Our knowledge concerning the divisionary coinages of ancient Greece, in particular of ancient Sicily, is indeed scant. I would like to add that, officially at least, we know of only very few published hoards (1) found in Sicily containing fractional silver coins which could help us in their dating. Are we indeed then forced, in the ultimate analysis, to consider only style and weight as our guides, knowing that both elements are only of relative value? Presently, scholars are less assertive in considering style as the main guiding element in establishing chronologies. They have increased the perimeter of research methods by which to approach the so elusive aspect of dating ancient Greek coins. Professor T. Hackens mentions also the «archéologie des catastrophes», traumatic happenings, such as wars and total destruction of sites, among criteria which need additional support. Instead, he recommends a «metrochronology», a chronology which uses as its

main pivot metrology (²). In trying to group and date the small silver fractions, metrology seems indeed the most promising road. But even metrology, the science of standards and weights, must be used with caution. Weights are important but weights alone cannot provide a clear picture, especially when considering coins of minute dimensions and weights. Even today with precision scales, we do register sometimes differences in the weight of some midget coins which could easily change their value from one denomination to another. Therefore, we have to be circumspect in ascribing a specific denomination to a coin based only on its weight. For instance, we cannot call a piece a hemiobol only because its weight of 0.36 g. is within the norm-weight for this denomination without ascertaining the standard (metrology) used for that specific period (chronology). Our coin could easily be an underweight hemilitron (norm weight 0.47 g.) or a tetartemorion (0.48 g.) depending on the standard used. Weights vary greatly for each denomination and could be, therefore, highly misleading since the average person, in ancient as well as modern times, does not have the possibility to register minute differences in weight. There must have been an easier and more obvious method to recognize the fractional values. When arranging a group of Zancle coins of the Samian period, I noticed that they were easily grouped by size, which then was confirmed by weights within a logical range. Once the diameter and weight range are established, we have to ascertain that the respective value can be properly fitted within the metrological standard of that city in a given period.

These fractional coinages must have formed an integral part of a system which dominated the financial life of most of the Greek communities in ancient Sicily. There must have existed a system by which fractions and subfractions were in a fixed relation to one another, as well as to the larger denominations, the drachm being the pivotal unit. We must assume that the method of account for the fractional silver must have been relatively uncom-

plicated (3), since these fractions were *the* money used within the *polis* by its citizenry, sometimes endowed with only limited mathematical talent and with rudimentary means to ascertain infinitesimal weights. I am therefore somewhat hesitant to subscribe entirely to Dr. H. Cahn's statement in his work on Naxos (4): «Für die chalkidischen Städte ist es bemerkenswert, dass Litren und Drachmen in einem zahlenmäßig komplizierten Verhältnis zu­einander standen», an opinion reinforced by Dr. Cahn in 1961 (5): «En plus, tant que nous pouvons attribuer avec une certaine assurance les monnaies au-dessus de l’obole à un étalon déterminé, cette tâche devient difficile, voire impossible pour les pièces divisionnaires». These statements reflect the general opinion of researchers who tried as best they could to avoid these problem areas, an aspect described by Dr. Kraay as: «the modern tendency to make detailed studies of the major denominations only» (6). This situation is due in part to the more than confusing picture created by most of the weights of these small coinages, varying sometimes by only one or more parts of one-tenth or even one-hundredth of a gram (pl. VIII, 1). Many coins are often assigned, based on their weight, to the next best denomination, without regard for any specific relation to a system. But Dr. Cahn explained in part this situation by stating: «so wurde hier eine Art Kreditmünze geschaffen, deren Metallwert unter dem Nominalwert lag» (7). This principle, mostly applicable to the bronze coinage, finds also its use in the classification of the minor silver coinages. The single coins were not meant to represent a given amount of silver, and considering the average weights we are encouraged to think that they were aiming at a norm-weight when striking «al marco», i.e., so many pieces to the unit. T. Hackens states: «Le poids visé à l'ajustage était déjà très diffi-

(3) H. Chantreaine, *Bemerkungen zum ältesten sizilischen und römischen Münzwesen*, in JNG, 1962, p. 58 explains that fractions like 5/12 of a litra were «an sich dem griechischen Münzwesen fremder Wert».
(7) H. A. Cahn, *Naxos*, p. 82.
cillement perceptible lors de la frappe, qui se faisait « al marco ». Le nombre de poids tout à fait excentriques en est une preuve (8).

The general chaotic metrological picture of fractional silver coinages is even more complicated in Sicily due to the addition of a denomination of its own, the silver litra, an innovation resulting from the contact of the Greek colonists with the native Sikel populations from whom the colonists depended for their supplies (9). Do we actually find in Sicily a pure obol-system and a pure-litra-system? Where were the boundaries, in time, between these two systems and what were their relations to each other? Or do we accept the hypothesis of a fluidity which permitted the people to slide from one system to another according to their necessities?

The obol (10) of 0.73 g., one-sixth of an Attic drachm of 4.38 g., was divisible by ten chalkoi, or Sicily, ten onkiai of 0.07 g. each. The obol had as fractions the hemiobol or pentonkion of five onkiai, of 0.365 g. each, the tetartemorion or quarter obol of 0.18., not easily expressed in onkiai values, and the onkia, equal to one-tenth of an obol, of 0.073 g. each. In the early fifth century, there was an obol which was tied to an Euboeic drachm of 5.40 to 5.80 g., with a weight from 0.50 to 1.10 g., with a maximum weight density around 0.70 to 0.85 g. (11).

The litra (12), actually the silver equivalent of a Sicilian standard weight in bronze, and expressed as one-tenth of a Corinthian stater


(9) On the contacts of the Greek colonists with the native populations see : S. CONSOLO LANGHER, op. cit., p. 47ff.; also H. WILLERS, Geschichte der römischen Kupferprägung, Leipzig, 1909, p. 10-17.


of 8.56 g. or one-fifth of an Attic drachm, of 0.872 g. each, was
divisible by twelve into twelve onkiai of 0.072 g. each. A. Böckh (13),
following Aristotle, worked out the sequence of fractions of the litra
based on multiples of the onkia — its smallest fraction equal to
1/12 — as follows: hemilitron or 6 onkiai of 0.435 g. each; trias
or four onkiai, of 0.29 g. each; tetras or 3 onkiai, of 0.218 g. each;
hexas or 2 onkiai, of 0.145 g. each; and one onkia of 0.072 g. What
might seem today at a first glance a haphazard, even totally confus­
ing relation between those two systems (14) must have had a
logical sequence, since man has never been known to be careless
with money, even with the smallest of values.

Guided by the above ideas, I would like to present a few, hitherto
unpublished, fractional silver denominations from Sicily trying, at
the same time, to integrate them within a system or systems which
seem plausible. The areas selected are: Zancle before 494/3 B.C.;
Zancle under the rule of the Samians, 494/3 to 489/88 B.C.; Mess­
sana during the remaining fifth century B.C.; and Rhegium, Mess­
sana's neighbor across the straits which shared most of its finan­
cial destinies, in that period, with Sicily, rather than with Magna
Graccia. It is indeed a duality of two monetary systems which
bespeaks of a period when victorious newcomers attempted to
introduce the coinage of their homeland, a system based on tetra­
drachms, staters, drachms and obols, and at the same time try to
find a modus vivendi within their new environment. They tried to
tap the enormous resources of the hinterland and to establish com­
mercial ties with the native populations. The result had to be some
sort of a compromise, and the coinage might tell us what shape
this compromise took.

