

NOTAE NUMISMATICAE

ZAPISKI NUMIZMATYCZNE



Tom XVI

MUZEUM NARODOWE W KRAKOWIE
SEKCJA NUMIZMATYCZNA
KOMISJI ARCHEOLOGICZNEJ PAN
ODDZIAŁ W KRAKOWIE

Kraków 2021

NOTAE NUMISMATICAE

ZAPISKI NUMIZMATYCZNE

Tom XVI

MUZEUM NARODOWE W KRAKOWIE
SEKCJA NUMIZMATYCZNA
KOMISJI ARCHEOLOGICZNEJ PAN
ODDZIAŁ W KRAKOWIE

Kraków 2021

Komitet naukowy / Scientific Committee:

Prof. Peter van Alfen, Prof. Michael Alram, Prof. Aleksander Bursche, Prof. François de Callataÿ, Dr Karsten Dahmen, Prof. Georges Depeyrot, Dr Haim Gitler, Zofia Gołubiew, Prof. Wiesław Kaczanowicz, Elżbieta Korczyńska, Prof. Katerini Liampi, Prof. Adam Małkiewicz, Prof. Andrew Meadows, Prof. Mariusz Mielczarek, Dr Jiří Militký, Prof. Janusz A. Ostrowski, Prof. Maciej Salamon, Prof. Bernhard Weisser

Redakcja / Editorial Board:

Redaktor / Editor in Chief – Jarosław Bodzek
Zastępca redaktora / Associate Editor – Mateusz Woźniak
Sekretarze / Secretaries – Dorota Malarczyk, Anna Bochnak, Barbara Zając

Redaktor tematyczny / Theme Editor:

Peter van Alfen

Redaktor językowy / Linguistic Editor:

Peter van Alfen

Recenzenci / Reviewers:

Prof. Bartosz Awianowicz, Dr Hab. Katarzyna Balbuza, Dr Hab. Mateusz Bogucki, Prof. Kevin Butcher, Dr Witold Garbaczewski, Prof. Matthias Hardt, Dr Johan Van Heesch, Dr Wilhelm Hollstein, Prof. Stanley Ireland, Dr Krzysztof Jarzęcki, Dr Szymon Jellonek, Dr Adam Kędzierski, Prof. Koray Konuk, Dr Piotr Kotowicz, Prof. Marek Olbrycht, Prof. Michał Parczewski, Dr Evgeni Paunov, Dr Grzegorz Śnieżko, Prof. Michael Vickers, Dr Eliza Walczak, Dr Ulrich Werz, Dr Tomasz Więcek, Dr David Wigg-Wolf, Dr Michał Wojenka, Dr Hab. Marcin Wołoszyn

Redaktorzy prowadzący / Managing Editors:

Dorota Malarczyk, Anna Kowalczyk

Tłumaczenia / Translations:

Jarosław Bodzek, Karolina Kariat, Andrzej Leligdowicz, Nasim Luczaj, Borys Paszkiewicz, Anna Sosenko, Iwona Zych

Korekta / Proofreading:

Aedaan Shaw

Projekt graficzny i typografia / Graphic design and desk top publishing:

Luiza Berdak

Skład i lamanie / Typesetting and page layout:

Zofia Stawiska

Adres redakcji / Address of the Editorial Office:

Muzeum Narodowe w Krakowie
ul. Marszałka Józefa Piłsudskiego 12, 31-109 Kraków
tel. (+48) 12 433 58 50, e-mail: notae@mnk.pl
<http://mnk.pl/notae-numismaticae-zapiski-numizmatyczne-1>

Wyłącznie odpowiedzialność za przestrzeganie praw autorskich dotyczących materiału ilustracyjnego ponoszą autorzy tekstów.
Authors of the texts bear the sole responsibility for observing the copyright illustrations.

Wersją pierwotną *Notae Numismaticae – Zapiski Numizmatyczne* jest wersja elektroniczna.
The electronic edition of the *Notae Numismaticae – Zapiski Numizmatyczne* is treated as its original version.

© Muzeum Narodowe w Krakowie i Autorzy, 2021

ISSN 1426-5435

SPIS TREŚCI / CONTENTS

- 9 Od redakcji
10 From the Editors

ARTYKUŁY / ARTICLES

- SŁAWOMIR SPRAWSKI
13 *The Temenidae, Who Came Out of Argos. Literary Sources and Numismatic Evidence on the Macedonian Dynastic Traditions*
Temenidzi, którzy przybyli z Argos. Macedońskie tradycje dynastyczne w źródłach literackich i świadectwach numizmatycznych
- CATHARINE C. LORBER
43 *A Die Study of the Silver Staters (Didrachms) of Thessalian Larissa*
Studium powiązań stempli srebrnych staterów (didrachm) tesalskiej Larissy
- JAROSŁAW BODZEK
77 *The Sabakes' "Owl" from the Collection of the District Museum in Toruń and Some Notes on the Coinage of the Penultimate Achaemenid Satrap of Egypt*
„Sówka” Sabakesa ze zbiorów Muzeum Okręgowego w Toruniu i kilka uwag na temat mennictwa przedostatniego achemenidzkiego satrapy Egiptu
- ÖMER TATAR
97 *Two Rare Shield/Helmet Type Macedonian Regal Bronze Coins from the Collection of the Museum of Anatolian Civilizations in Ankara*
Dwie rzadkie królewskie monety macedońskie typu „tarcza/helm” z kolekcji Muzeum Anatolijskich Cywilizacji w Ankarze
- ANNA ANZORGE-POTRZEBOWSKA
107 *On the Search for *Damnatio Memoriae* on Ancient Roman Numismatic Artefacts. Research Assumptions*
O poszukiwaniach damnatio memoriae na starożytnych rzymskich numizmatach. Postulaty badawcze
- PIOTR JAWORSKI
125 *Reading the History of the Roman Fort in Apsaros (Autonomous Republic of Adjara, Georgia) from a Numismatic Perspective*
Odczytując historię rzymskiego fortu w Apsaros (Adżarska Republika Autonomiczna, Gruzja) z perspektywy numizmatycznej

- 143 PRZEMYSŁAW DULĘBA, ANDRZEJ ROMANOWSKI
New Finds of Roman Coins from the Przeworsk Culture Settlements
in the Nidzica and Szreniawa River Basins
*Nowe znaleziska monet rzymskich na osadach kultury przeworskiej w dorzeczu
Nidzicy i Szreniawy*
- 177 DAGMAR GROSSMANNOVÁ
Finds of Byzantine Coins in the Collection of the Moravian Museum.
A Contribution to the Completion of the Register of Byzantine Coins in Moravia
*Znaleziska monet bizantyńskich w kolekcji Morawskiego Muzeum Krajowego.
Przyczynek do uzupełnienia rejestru monet bizantyńskich na Morawach*
- 201 DOROTA MALARCZYK, ŁUKASZ MIECHOWICZ, SYLWIA WAJDA
Dirham Imitations and Glass Beads from the 10th Century Discovered
in an Early Medieval Building in Kłodnica, Municipality of Wilków, Lublin
Voivodeship
*Naśladownictwa dirhamów i szklane paciorki z X w. odkryte we wczesno-
średniowiecznym budynku w Kłodnicy, gm. Wilków, woj. lubelskie*
- 225 ANNA BOCHNAK
Drohiczyn-type Small Lead Seals with the Image of a Bird from the Collection
of the National Museum in Krakow. Old Ruthenian Sigillography Versus Early
Piast Numismatics
*Plomby typu drohiczyńskiego z wyobrażeniem ptaka w kolekcji Muzeum
Narodowego w Krakowie. Staroruska sfragistyka versus wczesnopiastowska
numizmatyka*
- 243 LILIA DERGACIOVA, IRINA STANKIEWICZ
Coin Hoard of Moldovan Copper Coins Found in the Belgorod Fortress
on the Dniester River (Ukraine)
*Skarb miedzianych monet moldawskich znaleziony na terenie twierdzy Białogród
nad Dniestrem (Ukraina)*
- 261 ELŻBIETA M. KŁOSIŃSKA, BORYS PASZKIEWICZ
A Coin Hoard from the 16th Century Found During Archaeological Excavations
at Perespa, and Its Context
*Zbiór monet z XVI w. znalezione podczas wykopalisk archeologicznych
w Perespie i jego kontekst*

RECENZJE / REVIEWS

- 301 JAROSŁAW BODZEK
HAIM GITLER, OREN TAL, *The Nablus 1968 Hoard. A Study of Monetary
Circulation in the Late Fourth and Early Third Centuries BCE. Southern Levant,*

with contribution of ARNOLD SPEAR and SYLVIA HURTER, DANA ASHKENAZI and ADIN STERN, *Numismatic Notes and Monographs* 171, The American Numismatic Society, New York 2019, 209 pages, 41 plates; ISBN 978-0-89722-360-7; ISSN 0078-2718

JAROSŁAW BODZEK

- 307 CATHARINE C. LORBER, *Coins of the Ptolemaic Empire. Part I: Ptolemy I through Ptolemy IV. Volume 1: Precious Metal, Volume 2: Bronze*, The American Numismatic Society, New York 2018, 625 and 205 pages, 76 and 46 plates; ISBN 978-0-89722-332-4

BARBARA ZAJĄC

- 312 RENATA CIOŁEK, ROKSANA CHOWANIEC (eds.), *Aleksandria. Studies on Items, Ideas and History Dedicated to Professor Aleksander Bursche on the Occasion of his 65th Birthday*, Harrassowitz Verlag, Wiesbaden 2021, 446 pages; ISBN 978-3-447-11554-4; DOI: 10.2307/j.ctv1h9djth

ALESSANDRA MAGNI

- 322 PAWEŁ GOŁYŻNIAK, *Engraved Gems and Propaganda in the Roman Republic and under Augustus*, Archaeopress Roman Archaeology 65, Archaeopress, Oxford 2020, 618 pages, 1015 figures; ISBN 978-1-78969-539-7

KATARZYNA BALBUZA

- 328 RICHARD ANTHONY ABDY and PETER FRANZ MITTAG, *The Roman Imperial Coinage, Volume II, Part 3: From AD 117–138, Hadrian*, Spink, London 2019, 332 pages, 218 plates, indices; ISBN 978-1-912667-18-5

BARBARA ZAJĄC

- 333 MATEUSZ BOGUCKI, ARKADIUSZ DYMOWSKI, GRZEGORZ ŚNIEŻKO (eds.) *Slivers of Antiquity. The Use of Ancient Coins in Central, Eastern and Northern Europe in the Medieval and Modern Periods / Okruchy starożytności. Użytkowanie monet antycznych w Europie Środkowej, Wschodniej i Północnej w średniowieczu i okresie nowożytnym*, Wydawnictwo Uniwersytetu Warszawskiego, Warszawa 2020, 444 pages, 1 map; ISBN 978-83-235-4697-9; DOI: 10.31338/uw.9788323547051

KRONIKA / CHRONICLE

MATEUSZ WOŹNIAK

- 341 Kronika Gabinetu Numizmatycznego Muzeum Narodowego w Krakowie (2020)
345 The Chronicle of the Numismatic Cabinet of the National Museum
in Krakow (2020)

CATHARINE C. LORBER
Independent Researcher

A Die Study of the Silver Staters (Didrachms) of Thessalian Larissa¹

ABSTRACT: The staters (didrachms) of Larissa were struck from 15 obverse dies and are differentiated by typology and legend configuration into three groups. Type I, known from just two specimens, features a crouching horse reverse. Type II depicts a trotting stallion and comprises two sequences – Series A and B. Die linkage shows that most of Series A was struck using two to four anvils concurrently to speed production. The entire coinage of staters was minted during a short period of time in the mid-4th century BC. It is argued that Series A represents cavalry pay for the joint Macedonian and Thessalian army commanded by Philip II in the Thessalian campaign of c. 352 that culminated in the battle of the Crocus Field, and Series B represents cavalry pay for his subsequent operations in Thessaly.

KEY WORDS: Larissa, Thessaly, staters, didrachms, die study

ABSTRAKT: *Studium powiązań stempli srebrnych staterów (didrachm) tesałskiej Larissy*

Statory (didrachmy) Larissy bite 15 stemplami awersu podzielono na podstawie typologii i konfiguracji legend na trzy grupy. Typ I, znany z 2 egzemplarzy, charakteryzuje wizerunek przykucniętego konia na rewersie. Typ II nosi przedstawienie ogiera w kłusie i składa się z dwóch sekwencji – serii A i B. Powiązania stempli wskazują, że większość serii A była bita przy użyciu od 2 do 4 stanowisk jednocześnie, aby przyspieszyć całą produkcję staterów, która odbywała się w krótkim okresie

¹ This die study of the staters (didrachms) of Larissa expands and updates an earlier die study that appeared on the website “The Facing Head Coinage of Thessalian Larissa,” developed by Charles Shahar and the present author. Due to changes in web technology, that site is no longer operational and cannot be rehabilitated. In the present study, the obverse dies have been renumbered and in some cases reordered, and each reverse die received a unique number. For these reasons, citations of the earlier Lorber-Shahar die study in commercial contexts will not conform to the current identification of dies or specimens.

około połowy IV w. p.n.e. Uważa się, że seria A miała stanowić wynagrodzenie dla kawalerii połączonej macedońsko-tesalskiej armii podczas tesalskiej kampanii około 352 r., która zakończyła się bitwą na Krokusowym Polu, a seria B wynagrodzenie dla kawalerii w trakcie kolejnych operacji w Tesalii.

SŁOWA KLUCZOWE: Larissa, Tesalia, statery, didrachmy, powiązania stempli

INTRODUCTION: HISTORY OF SCHOLARSHIP

The city of Larissa in northern Thessaly was the earliest and most productive mint of Thessaly, issuing silver coinage from the early 5th century BC until the mid-4th century and perhaps even later.² The survey of Fritz Herrmann, now nearly a century old, still provides a useful overview for the earlier coinage of Larissa.³ But Herrmann's reliance on style as a chronological guide led him to assume that the facing head coinage – the largest component of Larissa's output – evolved from the “most beautiful” depictions of the nymph Larissa resembling their presumed model, the facing head of Arethusa on Syracusan tetradrachms, to renderings that differed ever more from this prototype.⁴ Herrmann dated the earliest facing head coins of Larissa, including the didrachms, after a victory over the rival city of Pharsalus in 395, and placed the end of Larissa's silver coinage in 344/343, when Philip of Macedon reformed the Thessalian system of governance and imposed direct Macedonian rule.⁵

In 1961, at the International Numismatic Congress in Rome, Alfred R. Bellinger presented a hoard of the mid-3rd century (*IGCH* 168) whose contents implied that the Larissaeon facing head drachms of “fine style” (Herrmann's Group VII, Series A-1) were later than assumed by Herrmann and were probably minted during the Macedonian hegemony through a special authorization of Philip II.⁶ The implications of this hoard were more widely advertised by Colin M. Kraay and later by Thomas R. Martin. Kraay concluded that the “massive” facing head drachm issues of Larissa (i.e., Herrmann's Group VI, Series A-1) should be dated after 354 and constituted the currency of the early Macedonian period in Thessaly, and that the didrachms were likely to be contemporary.⁷ He ended his discussion of Larissaeon coinage by calling for a fresh analysis of the whole output and a new classification of the facing head series.⁸

² All dates in this study are BC. The end of Larissa's silver coinage has been dated c. 320 by MARTIN 1982; IDEM 1983: 32.

³ HERRMANN 1925: Groups I–IV.

⁴ *Ibidem*: Group VII, 41–63.

⁵ *Ibidem*: 49–50.

⁶ BELLINGER 1965.

⁷ KRAAY 1976: 117, 119.

⁸ *Ibidem*: 118–119.

Martin emphasized the uniformity of the Larissaeon facing head drachms in *IGCH* 168, which must be the latest silver coinage of Larissa, and the implication that more diverse types were earlier, contrary to the arrangement of Herrmann.⁹ Martin associated the didrachms with “later” facing head drachms but – unlike Kraay – dated them earlier than the middle of the 4th century, based on estimates of the wear of hoard specimens.¹⁰ A review of the hoards known by c. 1980 yielded the observation that those that contained coins of Larissa also included Macedonian royal coinage, and that the latter gradually replaced Larissaeon coinage in Thessalian circulation.¹¹ Martin also made the interesting point that Thessaly had no silver mines of its own and Thessalian mint cities were obliged to procure bullion from external sources, one of which was Macedon.¹²

Beginning in the late 1980s, the present author had access to a number of new Thessalian silver hoards. Only two of them have been published in full.¹³ But their overlapping contents established a reliable relative chronology for the various Larissaeon types, confirming Herrmann’s arrangement of the early groups and aligning more approximately with Martin’s ideas about the sequence of facing head drachms.¹⁴ The mass of material allowed for a far more detailed classification of the facing head coinage than Herrmann’s eighteen series. The facing head drachms are now divided into three broad classes based on hoard contexts: early, middle, and late, with the late drachms subdivided into four phases.¹⁵ Fortunately, these broad divisions correlate with differences of style.

CLASSIFICATION AND DIE STUDY

The stater coinage of Larissa exhibits a tripartite division based on typology and legend configuration. Its earliest two staters share a crouching horse reverse, but are distinguished by different legend configurations. On one, the ethnic begins in the exergue, Λ API, and continues above the back of the horse, Σ AIWN; on the other the ethnic begins above the horse, Λ API Σ , and continues in the exergue, AIWN. There follow two series of staters with the standard reverse type of a trotting stallion. Series A comprises staters with the reverse legend broken into three parts, usually Λ API above the stallion’s back, Σ reading downward before his chest, and AIWN in the exergue, but occasionally Λ AP above, $\text{I}\Sigma$ before, and AIWN in the

⁹ MARTIN 1983: 11, 17–27.

¹⁰ *Ibidem*: 27, 29.

¹¹ *Ibidem*: 3–4; MARTIN 1985: 47–50.

¹² *Ibidem*: 153–154

¹³ LORBER 2000; EADEM 2009.

¹⁴ EADEM 2008.

¹⁵ EADEM 2000.

exergue. Series B comprises staters with the reverse legend broken into only two parts, Λ API above and Σ AIWN in the exergue.

The typological distinction between Series A and Series B correlates with other, more significant differences. The obverse dies of Series A are linked by multiple sharing of several reverse dies: one reverse die (R8) is paired with five obverses, and three reverse dies (R5, R7, R10) are paired with three obverses each. The patterns of linkage suggest that two or more anvils were deployed simultaneously for the production of most of Series A (see Pl. 1, Chart 1). In contrast, the obverse dies of Series B exhibit only two reverse die links and the pattern is consistent with sequential use of the dies on a single anvil (see Pl. 2, Chart 2).

The survival rates of the two series are also very different, even though the die counts are comparable. For Series A the study records six obverse dies, thirteen or fourteen reverse dies, and 164 specimens, for a characteristic ratio of 27.33. For Series B the study records seven obverse dies, thirteen reverse dies, and 51 specimens, for a characteristic ratio of 7.29. The characteristic ratio for the entire sample of 217 Larissa staters is a robust 14.47. The two staters with the crouching horse reverse are the only obverse die singletons in the sample.

The priority of the two staters with the crouching horse reverse is assumed because of their two legend configurations. In the well-documented drachm coinage of Larissa, these legend configurations alternate in the first phase of the late drachm coinage (Phase L-I), after which the configuration with Σ AIWN above the horse's back and Λ API in the exergue disappears and the ethnic consistently begins above the horse's back.¹⁶ On this basis the stater with Σ AIWN/ Λ API (O1/R1) can be considered contemporary with Phase L-I of the drachm coinage, and a similar context is likely for the second stater with crouching horse reverse (O2/R2).

In addition to their contrasting legends, the two staters with the crouching horse reverse also offer stylistic variants of the head of the nymph Larissa. On O1, the hair to the right of Larissa's face is massed in high relief above the ear; below this mass a few more delicate locks wave downward. On O2, the hair on the right is patterned more evenly, with no marked differentiation between the locks waving horizontally and the equally luxuriant locks waving downward. The arrangement of the hair on die O1 can also be observed on four dies of Series A (O3–O6). The pattern on O2 recurs on two additional dies of Series A (O7 and O8) and on most dies of Series B (O9–O13). The remaining two dies of Series B take a different approach: the tight waves of the nymph's hair are softened and, especially on O15, the locks of hair form an aureole radiating around the face.

¹⁶ LORBER 2015: 118, and see 119 for the hoards which contributed to the definition of Phase L-I.

Unfortunately, hoard evidence does not establish whether Series A was prior to Series B, or whether the contrary was the case. The large Thessaly hoard of 1989 (*CHIX*, 121) contained 44 staters of Series A and B, and all obverse dies were represented except for O11. The five staters in the Thessaly hoard of c. 1996 (*CH IX*, 87) all belonged to Series A.¹⁷ This might be taken as evidence that Series B had not yet begun when the hoard closed. On the other hand, the higher survival rate of Series A might also account for its representation in the hoard in the absence of Series B.

One goal of the present die study was to find some evidence for the sequence of the individual obverse dies. The five staters in the Thessaly hoard of c. 1996 (*CH IX*, 87) came from just two obverse dies (O4 and O7), and this suggested that they might be the first two dies of Series A. However, these two dies show different treatments of the hair to the right of Larissa's face. More significantly, they share only one reverse die (R8), whereas O4 shares *all four* of its reverse dies with O5, making it almost certain that they were employed simultaneously on two anvils. It then becomes difficult to explain why O5 is not represented in *CH IX*, 87, especially since it is far better represented in the overall corpus than O4, by 44 examples as compared with 14 examples. Nevertheless, it is evident that the two obverse dies represented in *CH IX*, 87 cannot be the two earliest dies of Series A.

The state of reverse dies paired with several different obverse dies might reveal the order in which the obverse dies were used. But the near-certainty that part of Series A was struck from two anvils (if not more) creates risk in using this type of evidence, because the reverse dies were probably used concurrently with different obverse dies, and random survival could have created misleading patterns. But one such pattern has the appearance of significance. Die O3 is paired with R5 and this reverse die in two instances is in earlier state than when paired with O4 and O5.¹⁸ O3 has no other reverse die links to the other obverse dies of Series A, and it is the only obverse die of Series A that does not have at least two reverse dies linking it to the other obverse dies (see Pl. 1, Fig. 1). This seems to justify its position at the beginning of Series A. The die links imply that Series A began with a single anvil. But after O3 was retired, two new dies (O4 and O5) were deployed simultaneously on a pair of anvils. Eventually they were replaced by other new dies, O6, O7, and O8. O8 shares two reverse dies with O7, one of which is also shared by O4, O5, and O6; but O8 is also paired with three other reverse dies unique to itself. It thus appears that near the end of Series A production reverted to a single anvil. Alternate interpretations are possible, and it could be that three or even four obverse dies were employed simultaneously.

¹⁷ EADEM 2000: nos. 64–68.

¹⁸ The state of R5 is judged from the erosion of the exergual line above the letter I, and also from a short vertical flaw above the exergual line, above the letter N, observed only when the die is paired with O4 and O5.

ABSOLUTE CHRONOLOGY AND HISTORICAL INTERPRETATION

As noted above, one of the earliest staters with the crouching horse reverse shares its legend configuration with the earliest phase of the late Larissaeon drachm coinage (Phase L-I). Phase L-I, defined from overlapping hoards, is the last phase of the drachm coinage to exhibit variations in the legend configuration; subsequently the legend was standardized and invariably appears as $\Lambda\text{API}\Sigma$ above the horse and AIWN in the exergue. The Phase L-I drachm coinage has been classified into ten series and two unnumbered groups, and 17 head types have been identified.¹⁹ Production of Phase L-I was discontinuous and apparently somewhat protracted.²⁰ Phase L-I is tentatively dated before the Third Sacred War (356–346), perhaps overlapping its beginning but ending before the election of Philip II as head of the Thessalian Confederacy.²¹ A *terminus ante quem* for Phase L-I is provided by the Kalamaria hoard of 1963 (*IGCH* 385), a Macedonian hoard of Philip II tetradrachms which included at least two Phase L-I drachms of Larissa.²² Georges Le Rider dated the closure of this hoard shortly before the death of Philip II, but Martin Price argued persuasively for an earlier date c. 348.²³ In either case, the presence of Phase L-I drachms in a Macedonian hoard is a clue that they may have been issued (wholly or in part) at the time of a Macedonian intervention in Thessaly.

The two Larissaeon staters with the crouching horse reverse do not share the obverse style and iconographic details of any particular Phase L-I drachms. They exhibit a higher level of artistry than the drachms and are more closely related stylistically to the trotting stallion staters of Series A and B. These observations suggest that the dies for a new and exceptional denomination were created with special care – and also that we can't assume too much time elapsed between the production of the first stater dies and those used in the introduction of Series A.

The heads of the nymph Larissa on the obverses of the Series A and B staters are related stylistically to the heads on the obverses of drachms of Phase L-III (the mass coinage). A Phase L-III drachm found its way into the Thessalonica region hoard of c. 1965 (*CHI*, 37).²⁴ This Macedonian hoard contained the same Philip II tetradrachm issues as the Kalamaria hoard of 1963 and it thus establishes a *terminus ante quem* for the Phase L-III drachms of either 336 or, more probably, c. 348. It has already been suggested that the Phase L-II and L-III drachms may represent the

¹⁹ LORBER 2015.

²⁰ *Ibidem*: 124.

²¹ *Ibidem*.

²² LORBER 2000: 9.

²³ LE RIDER 1977: 286–289; PRICE 1979: 236–237. As noted by LORBER 2000: 9, note 11, “Price grounded his arguments on a number of hoards, whereas Le Rider’s date followed from his overall arrangement on Philip’s silver coinage, which was based on stylistic analysis.”

²⁴ LE RIDER 1977: hoard 5, Pl. 50, no. 24.

coinage of the period after Philip II was elected archon of the Thessalians.²⁵ The Thessalonica region hoard does not provide objective support for such a precise date. The proposal rests on an unstated argument from historical probability, i.e., that a vast increase in the volume of coin production should correlate with a period of warfare.

We pause here to review the main outlines of the Thessalian involvement of Philip II of Macedon. In 358 or early 357 the Aleuads of Larissa appealed to him for help against their enemy Pherae, and Philip apparently provided troops.²⁶ A renewed appeal in 354 or 353 caused Philip to march into Thessaly in person.²⁷ After early successes he suffered two costly defeats at the hands of Pherae's ally Onomarchus, commander of the Phocian army, and Philip withdrew to Macedonia.²⁸ In the next campaign season Philip returned to Thessaly with a new army to resume his war on Pherae, Onomarchus having turned his attention to Boeotia.²⁹ The first action of Philip's campaign was a siege of Pagasae, the port of Pherae.³⁰ Lycophron, tyrant of Pherae, summoned his Phocian allies and meanwhile Philip persuaded the Thessalians to place their troops under his command, swelling his forces to 20,000 infantry and 3,000 cavalry.³¹ He confronted Onomarchus at the battle of the Crocus Field and won a decisive victory attributed largely to the superiority of the Thessalian cavalry.³² Bereft of allies, Lycophron surrendered Pherae to Philip and went into exile with the Phocians.³³ After the victory on the Crocus Field, if not already before, Philip was elected archon of the Thessalian Confederacy.³⁴ Philip now turned to consolidating his control of Thessaly. Because Pagasae was not a member of the Thessalian *koinon*, he claimed it as his own and installed a garrison.³⁵ He also seized and garrisoned the cities of Perrhaebia and Magnesia, among others.³⁶ His destruction of Pharcadon and perhaps also of Tricca may belong to the events of this campaign.³⁷ Philip withdrew to Macedonia probably in mid-summer, for by November he was operating on the Thracian coast near Perinthus.³⁸

²⁵ LORBER 2015: 124.

²⁶ GRIFFITH 1970: 67–69, 79; ELLIS 1976: 61, 74.

²⁷ Diod. XVI.35.1; ELLIS 1976: 77–78; BUCKLER 1989: 63.

²⁸ Diod. XVI.35.1–3.

²⁹ Diod. XVI.35.3.

³⁰ ELLIS 1976: 82.

³¹ Diod. XVI.35.4.

³² Diod. XVI.35.5.

³³ Diod. XVI.36.3; ELLIS 1976: 83.

³⁴ *Ibidem*: 83; BUCKLER 1989: 78.

³⁵ IDEM 1989: 79.

³⁶ ELLIS 1976: 86; BUCKLER 1989: 80.

³⁷ Polyæn. *Strat.* IV.2.18–19; ELLIS 1976: 86.

³⁸ *Ibidem*: 86–87.

Against this background we can suggest that the Phase L-I drachms might have been in production during Philip's first involvement in Thessaly (358 or early 357) but more likely they should be connected with his first actual invasion (354 or 353), and this is also the probable context of the first Larissaeon staters with the crouching horse reverse.

We can suggest with a bit more confidence that the Series A and Series B Larissaeon staters should be dated to the period when Philip II commanded the combined forces of Macedon and the Thessalian Confederacy, which roughly coincides with his election as archon of the Thessalian *koinon*.³⁹ The substitution of a trotting, bridled stallion for the traditional Larissaeon horse (sometimes explicitly a mare) seems to reflect the masculine typology of Philip's tetradrachms, though the absence of a rider is enigmatic. The combination of the well-established female facing head of Larissa with the stallion of Philip's tetradrachms aptly symbolizes his command of the combined Thessalian and Macedonian armies.

The apparently intense production of Series A would be consistent with a new coinage introduced during a wartime crisis, whereas the somewhat more leisurely production of Series B would seem to correspond to a slightly different historical context. In addition to the use of multiple anvils for Series A, the continued use of die O7 despite the development of disfiguring flaws is a further indication of the urgency of the production. The evidence for rapid production of Series A inspires the hypothesis that the Series A staters and some part of the contemporary Phase L-III drachms represent pay for the large army of more than 20,000 infantry and 3,000 cavalry which Philip commanded in Thessaly in 352, the combined forces of Macedon and the Thessalian Confederacy with which he won his decisive victory over Onomarchos and the Phocians in the battle of the Crocus Field (probably late spring or early summer). The contemporary production of two different coin denominations, the traditional Larissaeon drachm and the almost unprecedented stater, must reflect different levels of pay for different categories of soldiers. Let us assume that infantrymen received one drachma per day and cavalry two drachms per day, a rate of pay that has previously been postulated for the army of 3rd-century Ptolemaic Egypt.⁴⁰ Since the stater of Larissa was equivalent to a didrachm, it would represent a day's pay for a cavalryman. To estimate the total production of Series A, we can dispense with estimating the original number of dies; the high n/d ratio of 27.33 ensures that the number of observed dies is a reliable figure. Assuming

³⁹ KRAAY 1976: 117–118.

⁴⁰ FISCHER-BOVET 2014: 73–74.

an average output per obverse die of 20,000 coins,⁴¹ the six obverse dies of Series A should have yielded 120,000 didrachms, a month's pay for 4,000 cavalry, 40 days' pay for 3,000 cavalry, or two months' pay for 2,000 cavalry. The middle figure – 40 days' pay for 3,000 cavalry – matches the reported size of the cavalry forces at the battle of the Crocus Field and 40 days is a plausible estimate for the time that elapsed between the mustering of these forces and the battle itself, time during which Philip besieged Pagasae and the Phocian army under Onomarchos marched north.

The average lifetime of a tetradrachm obverse die is believed to be about a week.⁴² On the assumption of a similar lifetime for stater dies, Series A could have been minted in about four weeks if two anvils were deployed during the use of dies O3 through O6, or in as little as three weeks if four anvils were used in parallel for this phase of production. These figures are compatible with a pay period of 40 days, deemed plausible in the preceding paragraph.

The Series B staters can be associated with Philip's subsequent operations in Thessaly, i.e., the consolidation of his control through the garrisoning and fortification of Magnesia and Perrhaebia, and perhaps also his punishment of Pharcadon and Tricca for their collaboration with the Phocians.⁴³ Because Series B has a lower characteristic ratio than Series A, in this case it is appropriate to consider statistical estimates of the original number of obverse dies.⁴⁴ Giles F. Carter's simplified method⁴⁵ yields an estimate of 7 original obverse dies, identical to the number of observed obverse dies. The 2006 formula of Warren W. Esty⁴⁶ yields an estimate of 7 original dies, with a range of 7 to 9 dies at the 95% confidence interval. Esty's 2011 geometrical formula⁴⁷ yields an estimate of 8 original dies, with a range of 7 to 10 dies at the 95% confidence interval. Assuming average productivity of 20,000 coins per obverse die, these 7 to 10 dies imply a total volume for Series B of 140,000, 160,000, 180,000, or 200,000 staters and as many days' pay for cavalrymen. If the size of the cavalry cohort remained unchanged since the battle of the Crocus Field, at 3,000 men, the lowest figure would have paid them for 47 days. The larger estimated volumes could have paid the same force for 53, 60, or 67 days. The lowest estimate is the most reliable, but all of the estimates

⁴¹ DE CALLATAÿ 2011: 9, 12–13, 23. De Callataÿ's estimate is for tetradrachm dies. It should be applicable to the Larissaeon staters despite the fact that each represented only two drachms, because the weight of the Aeginetic drachm was relatively high. The Larissaeon stater weighed 30% less than an Attic tetradrachm but only 16–17% less than Philip's Macedonian tetradrachms (for whose weight standard see LE RIDER 1977: 354–355).

⁴² DE CALLATAÿ 1995: 300–301; IDEM 1997: 46–47.

⁴³ ELLIS 1976: 85–86; MARTIN 1985: 104.

⁴⁴ The calculations were performed using the Die Count software developed by Daniel Wolf.

⁴⁵ CARTER 1983.

⁴⁶ ESTY 2006.

⁴⁷ IDEM 2011.

imply a relatively short campaign, consistent with the assumption of J.R. Ellis that Philip departed from Thessaly around midsummer.⁴⁸ The estimated one-week lifetime of an obverse die implies that Series B, with seven obverse dies deployed in succession, required a minimum of seven weeks for its production. Once again this figure is consistent with the pay periods inferred from estimates of productivity.

A die study of the Phase L-III drachms has long been in preparation, but is still not final. It identifies 69 obverse dies, plus another 11 for L-III varieties with a plant beneath the mare, assumed to be among the latest. These die counts should be regarded as a very rough estimate only, both because they may not be entirely reliable in and of themselves, and because most samples of coinage yield statistical estimates of the original number of dies that exceed the number of observed dies. With these caveats, it can be noted that the assumption of average die productivity of 20,000⁴⁹ means that each die yielded a day's pay for 20,000 infantry. Thus the first 40 dies might account for 40 days' pay for the infantry that fought at the Crocus Field, corresponding to the length of the mobilization and campaign inferred from the quantitative analysis of the Series A staters. This leaves half of the drachm dies still unused and their output could have paid the infantry that fought alongside the cavalry paid with Series B staters. The proportions seem plausible, because Series A and B are almost equal in size, involving six and seven obverse dies respectively.

CATALOGUE OF LARISSA STATERS (DIDRACHMS)

Type I. Crouching horse reverse

The reverse legend has two configurations. On die R1 the ethnic begins in the exergue and is completed above the horse's back. On die R2 it begins above the horse's back and is completed in the exergue.

O1. Head of nymph Larissa three quarters l., wearing ampyx, pendant earring, and wire necklace

R1. ΣAIWN above, ΛAPI in ex., mare crouching r., about to roll

a.* 11.50 g Museum of Fine Arts, Boston, 896. HERRMANN, *ZfN* XXXV, Group VII, Series I-A, Rs. II, Pl. v, 3. Rothschild sale, Sotheby, 28 May 1900, lot 253. Ex Ashburnham (Pl. 3, Fig. 1)

⁴⁸ ELLIS 1976: 87.

⁴⁹ FAUCHER 2011: 120 suggested that the average output of dies for small silver denominations was lower than that for tetradrachms, but it is not clear whether this suggestion applies to drachms, or by how much the assumed output should be lowered.

O2. Head of nymph Larissa three quarters l., wearing ampyx, pendant earring, and wire necklace

R2. ΛAPIΣ above, AIWN in ex., mare crouching r., about to roll

a.* 12.06 g Nomos 4, 10 May 2011, lot 1158 (Pl. 3, Fig. 2)

Type II. Trotting stallion reverse

The obverse type throughout is head of nymph Larissa three quarters l., wearing ampyx, pendant earring, and wire necklace. Only distinguishing characteristics of the dies are noted below.

The reverse legend assumes three configurations: (1) ΛAP above, ΙΣ reading downward on r., AIWN in ex (known on a single reverse die); (2) ΛAPI above, Σ reading downward on r., AIWN in ex.; and (3) ΛAPI above, ΣAIWN in ex. The first two variants are obverse die linked and are here designated Series A. The third seems to represent a separate series with different patterns of die use (Series B).

Series A

O3. Slight flaw beginning at 8:00, extending from Larissa's hair to dotted border. Other flaws appear at inner corner of proper l. eye, at corner of mouth, and along lower edge of ampyx

R3. ΛAPI above, Σ reading downward on r., AIWN in ex., bridled stallion trotting r. Small round flaw between letter I and stallion's neck. Flaw between loop of reins and withers

a.* 12.18 g 10 Peus 401, 3 November 2010, lot 307. Triton VIII, 11 January 2005, lot 282. Very early state of obverse die, with flaw barely in evidence (Pl. 3, Fig. 3)

b. 12.24 g Künker 124, 17 March 2007, lot 7929. NFA XXXIII, 3 May 1994, lot 157a. NFA Inv. No. 3104. Ex unknown findspot, 1989 (*CHIX*, 121)

c. 11.59 g NAC Auction A, 27–28 February 1991, lot 1385. Hess-Leu, 12 April 1962, lot 199

d. 11.67 g Künker 174, 27 September 2010, lot 251. CNG 84, 5 May 2010, lot 344

e. 12.29 g CGB Mail Bid Sale 47, 19 March 2011, lot 73

Coins apparently from the die combination O3/R3 appeared on the market beginning in 2011. Though the obverse is very similar to O3, some details of the hair differ, and more conspicuously the truncation of the bust is separated from the dotted border and forms a parallel arc, whereas the truncation of O3 merges with the dotted border.

a.* 12.35 g Gorny & Mosch 203, 5 March 2012, lot 164. Gorny & Mosch 199, 10 October 2011, lot 239. Helios 6, 9 March 2011, lot 54 (Pl. 3, Fig. 4)

b. 12.14 g Helios 6, 9 March 2011, lot 55

c. 11.96 g Gorny & Mosch 236, 7 March 2016, lot 174

- R4. Λ API above, Σ reading downward on r., AIWN in ex., bridled stallion trotting r. Horizontal flaw extending back from loop of reins
- a. 12.27 g NFA Inv. No. 3107. Ex unknown findspot, 1989 (*CH IX*, 121)
- b. 12.07 g NFA Inv. No. 1338. Ex unknown findspot, 1989 (*CH IX*, 121)
- c. 11.98 g CNG XXX, 11 June 1994, lot 115. Egger XLI, 1912, lot 449
- d. 11.70 g *SNG Sweden* 1176
- e. 12.10 g Monnaies d'Antan 23, 19 May 2018, lot 519 Vinchon, 7 November 2001, lot 54. Hess 247, 29 June 1978, lot 109
- f. 12.31 g Hess 249, 13 November 1979, lot 156
- g. 12.10 g NFA VIII, 6 June 1980, lot 133
- h. 12.24 g 10:30 Peus 398, 28 April 2009, lot 165. Peus 395, 7 May 2008, lot 83. Peus 392, 4 May 2007, lot 4289. Gemini III, 9 January 2007, lot 125. Freeman & Sear Online Store, item no. G5312-38. CNG 67, 22 September 2004, lot 516. Leu 22, 8–9 May 1979, lot 87
- i. 12.25 g Sternberg XVIII, lot 87
- j. 11.71 g 4 Lanz 125, 28 November 2005, lot 274. Giessener Münzhandlung 42, 11 October 1988, lot 218
- k. 12.26 g Giessener Münzhandlung 44, 3 April 1989, lot 276
- l.* 12.28 g MDC 5, 14 November 2019, lot 33. Vinchon, 5 May 2019, lot 101. Sotheby, 19 June 1990 (Hunt), lot 93 (Pl. 3, Fig. 5)
- m. 12.20 g 4 Gorny & Mosch 108, 3 April 2001, lot 1188. Lanz 97, 22 May 2000, lot 223
- n. Bibliothèque nationale de France, Inv. No. 286
- o. 11.93 g CNG Electronic Auction 209, 22 April 2009, lot 99
- p. 12.21 g Triton XV, 3 January 2012, lot 311
- q. 12.19 g Stacks Bowers Ponterio, 16 August 2018, lot 20055
- R5. Λ API above, Σ reading downward on r., AIWN in ex., bridled stallion trotting r. Same reverse die also paired with O4 and O5
- a.* 12.08 g Künker 158, 28 September 2009, lot 198. Triton XII, 6 January 2009, lot 221. Hirsch 256, 5 May 2008, lot 90. Early state of reverse die (Pl. 3, Fig. 6)
- b. 11.73 g CNG 54, 14 June 2000, lot 559
- c. 10.8 g Stack's Coin Galleries, 18 December 2007, lot 122
- d. 12.20 g Heritage 3061, 7 January 2018, lot 29096. Gorny & Mosch 240, 10 October 2016, lot 645. NAC 1, 1989, lot 156. The flaw on the forehead below the ampyx is absent from this specimen and flaws around the eyes are minimal, probably a result of modern tooling. Early state of reverse die

- e. 11.96 g 12 Triton XXII, 8 January 2019, lot 203. Roma XIII, 23 March 2017, lot 116. NAC 48, 21 October 2008, lot 74. LHS 100, 24 April 2007, 223. Lanz 52, 14 May 1990, lot 151. Late state of reverse die
- f.* 12.16 g Lanz 155, 10 December 2012, lot 122. Late state of reverse die (Pl. 3, Fig. 7)
- g. 12.25 g New York Sale XLV, 8 January 2019, lot 35. Late state of reverse die
- h. n.w. Impacto Coleccionables on VCoins.

O3'. Die reengraved to repair flaws in eye and mouth. Flaw in hair at 8:00 more developed, as is flaw beneath lower edge of ampyx. Locks of hair generally rather eroded

R5. Λ API above, Σ reading downward on r., AIWN in ex., bridled stallion trotting r. Same reverse die also paired with O4 and O5

- a. 12.15 g NFA Inv. No. 3121. Ex unknown findspot, 1989 (*CH IX*, 121)
- b. 12.12 g NFA Inv. No. 3087. Ex unknown findspot, 1989 (*CH IX*, 121)
- c. 12.21 g NFA Inv. No. 3103. Ex unknown findspot, 1989 (*CH IX*, 121)
- d. 12.24 g Gorny & Mosch 190, 11 October 2010, lot 190
- e. 12.08 g BOUTIN, *Pozzi Collection*, 2772. Pozzi sale 1220. Late state of reverse die
- f. 12.08 g 12 American Numismatic Society, Inv. No. 1967.46.13. *SNG Berry* 541. BERRY, *Numismatic Biography*, 451. Late state of reverse die
- g. 12.36 g MMAG 72, 6 October 1987, lot 582. Late state of reverse die
- h. 12.05 g Hirsch 159, 21 September 1988, lot 228. Late state of reverse die
- i. 12.23 g Tkalec & Rauch, 25–26 April 1989, lot 90. Late state of reverse die
- j. 12.18 g Noble 120, 2 April 2019, lot 3031. Gemini IV, 8 January 2008, lot 109. Freeman & Sear Online Store item G8632. Late state of reverse die
- k. 12.18 g Helios 7, 12 December 2011, lot 49. Late state of reverse die

O4. Small horizontal flaw at 3:00, extending from hair to dotted border. It develops further, extending past the border, when O4 is paired with R7. The die may deteriorate further when used with R8 (specimen b shows a large round protuberance in the area of the former flaw)

R6. Λ AP above, $\text{I}\Sigma$ reading downward on r., AIWN in ex., bridled stallion trotting r. Small horizontal flaw between loop of reins and withers. Same reverse die also paired with O5

- a.* 12.08 g Triton XXIII, 14 January 2020, lot 238. NFA XXVI, 14 August 1991, lot 69. NFA Inv. No. 3130. Ex unknown findspot, 1989 (*CH IX*, 121) (Pl. 3, Fig. 8)

R5. Λ API above, Σ reading downward on r., AIWN in ex., bridled stallion trotting r. Pelletlike flaw(?) between stallion's chest and letter Σ . Another pelletlike flaw beneath raised foreleg; three pelletlike flaws under belly; soft flaw connecting hind legs. In ex., letter A has slanting crossbar through which fine flaw passes; letter I blends with ex. line, causing thickening. Same reverse die also paired with O3 and O5

- a. 12.31 g Goldberg 55, 29 October 2009, lot 44. Goldberg 53, 24 May 2009, lot 1653. Goldberg 48, 14 September 2008, lot 1890. Goldberg 47, 25 May 2008, lot 1251. NFA Summer 1993 Buy or Bid Sale, lot 181. NFA Inv. No. 3106. Ex unknown findspot, 1989 (*CH IX*, 121)
- b.* 12.29 g Triton XXIII, 14 January 2020, lot 239. NAC 106, 9 May 2018, lot 1190 (Pl. 3, Fig. 9)
- R7. Λ API above, Σ reading downward on r., AIWN in ex., bridled stallion trotting r. Oblique flaw extending downward and to r. from letter P, visible on some but not all specimens. Same reverse die also paired with O5 and O6
- a. 12.25 g 5 NAC 116, 1 October 2019, lot 105. Triton VII, 12 January 2004, lot 187. *SNR* 79 (2000), 67. Ex Thessaly hoard, c. 1996 (*CH IX*, 87). Obverse die in early state, with flaw not in evidence; also early state of reverse die, without flaw
- b. 12.13 g Giessener Münzhandlung 40, 7 April 1988, lot 157
- c. 12.9 g Nilus Coins on VCoins
- d. 12.10 g Künker 104, 27 September 2005, lot 181. Reverse: flaw just beginning
- e. 12.13 g NFA Inv. No. 3091. Ex unknown findspot, 1989 (*CH IX*, 121)
- f. 12.23 g NFA Inv. No. 3117. Ex unknown findspot, 1989 (*CH IX*, 121). Reverse flaw in evidence
- g. 12.16 g 11 *SNR* 79 (2000), 68. Ex Thessaly hoard, c. 1996 (*CH IX*, 87). Additional small flaw on reverse die, beneath stallion's belly
- h.* 12.27 g Gorny & Mosch 228, 9 March 2015, lot 86. Triton XV, 3 January 2012, lot 308 (Pl. 3, Fig. 10)
- i. 11.82 g cgb e-monnaies 12 December 2017, lot 23
- R8. Λ API above, Σ reading downward on r., AIWN in ex., bridled stallion trotting r. Same reverse die also paired with O5, O6, O7, and O8
- a.* 12.20 g NFA Inv. No. 3100. Ex unknown findspot, 1989 (*CH IX*, 121) (Pl. 3, Fig. 11)
- b. 12.15 g Savoca Online Auction 40/Silver, 26 January 2020, lot 15. Savoca Online Auction 37/Silver, 29 September 2019, lot 60
- O5. Die eventually develops flaws on lower lid of proper l. eye and in inner corner of proper r. eye, visible when O5 is paired with R7. Additional flaws are visible between the lips when O5 is paired with R8
- R6. Λ AP above, $\Gamma\Sigma$ reading downward on r., AIWN in ex., bridled stallion trotting r. Flaw in upper field at top of letter A, more developed on specimen c; also the old flaw between the loop of the reins and the withers is larger on this specimen. Same reverse die also paired with O4

- a. 12.47 g Museum of Fine Arts, Boston, 894
- b.* 12.24 g Triton XV, 3 January 2012, lot 307. Giessener Münzhandlung 44, 3 April 1989, lot 277 (Pl. 3, Fig. 12)
- c. 12.11 g Bertolami-Art Coins Roma 24, 22 June 2016, lot 260. Gorny & Mosch 228, 9 March 2015, lot 87
- R5. Λ API above, Σ reading downward on r., AIWN in ex., bridled stallion trotting r. Possibly new flaws: fine linear flaw connecting stallion's muzzle with letter Σ , short vertical flaw rising from letter N above ex. line. Same reverse die also paired with O3 and O4
- a. 11.68 g NFA VIII, 6 June 1980, lot 134. Museum of Fine Arts, Boston, 895
- b. 11.94 g Naville XV, 1930, lot 628
- c. 12.15 g NAC 4, 1991, lot 115
- d. 11.13 g CNG 51, 15 September 1999, lot 257
- e. 12.07 g CNG Electronic Auction 198, 5 November 2008, lot 73
- f.* 12.04 g Gorny & Mosch 219, 10 March 2014, lot 157 (Pl. 4, Fig. 13)
- R7. Λ API above, Σ reading downward on r., AIWN in ex., bridled stallion trotting r. Oblique flaw extending downward and to r. from letter P, barely visible on specimen k. Same reverse die also paired with O4 and O6
- a. 12.24 g NFA Inv. No. 3099. Ex unknown findspot, 1989 (*CH IX*,121)
- b. 12.16 g NFA Inv. No. 3122. Ex unknown findspot, 1989 (*CH IX*,121)
- c. 11.54 g Münzhandlung Basel 8, 22 March 1937, lot 264
- d. 11.95 g Hess 249., 13 November 1979, lot 157
- e. 12.22 g MMAG XXV, 17 November 1962, lot 446
- f. 12.28 g 6 NAC 8, 3 April 1995, lot 242. Hess-Leu 24, 16 April 1964, lot 152
- g. 11.76 g NFA XI, 8 December 1982, lot 107. Hess-Leu 31,6–7 December 1971, lot 282. MMAG X, 1951, lot 245
- h. 12.14 g Tkalec & Rauch sale, 16–17 November 1987, lot 85
- i. 12.15 g Rauch 42, 16–18 January 1989, lot 2967
- j. 12.13 g CNG 73, 13 September 2006, lot 185. Dmitry Markov 11, 3 September 2003, lot 47. Reverse slightly double struck
- k. 12.00 g Naville VI (Bement Sale I), 28 January 1924, lot 919. Rosenberg sale, 9 March 1914, lot 92. Rollin et Feuardent, 22–23 May 1908, lot 264. Ex Delbeke 117. Reverse flaw visible
- l. 12.20 g 11 British Museum, *BMC* 55
- m. n.w. E. Waddell, *World of Coins* (1989)
- n. 11.58 g Künker 146, 10 March 2008, lot 578
- o. 11.98 g CNG Electronic Auction 207, 25 May 2009, lot 124
- p.* 12.22 g Palombo 18, 17 November 2019, lot 35. Triton XV, 3 January 2012, lot 306 (Pl. 4, Fig. 14)
- q. 12.17 g Gorny & Mosch 229, 10 March 2015, lot 1204

- r. 11.19 g Peus 415, 5 November 2015, lot 92
 s. 12.24 g Leu 1, 25 October 2017, lot 65

R8. Λ API above, Σ reading downward on r., AIWN in ex., bridled stallion trotting r. Same reverse die also paired with O4, O6, O7, and O8

- a. 12.21 g 6 LHS Numismatik 95, 25 October 2005, lot 596. Hess-Leu 45, 12–13 May 1970, lot 164. Hess-Leu 15, 7 April 1960, lot 158
 b. 12.20 g OGN-Pierre Crinon, 6 October 2017, lot 169. New York Sale, 3 December 1998, lot 100. Hess Leu 49, 27–28 April 1971, lot 146
 c. 11.84 g MMAG 72, 6 October 1987, lot 583. MMAG 64, 30 January 1984, lot 114. Ex Jameson 1092. Hirsch XIII (Rhusopoulos), 15 May 1905, lot 1320
 d. 12.29 g 12 Leu 48, 10 May 1989, lot 178. Leu 15, 4–5 May 1976, lot 205. Ex R.A. van Every Collection
 e. 12.24 g NFA VIII, 6 June 1980, lot 135
 f. 12.22 g NFA XII, 23–24 March 1983, lot 49
 g. 12.16 g Classical Numismatic Review XVI/1 (first quarter 1991), lot 81. Superior, 30 May 1990, lot 6819
 h. 12.18 g 6 NAC Auction N, 26 June 2003, lot 1261. Leu 83, 6 May 2002, lot 215. Peus 351, 23 April 1997, lot 115. Spink 94, 14 October 1992, lot 56. Peus 332, 23–28 October 1991, lot 116. Ex O.H. Knoepke Collection. Glendining, 10 December 1986, lot 184
 i. 11.96 g CNG 75, 23 May 2007, lot 160
 j. 12.19 g Leu 53, 21–22 October 1991, lot 84. Superior (Casterline), 1989, lot 6052
 k. 12.22 g NAC 72, 16 May 2013, lot 355. Sotheby, 9–10 December 1993, lot 328
 l. 12.03 g CNG Electronic Auction 203, 28 January 2009, lot 77
 m.* 12.19 g NAC 114, 6 May 2019, lot 161. CNG 90, 23 May 2012, lot 100 (Pl. 4, Fig. 15)
 n. 12.2 g Pecunem-Gitbud & Naumann 16, 4 May 2014, lot 175. Pecunem-Gitbud & Naumann 4, 2 June 2013, lot 83

R9. Λ API above, Σ reading downward on r., AIWN in ex., bridled stallion trotting r. This die was recorded without an image. It may be identical with R5

- a. 12.18 g NFA Inv. No. 3124. Ex unknown findspot, 1989 (*CH IX*, 121)

O5'. Flaw in proper l. eye is not apparent. Possibly an early state of the obverse die, or the die was reengraved to repair the flaw, or the coin itself was tooled

R10. Λ API above, Σ reading downward on r., AIWN in ex., bridled stallion trotting r. Same reverse die also paired with O6, in some cases in later state, and O7, in similar state, showing flaw curving up from back of stallion's neck to letter I

- a. 12.10 g NFA, 17–18 September 1981, lot 127. NFA V, 23–24 February 1978, lot 95. Auctiones 6, 30 September 1976, lot 132

O6.

R7. Λ API above, Σ reading downward on r., AIWN in ex., bridled stallion trotting r. Same reverse die also paired with O4 and O5

- a. 12.05 g Rauch 43, 5–7 June 1989, lot 253. Giessener Münzhandlung 42, 11 October 1988, lot 214
 b. 12.12 g Tkalec, 26 March 1991, lot 113

R8. Λ API above, Σ reading downward on r., AIWN in ex., bridled stallion trotting r. Same reverse die also paired with O4, O5, O7, and O8

- a. 12.30 g NFA Inv. No. 3113. Ex unknown findspot, 1989 (*CH IX*, 121)
 b.* 12.15 g Antiqua XII, lot 48. Tkalec Auction, 19 February 2001, lot 85 (Pl. 4, Fig. 16)
 c. 11.85 g Peus 372, 30 October 2002, lot 169

R10. Λ API above, Σ reading downward on r., AIWN in ex., bridled stallion trotting r. Earliest state of reverse die. Same reverse die also paired with O5 and O7, sometimes in earlier state here.

- a. 12.10 g Peus 374, 23 April 2003, lot 58. NFA Inv. No. 3101. Ex unknown findspot, 1989 (*CH IX*, 121)
 b. 12.23 g 4:30 Leu 20, 25–26 April 1978, lot 80
 c.* 12.21 g NAC 33, 6 April 2006, lot 139. NAC 25, 2003, lot 163 (Pl. 4, Fig. 17)
 d. 12.17 g Triton XV, 3 January 2012, lot 309
 e. 11.83 g CNG Electronic Auction 418, 11 April 2018, lot 166

O7. Flaw on Larissa's forehead below hairline, just beginning when O7 paired with R8. The flaw is more developed when O7 is paired with R11. During its use with R10, the flaw on the forehead becomes seriously disfiguring, and a new flaw develops beside the mouth (to viewer's l.). The die is in its latest state when combined with R12, but then it is recut, possibly twice

R8. Λ API above, Σ reading downward on r., AIWN in ex., bridled stallion trotting r. Same reverse die also paired with O4, O5, O6, and O8

- a.* 12.12 g NFA Inv. No. 3123. Ex unknown findspot, 1989 (*CH IX*, 121) (Pl. 4, Fig. 18)
 b. 11.58 g Hirsch XXIX (Lambros), 9 November 1910, lot 323. Hirsch XXV (Philipsen), 29 November 1909, lot 627
 c. 11.58 g 6 American Numismatic Society, Inv. No. 1944.100.16953

R11. Λ API above, Σ reading downward on r., AIWN in ex., bridled stallion trotting r.

a. 12.09 g CGB Monnaies 8, 16 June 2000, lot 34

R10. Λ API above, Σ reading downward on r., AIWN in ex., bridled stallion trotting r. Later state of reverse die, showing flaw curving up from back of stallion's neck to letter I. Fine vertical flaw connects Σ with knee of stallion's raised foreleg. Same reverse die also paired with O5, in similar state, and O6, in later state

- a. 12.18 g 5 SNR 79 (2000), 64. Ex Thessaly hoard, c. 1996 (*CH IX*, 87)
- b. 12.08 g 11 SNR 79 (2000), 65. Ex Thessaly hoard, c. 1996 (*CH IX*, 87)
- c. 12.21 g Giessener Münzhandlung 52, 6 November 1990, lot 217. Obverse die in same state as before
- d. 12.14 g Giessener Münzhandlung 50, 24 September 1990, lot 276
- e. Benson sale, Sotheby, 3 February 1909, lot 474. Montagu 304
- f. 12.19 g NFA Inv. No. 3116. Ex unknown findspot, 1989 (*CH IX*, 121). Either this, or specimen i or j was offered in NFA Summer 1993 Buy or Bid Sale, lot 180
- g. 12.14 g NFA XXXIII, 3 May 1994, lot 157. NFA Inv. No. 3120. Ex unknown findspot, 1989 (*CH IX*, 121)
- h. 12.21 g NFA Inv. No. 3114. Ex unknown findspot, 1989 (*CH IX*, 121)
- i. 12.19 g NFA Inv. No. 3119. Ex unknown findspot, 1989 (*CH IX*, 121)
- j. 12.14 g NFA Inv. No. 3125. Ex unknown findspot, 1989 (*CH IX*, 121)
- k. 12.16 g Künker 83, 17 June 2003, lot 245
- l.* 12.16 g 5 Goldberg 53, 24 May 2009, lot 1654. Goldberg 46 (Millenia), 26 May 2008, lot 27. Leu 81, 16 May 2001, lot 191. NFA XVIII, 31 March 1987, lot 136. NFA II, 25 March 1976, lot 131 (Pl. 4, Fig. 19)
- m. 12.25 g 11 British Museum, Inv. No. 1987, 6-49-446 (NACF pres. R.B. Lewis coll.)
- n. 12.06 g CNG 81, 20 May 2009, lot 405
- o. 12.08 g CNG Electronic Auction 207, 25 March 2009, lot 125
- p. 11.97 g Gorny & Mosch 196, 7 March 2011, lot 1448
- q. 12.13 g Gorny & Mosch 204, 5 March 2012, lot 1340
- r. n.w. Aurea 46, 19 May 2012, lot 1339
- s. 12.19 g Nihon 48, 9 December 2018, lot 5

R12. Λ API above, Σ reading downward on r., AIWN in ex., bridled stallion trotting r. Loop of reins angles downward. Horizontal flaw extending back from stallion's rump. Same reverse die also paired with O8

- a. 12.20 g NFA Inv. No. 3115. Ex unknown findspot, 1989 (*CH IX*, 121)
- b. 12.19 g NFA Inv. No. 3090. Ex unknown findspot, 1989 (*CH IX*, 121)
- c. 12.40 g NFA Inv. No. 3095. Ex unknown findspot, 1989 (*CH IX*, 121)
- d. 11.90 g Hirsch XIII (Rhosopoulos) 15 May 1905, lot 1318

- e. 12.01 g Naville X, 15–18 June 1925, lot 518. Naville V, 1923, lot 1743
- f. 12.16 g 11 *SNR* 79 (2000), 66. Ex Thessaly hoard, c. 1996 (*CH IX*, 87)
- g. 11.89 g Triton VI, 14 January 2003, lot 244. Reverse double struck
- h. 12.02 g 6 British Museum, Inv. No. 1933, 2-14-423 (Rev. E. Rogers)
- i. 12.08 g Triton XV, 3 February 2012, lot 310
- j.* 12.27 g Hirsch 355, 12 February 2020, lot 1695. Hirsch 348, 8 May 2019, lot 342. VAuctions 330, 22 May 2018, lot 95 (Pl. 4, Fig. 20)

O7'. Flaws on forehead and beside mouth absent, due to ancient recutting of die, but damage to lowest large lock on viewer's left remains uncorrected

R10. Λ API above, Σ reading downward on r., AIWN in ex., bridled stallion trotting r. Same reverse die also paired with O5, in similar state, and O6, in later state

- a. 12.23 g Spink-Taisei 7, 2 July 1989, lot 176

R12. Λ API above, Σ reading downward on r., AIWN in ex., bridled stallion trotting r. Same reverse die also paired with O8

- a.* 12.19 g Künker 104, 27 September 2005, lot 180. NFA Inv. No. 3102. Ex unknown findspot, 1989 (*CH IX*, 121) (Pl. 4, Fig. 21)
- b. n.w. Berk 55, 19 October 1988, lot 94
- c.* OGN-Pierre Crinon, 19 October 2016, lot 72 (Pl. 4, Fig. 22)

O7''. Small hornlike locks on forehead below anpyx, perhaps reflecting a second ancient recutting of die, but modern tooling cannot be excluded. Damage to lowest large lock on viewer's left remains uncorrected

R12. Λ API above, Σ reading downward on r., AIWN in ex., bridled stallion trotting r. Horizontal flaw behind rump extends onto body. Same reverse die also paired with O8, here in later state

- a.* 12.09 g Hirsch 281, 2 May 2012, lot 271. Hirsch 271, 17 February 2011, lot 1939. Hirsch 267, 5 May 2010, lot 228. Hirsch 264, 25 November 2009, lot 234. Hirsch 261, 7 May 2009, lot 250. Gemini V, 6 January 2009, lot 86 (Pl. 4, Fig. 23)

O8. Larissa's nose becomes flattened and a flaw develops beneath the nose, first visible when O8 is combined with R12 and deteriorating with R13. Tiny new flaws appear on the upper lid of the proper r. eye and on the nose by the inner corner of the same eye, visible when O8 is paired with R14 and R15

R8. Λ API above, Σ reading downward on r., AIWN in ex., bridled stallion trotting r. Same reverse die also paired with O4, O5, O6, and O7

- a. 11.87 g 2 Athena 1, 8 October 1987, lot 71. Lanz 38, 24 November 1986, lot 249

R12. Δ API above, Σ reading downward on r., AIWN in ex., bridled stallion trotting r. Horizontal flaw extending back from stallion's rump. Same reverse die also paired with O7

- a. 12.12 g NFA Inv. No. 3094. Ex unknown findspot, 1989 (CH IX, 121). Reverse double struck
- b. 12.18 g Roma E-Sale 63, 7 November 2019, lot 113. Gorny & Mosch 244, 6 March 2017, lot 226
- c.* 12.16 g MDC 3, 1 December 2017, lot 108 (Pl. 4. Fig. 24)

R13. Δ API above, Σ reading downward on r., AIWN in ex., bridled stallion trotting r.

- a. 12.15 g CNG 81, 20 May 2009, lot 406
- b.* 12.1 g Pecunem-Gitbud & Naumann 5, 7 July 2013, lot 84 (Pl. 4. Fig. 25)
- c. 12.31 g Gorny & Mosch 228, 9 March 2015, lot 88
- d. 11.97 g Solidus 49, 17 November 2019, lot 277

R14. Δ API above, Σ reading downward on r., AIWN in ex., bridled stallion trotting r.

- a.* 12.16 g NFA Inv. No. 3129. Ex unknown findspot, 1989 (CH IX, 121) (Pl. 4. Fig. 26)

R15. Δ API above, Σ reading downward on r., AIWN in ex., bridled stallion trotting r. Oblique flaw extending from stallion's raised r. foreleg through l. foreleg, passing through ex. line and letter W

- a. 12.07 g NFA Inv. No. 3126. Ex unknown findspot, 1989 (CH IX, 121)
- b. 12.18 g Spink Online Store, item SPK 20038-2. Realms Ancient Coins & Antiquities, VCoins. Alabama Coin and Silver, EBay item no. 8334917792, 15 September 2005. Berk 95, lot 124. NFA Summer 1993 Buy or Bid Sale, lot 182. NFA Inv. No. 3127. Ex unknown findspot, 1989 (CH IX, 121)
- c. 12.25 g NFA Inv. No. 3128. Ex unknown findspot, 1989 (CH IX, 121)
- d. 12.22 g Roma E-Sale 60, 1 August 2019, lot 136. Roma E-Sale 39, 26 August 2017, lot 90. Naumann 54, 4 June 2017, lot 115. Naumann 50, 5 February 2017, lot 142. Aurea 75, 3 December 2016, lot 1103. Gorny & Mosch 241, 10 October 2016, lot 1402. Lanz 56, 1991, lot 118
- e.* 12.13 g Künker 158, 28 September 2009, lot 199 (Pl. 4, Fig. 27)
- f. 12.02 g EBay, 22 July 2007, item # 290139734847. EBay Private Sale, 20 January 2007, item # 190072194278
- g. 12.10 g Spink 2096, 1 October 2009, lot 847

O8'. Nose improved by recutting of obverse die or modern tooling of coin, but flaw in inner corner of proper r. eye more developed

R15. Λ API above, Σ reading downward on r., AIWN in ex., bridled stallion trotting r.

- a.* 12.12 g NFA Summer 1993 Buy or Bid Sale, lot 179. NFA Inv. No. 3108.
Ex unknown findspot, 1989 (*CH IX*, 121). Late state of reverse die
(Pl. 4, Fig. 28)

Series B

O9. Larissa's nose flattened in the die

R16. Λ API above, Σ AIWN in ex., bridled stallion trotting r. Same reverse die also paired with O10

- a. 12.26 g NFA Inv. No. 3097. Ex unknown findspot, 1989 (*CH IX*, 121)
b. 12.20 g NFA Inv. No. 3098. Ex unknown findspot, 1989 (*CH IX*, 121)
c. 11.85 g Burgan-Florange, 17 November 2018, lot 39. Hamburger sale,
12 June 1930, lot 112. Serious die break affecting raised portion of
stallion's tail
d. 12.18 g Dewing 1397. Cahn sale, 27 February 1933, lot 186
e.* 12.08 g Triton XII, 6 January 2009, lot 222. Serious die break affecting raised
portion of stallion's tail (Pl. 5, Fig. 29)
f. 12.19 g CNG 81, 20 May 2009, lot 407. Serious die break affecting raised
portion of stallion's tail

O10.

R16. Λ API above, Σ AIWN in ex., bridled stallion trotting r. Same reverse die also paired with O9

- a. 12.17 g NAC S, 25 February 1992, lot 125. Overstruck, showing remnants
of dotted border on ampyx and in Larissa's hair
b.* 12.19 g 12 American Numismatic Society, Inv. No. 1967.152.237. Long
horizontal flaw from stallion's chest through length of body, passing
beneath raised tail to edge of die. Other small flaws before knee of
left foreleg and behind cannon of left hind leg (Pl. 5, Fig. 30)

R17. Λ API above, Σ AIWN in ex., bridled stallion trotting r.

- a.* 12.22 g NFA XXXIII, 3 May 1994, lot 157b. NFA Inv. No. 3109.
Ex unknown findspot, 1989 (*CH IX*, 121) (Pl. 5, Fig. 31)

R18. Λ API above, Σ AIWN in ex., bridled stallion trotting r.

- a.* 12.21 g NFA Inv. No. 3112. Ex unknown findspot, 1989 (*CH IX*, 121) (Pl. 5,
Fig. 32)

O11.

R19. ΛAPI above, ΣAIWN in ex., bridled stallion trotting r.

- a. Lanz 36, lot 255
- b. 11.88 g Hirsch 275, 22 September 2011, lot 3532. Lanz 34, 2 November 1985, lot 219
- c. 12.42 g Goldberg 41, 27 May 2007, lot 2865. Triton X, 9 January 2007, lot 180. UBS Gold and Numismatics 61, 14 September 2004, lot 4297. Giessener Münzhandlung 32, 12–13 November 1985, lot 65
- d.* 12.13 g Gorny & Mosch 211, 4 March 2013, lot 211 (Pl. 5, Fig. 33)

R20. ΛAPI above, ΣAIWN in ex., bridled stallion trotting r.

- a.* 12.07 g Triton XV, 3 January 2012, lot 303 (Pl. 5, Fig. 34)

O12.

R21. ΛAPI above, ΣAIWN in ex., bridled stallion trotting r.

- a. 11.90 g 11 Lanz 50, 27 November 1989, lot 178

R22. ΛAPI above, ΣAIWN in ex., bridled stallion trotting r., head lowered

- a. 12.40 g *McClellan* 4611, pl. 173, 7
- b. 12.24 g Giessener Münzhandlung 40, 7 April 1988, lot 158
- c.* 12.00 g CNG Electronic Auction 207, 25 March 2009, lot 126 (Pl. 5, Fig. 35)

R23. ΛAPI above, ΣAIWN in ex., bridled stallion trotting r.

- a.* 12.19 g Nomos 18, 5 May 2019, lot 93. Gorny & Mosch 107, 2 April 2001, lot 139. Nanteuil 843. Weber 2848 (Pl. 5, Fig. 36)
- b. 12.13 g Naville XII, 1926, lot 1285. Locker-Lampson 177

R24. ΛAPI above, ΣAIWN in ex., bridled stallion trotting r. Same reverse die also paired with O13, in early state here

- a. 12.17 g Giessener Münzhandlung 44, 3 April 1989, lot 278

O12'. Diagonal flaw on Larissa's neck, another at 7:00 crossing dotted border

R24. ΛAPI above, ΣAIWN in ex., bridled stallion trotting r. