of the period attached any importance to such unethical activities. Other troubles, however, seem to have plagued the people of those days, for they soon realised that not all *genuine glossopetra* possessed protective and curative powers. Those that did were consequently referred to as *good* tongues, whilst those that did not, were labelled as *bad* ones. This distinction complicated matters still further, as tests had now to be devised to find out which tongues were *good* and which were *bad*. Bartholinus (1643) (44), Valentini (1714) (45) and Wickerskeimer (1923) (46) recorded that "a good tongue" was one whose surface was shiny and whose consistency was hard, but not so hard as to prevent its being easily powdered. A *good* tongue was to be odourless and when masticated, it had to be tasteless; when subjected to the action of fire, it had to carbonise prior to turning into ashes. To Fabio Colonna (1616)

43. Conrad Gessner, *De Rerum Fossilium, Lapidum et Gemmarum maxime figuris et similitudinibus Liber* (Zurich, 1565), fol. 62. F.D. Adams, *op. cit.*, p. 122.

44. Thomas Bartholinus, *op. cit.*

45. Michael Bernhard Valentini, *Museum Museorum oder vollständige Schau-Bühne alter Materialien und Specereien nebst deren natürlichen Beschreibung..... aus andern Material-Kunst-und Naturalien Kammern Ost-und West-Indischen Reise Beschreibung (Unvorgreissliches Bedencken von Kunst und Naturalien Kammerninsegemein* by D. R. Major). Frankfurt am Main 1704-14), 3 thle.

46. Ernest Wickercheimer, *op. cit.*, 1923, p. 156.

it seemed that the latter attribute was a sure proof of the organic origin of *glossopetra*, for had it been an ordinary inorganic stone, he argued, it would have turned into lime (47). Colonna's argument was not accepted by Worm (1686) (48) who quoted in his defence the conflicting results obtained by his predecessors Bartholinus (1643) and Reiskius (1684). Bartholinus had noted that when *glossopetra* from Messina were subjected to the action of fire, they turned into lime (49), whilst, according to Reiskius, those from Lunenburg were converted into black ashes and lime (50).

The powdering-test and the fire-test for the detection of *genuine* and *good* "tongues" is reminiscent of the test to which people of the Middle Ages suspected of witchcraft were subjected in order to prove or disprove the accusation brought against them. Those who survived the ordeal of repeated duckings in a pond were regarded as witches and were consequently killed by the mob; whilst those who succumbed to the ordeal were posthumously considered to have been good citizens, but unluckily, had lost their life in proving their innocence. Similarly, by the time a fossil shark's tooth was tested and proved to be *genuine* and *good*, it would have lost its very properties that made it so, and would therefore be no longer either *good* or useful.

With all these above-mentioned conditions for a "good tongue" satisfied, *Ilsien San Pawl* was expected to detect poison if placed in its proximity, and to cure anybody from almost any malady. Its great magical power is further and more forcefully expressed in these verses by Reiskius (1684) subsequently reproduced by Worm (1686) (51), wherein it is stated that:

"Lapis Linguae similis aut lingua lapidosa
Loqui nescia Loquus Tamen aut eloquens
Ad stuporem facta
Locutulejis & locuturis
Quicumque sient
Pueris Puellis Adolescentibus Faemellis
Juventibus Viris Senibus
Loquor & Edico
Linguis faveant

47. Fabio Colonna, *De Glossopetris dissertatio*. (Quoted by O. Worm, *op. cit.*, p.9).

48. Ole Worm, *De Glossopetris dissertatio* (Hafniae, 1686), p. 15.

49. Thomas Bartolinus, *op. cit.*, loc. cit.

50. Johan Jacob Reiskius, *De Glossopetris Lunenburgensibus* (Leipzig, Johann Georg Lepper, 1684).

51. O. Worm, *op. cit.*, p. 21.

Donec
 Loquellam cujus exfors erat iteret
 Locuta nec iterum forsā loquutura
 GLOSSOPETRA.”

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ILLUSTRATIONS

- PLATE 1. Tree of Jesse Natternzungen-Kredenz.
(Courtesy Staatliche Kunstsammlungen, Dresden, Grünes Gewölbe, D.D.R.)
- PLATE 2. Coral Tree Natternzungen-baum-Kredenz.
(Courtesy Schatzkammer des Deutschen Ordens, Wien).
- PLATE 3. Red Coral Tree and Crucifix "Credence."
Height 309mm, global weight 460 grams; silver gilt mount 80mm high on an oval base 132mm x 88mm; Exposed height of Coral tree 150mm.
(Courtesy Cathedral Museum, Mdina, Malta).
- PLATE 4. Composite picture showing representations of animals and plants engraved and embossed on silver-gilt mount illustrated in Plate 3. Number of representations in brackets.
1. Flower on lower collar (2); 2. ?Bat, ?Dog (1); 3. Snail (3); 4. ?Turtle (1); 5. Turtle (1); 6. Viper (3); 7. Salamander or Lizard (2); 8 ?Pine cone (2). 9 and 10. Monocotyledon leaves, 11. ?Blossom; 12-13. Leaves ?Palm fronds. 14. Trifoliate leaf.
- PLATE 5. Goblet Natternzungen-kredenz.
(Courtesy Kunsthistorisches Museum, Wien).



PLATE 2.

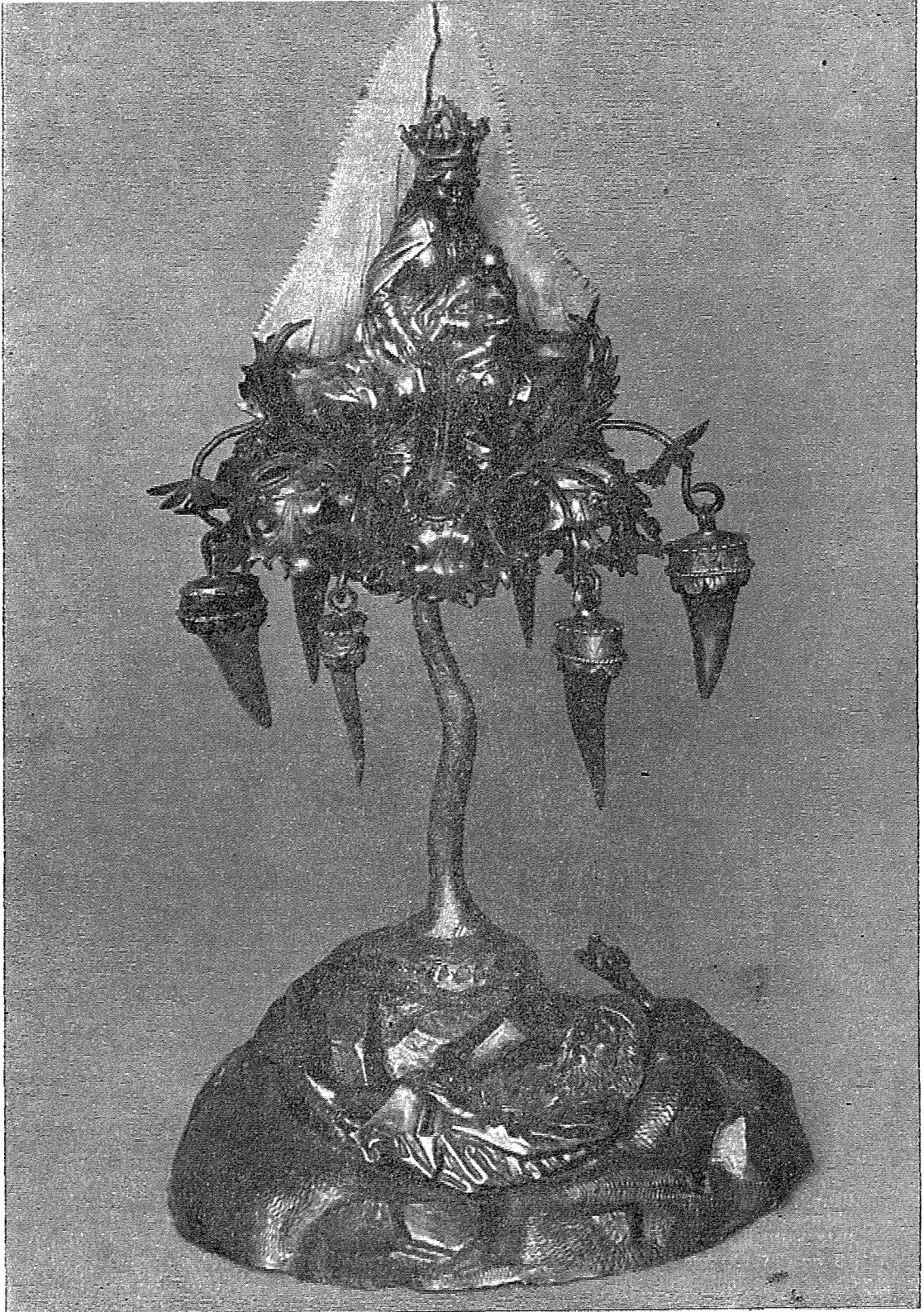


PLATE 1.

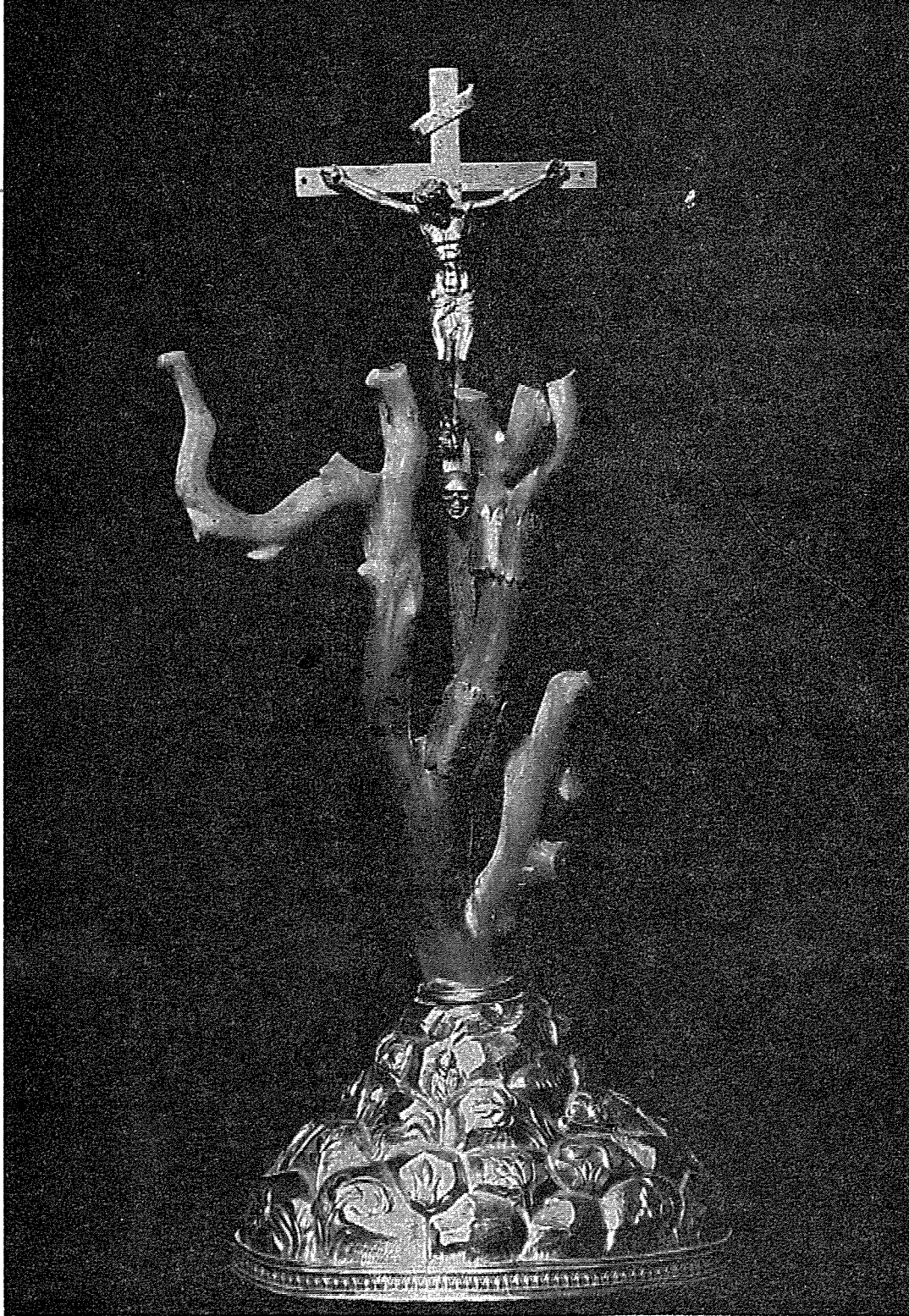


PLATE 3.



PLATE 4.



PLATE 5.