I will preface my analysis of some of the Sicilian divisionary
coinages by presenting a schematic diagram of the small silver
coinages of two major cities of Sicily of that period, namely Syra­
cuse and Gela. The reason for this selection is not only the fact
that we do have two excellent studies (15) on their coinages, but

(13) August Böckh, Metrologische Untersuchungen, Berlin, 1838.
(14) The change from obol to litra was facilitated by the hexas, or 2-onkia­
 piece equal to 1/5 obol of 0.145g., i.e. five hexantes equaled one obol.
(15) E. Boehringer, Die Münzen von Syrakus, Berlin, 1929, also P. LeDe­
 rer, Syrakusanisches Kleingeld im 5. Jahrhundert v. Chr., in BMzB, 1913,
p. 493-495, 517-523, 542-548, 572 ; for Gela see : G. K. JenKins, The coinage of
mainly due to the fact that Syracuse and Gela represent the two most powerful and monetarily best organized cities on the island.

With the onset of Gelon's rule in 485 B.C., the Syracusan coinage (see table I, p. 62, reflects the grouping and dating of Erich Boehringer; it would have led me too far afield to work out the newly proposed, and much lower, dating by C. Kraay and C. Boehringer for the various series) displays a greater diversification of denominations. In addition to the tetradrachm, didrachm and drachm of the previous period, the polis introduced also the obol (16), of which E. Boehringer distinguished three different issues, a pentonkion (17), equal to a half obol, with one issue, and a dionkion or hexas (18), also with one issue. It seems more logical to me to relate the pentonkion with five pellets to the obol system, divisible into ten onkiai than to the litra. Although we use the name pentonkion (19), we do call a dionkion (20) a hexas (21). This is based on citations from ancient authors (22), Aristotle and especially Epicharm, a Syracusan comedy writer of the fifth century B.C., who obviously related a nomenclature in daily use in his time in Sicily. It seems that during the rule of the Denominides, in the first half of the fifth century B.C., the Greek colonists tried to impose their way of organizing the fractional currency by striking the obol, which is most certainly linked to the rule of these tyrants. Its half, translated by its markings with five pellets, was already a concession to the native popu-

(17) Ibid., nos. 371-372.
(18) Ibid., no. 373.
(19) H. CHRIST, s.v. Pentonkion, πεντάδρυμον op. cit., 4, p. 1304; F. HULTSCH, op. cit., p. 680; Traité, I, p. 457; P. Lederer called a pentonkion a 5/12 litra, which he considered to be a tie between the litra and the obol, op. cit., p. 518; also N. P. PARISE, Il sistema della litra, op. cit., p. 297: «si spiega con il carattere misto del sistema».
(20) U. WESTERMARK is more consistent and calls the small silver of 0.08 g. of Akragas a dionkion, The fifth century bronze coinage of Akragas, in Atti del VI Convegno, p. 8.
lations, used to the litra system and the onkia value (23). M. Consolo Langher states that: « hemilitron, trias, tetras, onkia sono termini ignoti al mondo greco che li prende dal mondo indigeno » (24). They are reminiscences of the premonetary period of the indigenous population used to the bronze of the aes rude and to the libra as a ponderal unit. An additional concession is also the hexas (25), actually more in name as in weight, since it came very close to a hemitetartemorion or an eighth of an obol. It was adopted for a long period, as the smallest unit, obviously the silver onkia being more difficult to strike (26) and too elusive and unpractical for daily usage. Another important factor in favor of the hexas was that it facilitated the exchange from the obol to the litra: one obol and one hexas equated one litra.

In the next period, 474-450 B.C., in Syracuse, we have only one issue of pentonkiaï (27), stylistically tied to a new denomination, the litra, with the sepia reverse. It seems to me that the last pentonkion was a tie from the previous obol-period soon to be replaced by the litra and its own fraction, the hemilitron (28). The latter was first struck unmarked (29), and later, toward the end of that period, appropriately indicated by six pellets (30). The hemilitron proved to be a very popular denomination, frequently used in the ensuing years down to the 440s. We do not find a corresponding litra which makes only a late, isolated appearance, in about 439 B.C. (31). We do have to add a hitherto little known value (32), a trionkion or tetras, a coin with three pellets, which finds its place also in this late period. Of interest is a group of « barbarized » obols

(24) Atti del VI Convegno, p. 50.
(25) To the Sikel origin of the divisions with the suffix -aç see H. Chantraine, Bemerkungen, p. 58.
(27) E. Boehringer, nos. 431-433.
(29) E. Boehringer, nos. 552-553.
(30) Ibid., nos. 608-611.
(31) E. Boehringer, nos. 729-733.
(32) B. Head, NC, 1874, pl. V, 12; BMC, no. 240.
of Syracuse, Gela, and Leontinoi mentioned by C. Boehringer (33) for the period 475-450 B.C. found in the remote corner of southeast Sicily. They certainly divulge a sufficiently strong interest of the native populations in this kind of fractions. They copied their types with great care, but they were quite negligent when it came to their metrology; all coins correspond more to light hemilitrai rather than litrai.

In summing up, it is interesting to note that the very small values, as the hexantes, continued to be issued only sporadically after the middle of the century leaving a void which was supplanted only in the 430s by small bronze values: the triantes, hexantes, and onkiai (34). Tony Hackens speaks about, "une sorte de mouvement de balancier", by which he tries to characterize the interplay between the bronze coinage and the small silver coins (35). The detailed studies of the Sicilian and South Italian bronze coinages (36) undertaken ten years ago with the scope to research their beginnings, their metrochronology and their impact on the silver coinages is of paramount importance and will further elucidate the function and the circumstances for the demise of the divisionary silver coinages. Many puzzling questions such as the late appearance of some silver midgets, tetrantes, hexantes and even onkiai in Catana, Naxos and Syracuse might find also an answer. C. Boehringer states that the increase in small denominations shortly before the beginning of the bronze coinage is an indication of a rapid growth of the monetization of the economy (37).

(33) C. BOEHRINGER, Die barbarisierten Münzen, p. 157-190; P. LEDERER, op. cit., 542-548.
(34) H. CAIN mentions this void especially for Syracuse, Atti del VI Convegno, p. 342; for bronze values see: R. R. HOLLOWAY, L'inizio della monetazione, p. 123-144.
(37) C. BOEHRINGER, Katanetische Probleme, p. 71-83; also the bulletin of Münzen und Medaillen, issues 373 (1975), and 406 (1978).
We gain a similar, more simplified picture from Gela (see table II, p. 63), where we do have an early period of the obol, accompanied by *its* hexas — possibly as a link between two systems — followed by the litra, so far unaccompanied by any fractions (of course new finds are always possible). With this picture in mind, of an early obol followed after c. 460 B.C. by the litra, I would like to examine the areas previously indicated, namely Zancle, Messana and Rhegium.

My main reason for discussing the fractional coinage of Zancle is primarily to cast some additional light on the very complicated coinage of the Samians, which followed only a few years later in the same city. Accompanying its Euboeic-Chalcidic (38) drachm of 5.50 to 5.80 g., Zancle struck (see table III, p. 64) between the years 525 to 494/3 B.C. (39) two fractional silver units (Pl. VIII, 2-4) (40). The larger one (41) of 0.64 to 0.90 g. was an abundant issue struck over several years and designated by H. Gielow as *litra* (42), and by S. Robinson as *obol* (43). It was paired with a very small fraction, Gielow mentions the "Unikurn" (44) in London of 0.11 g., which she called 1/8 of a litra, and which S. Robinson named 1/8 of an obol. I am completing the latter series with five more specimens from my own collection, weighing between 0.06 and 0.11 g. The weights tend to indicate that our lowest denomination is indeed S. Robinson's 1/8 obol or hemitetartemorion, its


(40) MILNE, *op. cit.*, p. 41, stated that: "there was no exact standardization at Zancle ... if the coins had any denomination ... it cannot be discovered from their weights".

(41) GIELÔW, *op. cit.*, nos. 70-80; ROBINSON, *op. cit.*, p. 19, no. 27; SNG-ANS, nos. 304-306.

(42) GIELÔW, *op. cit.*, p. 10.

(43) ROBINSON, *op. cit.*, p. 19, no. 27.

(44) GIELÔW, *op. cit.*, p. 35, pl. 7, 61; ROBINSON, *op. cit.*, p. 19, no. 28; see also GABRIEL, *Le monete*, p. 6, no. 8, cites one specimen of 0.41 g. from the Messina hoard.
norm within the system being 0.09 to 0.11 g., only slightly heavier than the smallest fraction of the litra series, the silver onkia of 0.072 g. (45). Since we do not have other guidelines, such as value markings, it is indeed very difficult to determine whether we deal with an obol or a litra-system. The weights render a very un­conclusive support, since they vary considerably around the norm­weight for an obol of 0.94 g. and for the litra of 0.87 g. But given the early period of these strikings, long before the middle of the fifth century, I am inclined to agree with S. Robinson in calling the larger fraction an obol.

The next issue, that of the Samians in Zancle (see table IV, p. 64), amply discussed in the numismatic literature of Sicily (46), presents a more complicated metrological picture. S. Robinson states that: «The Samians install themselves under Hippocrates' suzerainty and issue coins of true Samian type, but anonymous and conforming to the standard of Gela and Syracuse, not the old standard of Zancle» (47). Accompanying the tetradrachm struck according to the Euboeic-Attic standard, between 494/3 and 489/8 B.C. are a series of fractions which range in weight from 1.40 down to 0.13g (pl. VIII, 5-6). Considering the weight only, we might be tempted to group the coinage into three, resp. four groups, but their visual appearance made me reject this approach. These silver fractions, of the highest rarity until a hoard came on the market in Rome shortly after World War II (48), give us the impression that we are dealing only with two basic denominations, a larger unit, undoubtedly a diobol, the weights ranging between 0.86 and 1.40 g., and a subdivision, most likely a tetartemorion (norm-weight 0.18 g.), or translated into Sicilian units, a hexas (norm-weight 0.14 g.), since its weights range from 0.13 g. to 0.31 g. We are supported in this supposition by the diameter of the coins, the diameter of the

(45) Struck rarely in Sicily, only toward the end of the fifth century B.C.; for Catane see C. Boehringer, Kalaneische Probleme, p. 73, 77, 82-83.
(47) Robinson, op. cit., p. 17.
(48) Possibly still remnants of the Messina hoard of fractions particularly of Zancle, the Samians, Messana and Rhegium, buried c. 450 B.C., see IGCH, no. 2079; see also, Gabrieli, Le monete dei coloni, p. 5-11.
larger pieces concentrates around 9 mm, and of the smaller ones around 5 mm. I am therefore inclined to substitute the diameter of the coins for their weights as a more reliable, if not completely infallible, criterion for grouping these fractions by denominations.

The first group of diobols, all of superior design and manufacture is characterized by a symbol, a Corinthian helmet, added to the reverse design, the « Samaina ». The helmet induces us to consider the first group as a commemorative or victory issue, bringing the helmet in connection with the relations between the Samian new-comers and the victorious tyrant of Gela, Hippocrates, the actual master of Zancle and of the Samians, around 494/3 B.C. (49). This helmet, to be found only on the diobols (50), (pl. IX, 7) is the only symbol used in the entire Samian coinage of Zancle, making of course abstraction of the letters A, B, Δ, E, found only on tetradrachms (51), and of an I (zeta) found up to now only on the fractional silver, diobol and tetartemorion (52) (pl. IX, 8-9). These letters were interpreted as markings of yearly, or at least periodical, issues (53). The helmet issue was followed by other similar strikings without the helmet (pl. IX, 10), which were of the same denomination, namely diobols, but of a more negligent manufacture, and certainly more delinquent in their weights (1.09 to 0.86 g.). The tetartemoria show also two distinctly different lion-heads (pl. IX, 11).

When examining the Samian coinage, it is only natural to take also into consideration their issues home in Samos (54), barely a few years earlier, and then a striking parallelism becomes evident. The diobols, in Samos as well as in Zancle, were paired with a smaller

(50) ROBINSON, op. cit., p. 20, no. 48; SNG-ANS, IV, no. 390; GABRICI, Le moneta, p. 6, one specimen, no. 2 (1.15g.), from the Messina hoard.
(52) One diobol (0.8061g.) and a tetartemorion (0.3062g.) in my own collection; another described by C. KRAAY, Ashmolean Museum report to visitors (1969-1970), p. 39.
(53) BARRON, op. cit., p. 15, 43; KRAAY, op. cit., p. 213.
(54) BARRON, op. cit., p. 176-177, pl. 6.
denomination, in Samos an obol (\(^{55}\)) (c.0.23 to 0.58 g.), in Zancle a much smaller subdivision, which I prefer to call a tetartemorion (\(^{56}\)) (c.0.13 to 0.31 g.), a concession made most probably to the financial necessities of their new city, the Zancleans being used, as we have seen previously, to a very small divisionary coinage. It is only natural to ask ourselves how was it possible that they omitted to strike the obol, the main fractional unit? It seems that the obol was struck (pl. IX, 12), and we know of only one single specimen in the Fitzwilliam Collection (\(^{57}\)), which with its diameter of 7 mm and its weight of 0.48 g. (certainly quite deficient for an obol) actually falls between the diobol and the tetartemorion. Judging from its rarity today, we are tempted to assume that it was a rather short-lived issue. Was it abandoned after a short striking period in favor of a smaller and more in demand value? All are idle questions, given the scarcity of the pertinent material.

Another puzzling question in the Samian series is the so-called "hemiobol" (\(^{58}\)) or more correctly defined by Barron (\(^{59}\)) as a "trias", resp. tetras, a trionkion (weight 0.33 g., 6 mm), with three dots or pellets (pl. IX, 13). Are they indeed value markings or should we look for another interpretation of these dots which occupy the same place held by the helmet on the "victory-diobols"? Otherwise we must admit that we have here an attempt to create a new denomination pointing more toward the litra-system of the natives. We should cite here N. Parise who states that: "le monete sussidiarie d'Imera, di Zancle e di Nasso dovessero essenzialmente rispondere alle essigenze delle colonie di Calcide di uniformare le proprie emissioni di argento alle specifiche condizioni economiche della Sicilia arcaica" (\(^{60}\)).

\(^{55}\) Ibid., p. 177, nos. 1-4, pl. 6, nos. 1-4.

\(^{56}\) BARRON, op. cit., p. 180 ("hexas"); ROBINSON, op. cit., p. 20, no. 51 ("hexas"); SNG-ANS, no. 311; GABRICI, Le monete, p. 6, no. 1, cites three specimens (0.23-0.16g.).

\(^{57}\) SNG-Fitzwilliam Museum, pt. 2, no. 1064; ROBINSON, op. cit., p. 20, no. 49.

\(^{58}\) SNG-ANS IV, no. 310; according to C. Boehringer a second specimen in private collection (0.32g.).

\(^{59}\) BARRON, op. cit., p. 179; ROBINSON, op. cit., p. 20, no. 50; GIELOW, op. cit., p. 47, no. 91 note.

\(^{60}\) N. F. PARISE, Oboli e litre, in AINN, 1971, p. 16.
In order to complete the metrological picture of Messana after 489/8 B.C. and to show the appropriate framework within which I could place two new and rather interesting denominations, I will continue with the subsequent series following the takeover of Anaxilas in 489/8 B.C. (62) (see table V, p. 65). Under his tyranny, up to his death in 476 B.C. and the period of his successors, up to the establishment of the democracy in 461 B.C., two distinct series of fractional silver coinages were issued. The first issue tied to the Euboeic-Chalcidic tetradrachm of c. 17.31 g., divided into three Chalcidic drachms (62), with facing lion’s head and calf’s head, struck between 489/8 and 480 B.C., consisted of two divisionary coinages: the obol (63), with weights ranging from 0.56 to 0.86 g., and of a subfraction (64), most probably a hexas or dionkion, weights concentrating around 0.10 and 0.12 g. (pl. X, 14-15).

The coins of this period carry, in addition to the facing lion’s head on the obverse, the letters MES on the reverse for the larger unit, and ME for the smaller one. I would like to consider the smaller fraction a hexas (norm-weight 0.14 g.) instead of an onkia (0.07 g.), its average weight actually falling between the two denominations. Significant is the fact that hexantes became a very popular denomination throughout Sicily during that period (65).

The next issue struck in the period 480-461 B.C., in conjunction with the Euboeic-Attic tetradrachm with the apene or mule-biga, introduced by Anaxilas c. 480 B.C. (66), consists again of two basic values, shown before, to which I have to add a new, hitherto unknown denomination (pl. X, 16-17). The obverse design of the Messana coinage featured during that period the hare, the full-

---

(61) C. ARNOLD BIUCCHI, Appunti sulla zecca di Messina dal 480 al 450 a.C., in Quaderni Ticinesi, 12, 1983, p. 49-64.
(62) ROBINSON, op. cit., p. 19, no. 29; BMC, p. 100, no. 10; McClean Collection, I, no. 2376, pl. 78, 8.
(63) ROBINSON, op. cit., p. 20, no. 30; BMC, p. 100, no. 9; SNG-ANS IV, no. 313.
(64) Not mentioned by Robinson, not in BMC or other collections: GA-BRICI, Le monete, p. 6-7, nos. 9-10, mentions two specimens from the Messina hoard (0.11 and 0.18 g.).
(65) Hexantes were issued in Gela, Leontinoi, Himera, Syracuse during that period.
(66) For Anaxilas’ Olympic victory see C. KRAAY, Greek coins and history, London, 1969, p. 28, and Archaic and classical..., p. 214; Robinson is in favor of 480 B.C., op. cit., p. 17; Barron favors instead 484 B.C., op. cit., p. 42.
bodied animal on the larger fraction, and its forepart or head on the smaller values. The heavier value (67), its weight varying between 0.49 to 0.86 g., could be called a litra, if it were not connected to its smaller companion, an exceedingly rare pentonkion (68), with five dots surrounding the M, this coin in a private collection in Italy, its weight being 0.23 g. (pl. X, 18). This indicates that we deal not only with the half of a decimal fraction, but also with a 5/12 of a litra (norm-weight 0.35 g.) equal to a half obol (norm-weight 0.36 g.). This pentonkion, a rare denomination, appears to be another step toward the litra-system, but connected through its value, equal to a half obol, with the obol-system. The next small denominations (69), with hare’s head and the letters ME, show the customary variation of weight from 0.048 to 0.11 g., intimating that we have most likely a hexas and some very rare minuscule coins which could be the very elusive onkia struck in silver, weighing 0.04-0.06 g. This wide outswinging of weights could induce us to cast a doubt about the assignment of all these midget coins to a single denomination. But from the practical point of view of daily monetary transactions, these differences are almost imperceptible. As to the accounting of the surplus metal used in the striking of « overweight » specimens, it was certainly more than outbalanced by the metal saved in the striking of so many underweight larger denominations, such as obols. To adjust each planchet to the norm-weight of the hexantes of 0.14 g. seems even for today’s highly developed techniques, an impossible task. Therefore, the « al marco » method seems to be the only reasonable approach.

The fall of the tyranny in 461 B.C. brings basically only few changes to the major coinages of Messana, though there is movement in the smaller range of values. Similar to Syracuse, in the second quarter of the century, there are distinct shifts: the pentonkion and the hexas are disappearing and the obol is being replaced

(68) Unknown to A. Salinas, Le monete delle antiche città di Sicilia, Palermo, 1867; two specimens from the Palermo (G. 7813) and Syracuse (39255) Museums.
(69) A. Salinas, op. cit., p. 74, no. 666, pl. 33, 9; Robinson, op. cit., p. 20, no. 35 (« uncia »); SNG-ANS IV, no. 325; SNG-Cap., no. 415; Syracuse Museum two specimens (4983, 49005); F. Imhoof-Blumer, Monnaies grecques, Paris, 1883, p. 21, no. 35.
by the litra (70). It is plausible to assume that these two denominations had fulfilled their mission as bridges between the obol and the litra systems. Did the military successes of Duketios, the Sikel leader, swing the monetary balance toward a full acceptance of the litra system on the markets of Sicilian cities, or did the slow but steady process of amalgamation reach its peak? Without any further digression into historico-economic speculations, I would like to underscore the intensified commercial relations with the native Sikels during this period, as one of the main causes for a change from a mixed, dual system to a single one.

The coinage of this period, characterized by the addition of the wreath around the reverse inscription, as an element of celebration, has at least two distinct litra issues, one with the rounded sigma (S) (71) (pl. X, 19-20), and the other with a four-shaft sigma (Σ) (72) (pl. X, 21-22). These reverses are paired with an obverse design of a hare often accompanied by a letter or a symbol. These coins which were struck in very large issues seem to have satisfied in good part the monetary demands of the population for small change, since only a relatively very small issue of hemilitrai (73), with an Η(eta) on the obverse, designating the hemilitron, weight 0.37 g., accompanies these series.

Of paramount importance for the monetary evolution of the silver fractional coinage in the second half of the fifth century B.C. is the introduction of a new monetary system, that of a bronze coinage. Special geopolitical, social and economic conditions caused this new fiduciary coinage (74) to impinge on the development of the monetary exchanges within the polis. The appearance of this bronze coinage, tentatively in some places or more precipitous in others, found a good acceptance among the Greek as well the native

(70) To the change from obol to litra see C. Boehringer, Hierons Altuna und das Hieronion, in JNG, 1968, p. 94; also H. Willers, op. cit., p. 10-17.


(72) BMC, p. 102, no. 34; SNG-ANS IV, nos. 348-353; for the change to the Ionic sigma see C. Kraay, Archaic..., p. 219 (date c. 450 B.C.).

(73) Salinas, op. cit., pl. 38, nos. 22-23; Robinson, op. cit., p. 20, no. 46; BMC, p. 106, no. 65; SNG-ANS IV, no. 355.

(74) For the beginning and the importance of this new monetary system see the volume dedicated to: Le origini della moneta di bronzo in Sicilia e in Magna Grecia by the VI Convegno del Centro Internazionale di Studi Numismatici, Naples, 1977.
Sikel populations, the latter ones with a traditional liking for bronze since its rudimentary stages of the *aes rude*. The silver divisionary coinage which continued to be issued alongside the bronze presents some interesting aspects. So for instance, we encounter more value signs on the silver coins, such as an H(eta). They were possibly added to help the population to relate these silver values to their bronze counterparts.

In order to be able to obtain a clear picture of the monetary situation of the silver divisionary coinage of the late fifth century period in Messana we would need a well established, uncontested, dating for the beginning of the bronze coinage. But opinions vary widely. If we consider the late date of 420 or even 405 B.C., proposed by some scholars (75) for the onset of the bronze coinage in Messana, then we find again a disturbing void of silver small change during the last decade of the century. This void might find an explanation if we consider Prof. M. Caccamo Calatabiano’s (76) setting of the initial period of the bronze toward 442-440 B.C., in stark opposition to the previously proposed datings. According to her grouping this period would have produced hemilitrai, tetrantes and hexantes in bronze, all denominations carrying value marks. She sets the next period only after an interval of ten years, from 433/31 to 424/22 B.C., and the third period, with highly debased values from 424/22 to 408 B.C. This chronology finds a support in K. Rutter’s datings of the Rhegium bronze coinages (77).

Among the last issues of Messana, toward the end of the century, close to the year 396 B.C., the year of its destruction by Carthage, a period, here, as elsewhere in Sicily, rich in highly artistical coinages, new changes can be registered among Messana’s divisionary coinages. A hemidrachm (78), a new denomination in Messana’s entire


coinage of the fifth century, was struck around the turn of the century. Parallel issues are known from Rhegium, across the straights, and from Naxos (c. 420-403 B.C.). The litra issues (79), marked with more than one letter or symbol, continue in a diminished pace. So far no hemilitron is known for that time, but similar to the occurrence in that period in other Sicilian cities, such as Catana (80) and Naxos, a special demand seems to have arisen in Sicily for very small fractional coinages; we find even diminutive silver coins of 0.08 to 0.05 g. From a private collection is known a similar unique specimen from Messana. With its symbol, an ivy-leaf, it should be paired with a fairly large issue of litrai bearing the same symbol (81), which were struck during the last years of the fifth century B.C. (pl. XI, 23-24). Although the weights of this damaged piece of 0.05 g. would fall within the range of an onkia (0.07 g.), I am more inclined to consider it an underweight hexas, more in line with the previous strikings of this denomination in Messana.

Across the straights from Messana was Rhegium, another Chalcidian settlement which, for the first third of the fifth century, formed with Messana what Vallet called: « le royaume du Détroit » (82). Up to the year 461 B.C., when the demos of Rhegium gained its freedom, the tyrant Anaxilas (c. 494 to 476 B.C.) and his sons ruled both cities. The coinages of Messana and Rhegium reflect the unifying policies of this North-Sicilian tyranny by producing almost parallel issues. It is being assumed that Anaxilas organized at Rhegium a unique mint which struck coins for both cities (83).

Rhegium struck in the first part of Anaxilas’ rule an obol (84), weight c. 0.77 to 0.97 g., to accompany the heavy drachm (85) of about 6.65 g., adjusted to the Euboeic-Chalcidian standard of this

(80) C. Boehringer, Kataneische Probleme, p. 72-73.
(81) McClean Collection I, nos. 2403-2404, pl. 80, 6.
(84) Robinson, op. cit., p. 18, no. 4; Traité I, no. 2189, pl. 71, 10; Giesecke, op. cit., p. 15, no. 15, pl. 2, 9; BMC, p. 375, no. 20; SNG-ANS, nos. 623-624.
(85) Robinson, op. cit., p. 18, no. 3; Traité I, pl. 71, 9; Giesecke, op. cit., p. 15, no. 14, pl. 2, 2; McClean Collection I, nos. 1852-1853, pl. 59, 1; BMC, p. 373, nos. 1-2; SNG-ANS, no. 621-622.
early coinage. The facing lion's head and the inscription REC, as the MES in Messana, induces me to assign to this issue, in addition to a pentonkion (86), also some hexantes (87), weight 0.07 to 0.15 g., with RE on the reverse and a lion's head on the obverse, of a compact relief, similar to that of the obol (pl. XI, 25-26). The style of these hexantes differentiates this issue from a similar one with flat relief, which finds a more appropriate place among the later strikings of the post-460 period.

During the next period, 480-461 B.C., still under the tyranny of Anaxilas and of his successors, Rhegium produces a series of divisionary coinages to match its Euboeic-Attic drachm (88). All coins bore the image of the hare on the obverse, Anaxilas' favorite animal, which he, according to tradition, had introduced into Sicily. The divisionary coinage consists of a very rare diobol (89) (pl. XI, 27), weight 1.67 g., and obol (90), weights of 0.61 to 0.80 g., a rare pentonkion (91) equal to a half obol, with a R(rho) surrounded by five pellets, weights 0.27 to 0.33 g., a rather doubtful — most likely misread — hexas (92), with a R(rho) between two dots, weight 0.18 g. (pl. XI, 28-29), and an even rarer onkia (93), weight 0.08 g. Although Messana and Rhegium followed, after the fall of the tyranny, their own separate destinies, there is still a certain similarity in their strikings which lingers on, mainly in the coin-design

(86) ROBINSON, op. cit., p. 19, no. 13 (indicates later period : 462-430 B.C.); GIESECKE, op. cit., p. 16, no. 19a, pl. 2, 13; SNG-ANS, no. 655; Pozzi Collection, no. 320; one specimen also in Leo Mildenberg Collection, Switzerland.

(87) ROBINSON, op. cit., p. 19, no. 14 (indicates later period : 462-430 B.C.); GIESECKE, op. cit., p. 15, no. 16a; GARRICI, Le monete, p. 5, no. 4, cites three coins (0.09-0.11g); SNG-ANS, no. 656.

(88) ROBINSON, op. cit., p. 19, no. 7; Traité I, nos. 2195-2196, pl. 71, 14; BMC., p. 373, nos. 5-6; McClean Collection I, no. 1858, pl. 59, 5; SNG-Cop., no. 1925.

(89) SNG-Lockett, pt. 1, no. 648; Pozzi Collection, no. 321. C. Boehringer considers it, based on its weight, to be a hemidrachm rather than a diobol.

(90) ROBINSON, op. cit., p. 19, no. 8 (litra s); Traité, I, no. 2198, pl. 71, 16; BMC., p. 373, no. 7; GIESECKE, op. cit., p. 16, no. 18, pl. 2, 10; McClean Collection I, pl. 59, 6; SNG-Lloyd, no. 689; SNG-ANS, nos. 633-634.

(91) GIESECKE, op. cit., p. 16, no. 18a, pl. 2, 11; Syracuse Museum (4984).

(92) This coin from the Hermann Weber collection, On some unpublished and rare Greek Coins, in NC, 1896, p. 9-10, pl. 1, 10, seems by diameter and weight to be a misread pentonkion; GIESECKE, op. cit., p. 15, no. 17.

(93) Published by L. BRUNETTI, Italia numismatica (Jan. 1952), as a modern forgery.
The period between 461 and 430 B.C. \(^{(94)}\) was an active and productive time with a well diversified coinage: the tetradrachm and the drachm \(^{(95)}\) were matched by a small unit, an obol, called by some a litra \(^{(96)}\), and by its half, a rare half-obol or half-litra. Based on stylistical similarities, we would like to assign to this period also a hexas (pl. XI, 30-31). A legitimate question would be of course to ask ourselves if these tendencies to emulate their Sicilian neighbours could have motivated the inhabitants of Rhegium to replace their obol with the litra, the typical Sicilian denomination? Considering the parallelism of Rhegium's past strikings with those of Messana, their choice of denominations and, especially, the advanced time period, I am inclined to consider the main fractional unit as a litra. In this respect, we do not get any other helpful indications from the available numismatic material. I am also inclined to assign the litra-piece with REC \(^{(97)}\) and RECI in wreath to the initial years of this period. I base my assumptions on the similarity of its fabric and compact style with the previous coinages which would almost place it in the pre-460 period, were it not for the wreath on the reverse.

The ensuing issue with REC, and especially the larger issue with RECI \(^{(98)}\) within olive-wreath, struck after 445 B.C., are distinctly different in style. With these litrai goes a half-value, a hemi-litra \(^{(99)}\) (c. 0.31 g.), and a rather light hexas \(^{(100)}\), in my

(94) H. HERZFELDER, Les monnaies d'argent de Rhegion, Paris, 1957; also P. LARIZZA, Rhegium Chalcidense, Rome, 1929.

(95) HERZFELDER, op. cit., nos. 12-29, 37-40, 58; ROBINSON, op. cit., p. 19, no. 11; BMC, p. 374-375, nos. 15-19; McClean Collection, I, pl. 59, 13-14; SNG-ANS, nos. 643-650.


(97) Not in Herzfelder; only other specimen in SNG-Cop., no. 1892, and Bank Len sale, Dec. 1961, pl. 9, no. 106.

(98) HERZFELDER, op. cit., pl. 3, 4; ROBINSON, op. cit., p. 19, no. 12 ("litra "); BMC, p. 375, nos. 21-22; GIESECKE, op. cit., p. 16, no. 19, pl. 2, 12; McClean Collection I, pl. 59, 15; SNG-ANS, nos. 651-653.

(99) HERZFELDER, op. cit., p. 89, pl. 4, from Münzhandlung Basel, sale 4, no. 391; SNG-ANS, no. 654.

(100) HERZFELDER, op. cit., p. 84, pl. 4, the Berlin specimen (0.12g).
possession (c. 0.07 g.) (pl. XII, 32-33). The years 425/20 B.C. serve as a date post quem for the issues which change their Chalcidic inscription REC into the Ionic form of PHΓ. To the end of this period, c. 425/4 B.C. have been assigned also some rare bronze strikings \(^{103}\) based on the similarity of style of their design (pl. XII, 34-35). The single pellet on the reverse designates them as onkia pieces, weights c. 1.61 to 1.21 g.

The period from 430/20 to the date of the destruction of the city in 387 B.C. by Dionysus of Syracuse, is characterized by the exquisite style of its coinage, especially the bold design of the lion's mask. During this period Rhegium, like Messana, issued beside the drachm \(^{102}\) also the unusual denomination of a hemidrachm \(^{103}\), weight of 2.13 g., paired with an abundant issue of litrai \(^{104}\), weights 0.65 to 0.82 g., with PH (rho-eta) within an olive spragy. Two more values, one marked with an H(eta) \(^{105}\), the other, hitherto unknown, with a T(tau) round up this series (pl. XII, 36-37). My hopes to find in the last two coins the answer to our previous question whether Rhegium abandoned the obol-system in favor of the litra, were not entirely fulfilled. The H(eta) \(^{106}\) was traditionally used for a hemiobolion, the T(tau) for the tetartemorion \(^{107}\) or the quarter obol; both are value markings found in the Greek coinages. With these two value markings Rhegium


\(^{(102)}\) Robinson, *op. cit.*, p. 19, no. 18; *BMC*, p. 376, no. 28; *SNG-ANS*, nos. 664-667.

\(^{(103)}\) Robinson, *op. cit.*, p. 19, no. 19; *BMC*, p. 376, no. 30; *McClean Collection*, I, nos. 1875-1876, pl. 60, 4; *SNG-ANS*, nos. 668-669; *SNG-Lloyd*, no. 688.

\(^{(104)}\) Robinson, *op. cit.*, p. 19, no. 20; *BMC*, p. 376, nos. 31-35; Giesecke, *op. cit.*, p. 16, no. 20; *McClean Collection*, I, nos. 1877-1878, pl. 60, 5; *SNG-ANS*, nos. 670-674; *SNG-Lloyd*, no. 690.

\(^{(105)}\) Robinson, *op. cit.*, p. 19, no. 21 (*hemiobol, H within O*); *Traité*, I, no. 2212, pl. 72, 11; Giesecke, *op. cit.*, p. 16, no. 20a (*hemitlion*); Gabrici, *op. cit.*, p. 6, no. 3 (*hemiobol*), 2 specimens (0.22-0.27 g.); *McClean Collection*, I, no. 1879, pl. 60, 6; *SNG-ANS*, no. 675; *SNG-Lloyd*, no. 692.


took an innovative move away from the Messana-inspired tradition. What determined the city to inscribe in such a bold way its new fractional coinage? Was it meant to assert by using the traditional specific Greek markings for the hemiobolion and especially the much rarer tetartemorion, that its main fractional unit was an obol and not a litra? Or was it perhaps meant to serve as a guideline in the exchange with the by now more frequently used bronze coinages, divided by the duodecimal method of the litra-system? It is interesting to note that guided by stylistical criteria, we could add to the same group also a few bronze pieces (108) bearing the same reverse design of PH(rho-eta) within an olive-spray, of weights ranging from 5.72 to 1.025 g. (pl. XII, 38-39). Remarkable is the fact that these bronze coins do not bear any value marks, so often used in Sicily. We might assume that they are hemilitrai and onkiai. The latter one could indeed complete very nicely the set of values from the litra to the small onkia.

In focusing again to the H(eta), used also on a Rhegium bronze coin of the period 415–387 B.C. (109), and the T(tau) we do find that these two letters were used also to designate in general any «half» or «quarter», which brings us back to the same question: one-half and one-quarter of what, of an obol or of a litra? In both cases the weights are of no real assistance, the weights of the H(eta)-coins vary between 0.22 and 0.40 g.; the T(tau)-coin, of perfect preservation, weighs only 0.12 g., which makes it a highly delinquent tetartemorion. Another more plausible interpretation is to consider the T(tau) an abbreviation for a tetras (110), a coin equal to three onkiai. This is a denomination used in that period for Sicilian bronze coins, marked with three dots. In this case, we are dealing with a duodecimal division which points toward a litra-system. The tetras is almost an alter ego of the tetartemorion, but each representing a different system. Both coins indicate one «fourth», the tetartemorion, tied to the obol, has a norm-weight of 0.18 g., the tetras, a litra subdivision, weighs 0.21 g. In concordance with Giesecke’s statement that by then we register in Rhegium

(108) ROBINSON, op. cit., p. 19, no. 15 (trias), no. 16 (uncia); BMC, p. 377, nos. 41-42; McClean Collection, I, nos. 1883-1884, pl. 60, 9-10; SNG-ANS, nos. 680-683; SNG-Cop. no. 1939; Virzi Collection, no. 40.


(110) Trías, recte tetras, see H. CHANTRAINE, Bemerkungen, p. 51-64.
In summing up the picture gained through the above presentation I would like to outline in a few words the evolution of the silver divisionary coinages of the corner called by Vallet "le royaume du Détroit". It starts with an obol system, well documented through its specific typology in Syracuse and Gela, which had to make already in an early period concessions to the native litra-system. This was effected through the inclusion of such denominations as the pentonkion and the hexas. The latter one served as a bridge between the two systems making them compatible, viable and practical. With the fall of the tyrannies the dual system came to an end and the way was open for a full acceptance of the litra-system for the silver fractional coinage. But these silver coins could not keep up with the demands of a highly intensified monetary economy, and although they continued to be struck alongside a monetary newcomer, the bronze coinage, they ultimately faded almost completely away, shortly before or during the political and economic upheaval created by the Carthaginian invaders. As for the obol, the preferite coin of the Sicilian tyrannies, it did not vanish completely. It continued to be used in some south Italian areas; it made its existence known in a very impressive way through a Metapontum bronze issue of the late fourth century B.C., boldly inscribed ΟΒΟΛΟΣ.

Only a few closing words for the manufacturing technique of these fractions. I have not ceased to marvel at the craftsmanship of the engravers in Messana and Rhegium, who had to rely only on their perfect eyesight, and a very steady hand to produce these masterpieces in miniature, using probable gravers not larger than the finest needle. I refuse to believe that people who gave so much care to the execution of their coins did not find it necessary to develop a logical, recognizable, and well-balanced system of exchange for their daily transactions.

(111) GIESECKE, Italia numismatica, Leipzig, 1928, p. 18.
(112) About the bronze trias see among others C. BOEHRINGER, Kalaneische Probleme, p. 78-79.
(113) SNG-ANS, Lucania, nos. 552, 554, dated in the Hannibalic period.
1. Comparison in size between a drachm of Alexander the Great (16mm) and a hexas of Messana (4mm).
4. Same group arranged by weight in descending order.
5-6. Diobols and tetartemoria struck by the Samians in Zancle, 494/3-489/8 B.C.
18. Pentonkion of Messana, same period.
19-20. Litrai of Messana, 461-450 B.C., with round sigma, and various letters and symbols. Enlarged 1,5.
21-22. Litrai and hemilitrai of Messana, c. 450-430 B.C., with 4 shaft sigma, symbols and signs of value (H). Enlarged 1,5.
27. Diobol of Rhegium, 480-461 B.C. Enlarged 3.
36-37. Hemidrachm, litra, hemilitron and tetras of Rhegium, c. 430/20-387 B.C. Enlarged 1,5.
This table reflects Erich Boehringer's chronology (see p. 4, regarding the dating of this series). Weights with asterisks are average weights given by Boehringer, the others indicate minimum-maximum weights. Syracuse continued to strike its drachms, hemidrachms, litrai and hemilitrai into the fourth century B.C. In the last twenty years of the fifth century Syracuse added even a short-lived issue of tetrantes or trionkiai.
TABLE II. GELA

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Tetradrachm</td>
<td>17.87</td>
<td>17.30</td>
<td>17.25</td>
<td>17.05</td>
<td>17.10</td>
<td>17.10</td>
<td>17.10</td>
<td>17.20</td>
</tr>
<tr>
<td>Didrachm</td>
<td>8.27</td>
<td>8.20</td>
<td>8.40</td>
<td>7.50</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drachm</td>
<td></td>
<td>4.03-4.15</td>
<td>16mm</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hemidrachm</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1.73-1.75</td>
</tr>
<tr>
<td>Obol</td>
<td></td>
<td>0.47-0.79</td>
<td>9-9.5mm</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hexas</td>
<td></td>
<td>0.08-0.11</td>
<td>6mm</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Litra</td>
<td></td>
<td>0.40-0.90</td>
<td>12-13mm</td>
<td>0.36-0.86</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
TABLE III. ZANCLE

525-494/3

<table>
<thead>
<tr>
<th>Coin Type</th>
<th>Weight</th>
<th>Diameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drachm</td>
<td>4.79-5.96</td>
<td></td>
</tr>
<tr>
<td>Obol</td>
<td>0.49-0.95</td>
<td>10-11mm</td>
</tr>
<tr>
<td>Hemitetartemorion</td>
<td>0.06-0.12</td>
<td></td>
</tr>
<tr>
<td>or 1/8 obol</td>
<td>5.5mm</td>
<td></td>
</tr>
</tbody>
</table>

TABLE IV. THE SAMIANS IN ZANCLE

494/3-489/8

<table>
<thead>
<tr>
<th>Coin Type</th>
<th>Weight</th>
<th>Diameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tetradrachm</td>
<td>16.86-17.35</td>
<td></td>
</tr>
<tr>
<td>Diobol</td>
<td>0.80-1.49</td>
<td>9-10mm</td>
</tr>
<tr>
<td>Obol</td>
<td>0.48</td>
<td>7mm</td>
</tr>
<tr>
<td>Hemihol or tetras</td>
<td>0.33</td>
<td>6mm</td>
</tr>
<tr>
<td>Tetartemorion</td>
<td>0.13-0.31</td>
<td></td>
</tr>
<tr>
<td>or hexas</td>
<td>5-6mm</td>
<td></td>
</tr>
</tbody>
</table>
## Table V. Messana

<table>
<thead>
<tr>
<th>Period</th>
<th>Tetradrachm</th>
<th>Didrachm</th>
<th>Drachm</th>
<th>Hemidrachm</th>
<th>Obol</th>
<th>Pentonkion</th>
<th>Hexas</th>
<th>Litra</th>
<th>Hemilitron</th>
<th>Hexas</th>
<th>Onkia (?)</th>
</tr>
</thead>
<tbody>
<tr>
<td>489/8-480</td>
<td>17.31*</td>
<td>17.49*</td>
<td>17.23*</td>
<td>17.22*</td>
<td>0.56-0.86</td>
<td>0.16-0.23</td>
<td>0.10-0.13</td>
<td>0.59-0.79</td>
<td>0.33-0.37</td>
<td>0.008</td>
<td></td>
</tr>
<tr>
<td>480-461</td>
<td></td>
<td>8.49*</td>
<td>4.05-4.24</td>
<td>2.00</td>
<td>0.49-0.86</td>
<td>0.09-0.11</td>
<td>0.09-0.11</td>
<td>0.50-0.77</td>
<td>0.33-0.37</td>
<td>0.052</td>
<td></td>
</tr>
<tr>
<td>461-430</td>
<td>17.23*</td>
<td>3.65-4.25</td>
<td>3.81-4.09</td>
<td>15mm</td>
<td></td>
<td></td>
<td></td>
<td>11-12mm</td>
<td>10-9mm</td>
<td>6mm</td>
<td></td>
</tr>
<tr>
<td>430-396</td>
<td>17.22*</td>
<td>3.81-4.09</td>
<td>3.81-4.09</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>13-13.5mm</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Table VI. Rhegium

<table>
<thead>
<tr>
<th>Period</th>
<th>Tetradrachm</th>
<th>Didrachm</th>
<th>Drachm</th>
<th>Hemidrachm</th>
<th>Obol</th>
<th>Pentonkion</th>
<th>Hexas</th>
<th>Litra</th>
<th>Hemilitron</th>
<th>Hexas</th>
<th>Onkia (?)</th>
</tr>
</thead>
<tbody>
<tr>
<td>510-494/3</td>
<td>17.63*</td>
<td>16.95-17.39</td>
<td>17.26*</td>
<td>17.07*</td>
<td>0.77-1.05</td>
<td>0.28-0.36</td>
<td>0.17-0.33</td>
<td>0.52-0.86</td>
<td>0.31</td>
<td>0.07</td>
<td></td>
</tr>
<tr>
<td>494/3-480</td>
<td></td>
<td>8.61</td>
<td>4.05-4.30</td>
<td>1.67</td>
<td>0.52-0.86</td>
<td>0.17-0.33</td>
<td>0.31</td>
<td>0.50-0.82</td>
<td>0.22-0.40</td>
<td>0.12</td>
<td></td>
</tr>
<tr>
<td>480-461</td>
<td>5.64</td>
<td>3.63-4.20</td>
<td>3.63-4.20</td>
<td>1.67</td>
<td>0.52-0.86</td>
<td>0.17-0.33</td>
<td>0.31</td>
<td>0.50-0.82</td>
<td>0.22-0.40</td>
<td>0.12</td>
<td></td>
</tr>
<tr>
<td>461-430</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>10-12mm</td>
<td>9-10mm</td>
<td>7mm</td>
<td></td>
</tr>
<tr>
<td>430-387</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>10-11mm</td>
<td>8mm</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Fractional Silver Coinages of Sicily and Magna Graecia
Fig. 1: Comparison between drachms of Alexander the Great (16 mm) and a hekas of Messana (4 mm), actual size.

Fig. 2-3: Obols and hemitetartemoria of Zancle arranged by style and form of legend, actual size. 1. 0.494 g; 2. 0.648 g; 3. 0.735 g; 4. 0.779 g; 5. 0.587 g; 6. 0.695 g; 7. 0.800 g; 8. 0.683 g; 9. 0.529 g; 10. 0.062 g; 11. 0.660 g; 12. 0.096 g; 13. 0.110 g.

Fig. 4: Same group arranged by weight in descending order, actual size. 1. 0.800 g; 2. 0.779 g; 3. 0.735 g; 4. 0.695 g; 5. 0.683 g; 6. 0.648 g; 7. 0.587 g; 8. 0.529 g; 9. 0.494 g; 10. 0.110 g; 11. 0.110 g; 12. 0.096 g; 13. 0.062 g.

Fig. 5-6: Diobols and tetartemoria of the Samians in Zancle, actual size. 1. 1.403 g; 2. 1.296 g; 3. 1.020 g; 4. 0.856 g; 5. 1.090 g; 6. 0.940 g; 7. 0.864 g; 8. 0.806 g; 9. 0.306 g; 10. 0.249 g; 11. 0.246 g; 12. 0.223 g; 13. 0.206 g; 14. 0.202 g; 15. 0.186 g; 16. 0.160 g; 17. 0.131 g.
Fractional Silver Coinages of Sicily and Magna Graecia
Fig. 7: Diobol of the Samians with symbol: helmet. Enlarged 3 ×.

Fig. 8-9: Diobols and tetartemoria of the Samians in Zancle with letters zeta. Enlarged 4 ×. 1. 0,806 g; 2. 0,306 g.

Fig. 10: Diobols and tetartemoria of the Samians in Zancle arranged by style, actual size.

Fig. 11: Fractional silver coins of Samos.

Fig. 12: Obol of Samos. Enlarged 3 ×.

Fig. 13: Tetras of Samians in Zancle. Enlarged 6 ×.
Fig. 14-15: Obol and hexas of Messana, 489/8-480 BC. Enlarged 3 x. 1. 0,570 g; 2. 0,120 g.

Fig. 16-17: Obol and hexas of Messana, 480-461 BC. Enlarged 4 x. 1. 0,610 g; 2. 0,092 g.

Fig. 18: Pentokion of Messana. 0,23 g.

Fig. 19-20: Litrai of Messana 461-450 BC, with round silver showing letters and symbols. Enlarged 1 1/2 x. 1. 0,69 g; 2. 0,59 g; 3. 0,67 g; 4. 0,75 g.

Fig. 21-22: Litrai and hemilitron of Messana 450-430 BC, with E showing symbols and sign of value. Enlarged 1 1/2 x. 1. 0,67 g; 2. 0,76 g; 3. 0,33 g.
Fractional Silver Coinages of Sicily and Magna Graecia
Fig. 23-24: Obol and hexas of Messana c. 415 BC with symbol: ivy leaf. Enlarged 3 ×. 1. 0.71 g; 2. 0.052 g.

Fig. 25-26: Obol, pentonkion and hexas of Rhegium c. 494-480 BC. Enlarged 2 ×. 1. 0.774 g; 2. 0.30 g; 3. 0.119 g.

Fig. 27: Diobol of Rhegium 480-461 BC. Enlarged 3 ×. 1.67 g.

Fig. 28-29: Obol, pentonkion and hexas of Rhegium c. 480-461 BC. Enlarged 2 ×. 1. 0.52 g.

Fig. 30-31: Litra and hexas of Rhegium, 461-430 BC. Enlarged 3 ×. 1. 0.61 g; 2. 0.13 g.
Fractional Silver Coinages of Sicily and Magna Graecia
Fig. 32-33: Litra, hemilitron and hexas of Rhegium, 445-430 BC. Enlarged 2 ×.  
1. 0,70 g; 2. 0,31 g; 3. 0,07 g.

Fig. 34-35: Bronze onkiai of Rhegium, c. 425/4. Enlarged 2 1/2 ×. 1. 1,21 g;  
2. 1,309 g.

Fig. 36-37: Hemidrachm, litra, hemilitron and hexas of Rhegium, 430/20-387  
BC. Enlarged 1 1/2 ×. 1. ANS 668; 2. 0,68 g; 3. 0,32 g; 4. 0,12 g.

Fig. 38-39: Bronze hemilitron and onkia of Rhegium, c. 425 BC. Enlarged 2 ×.  
1. 5,491 g; 2. 1,028 g.

Fig. 40-41: Silver tetras of Rhegium, c. 430/20-357 BC. Enlarged 5 ×. 0,12 g.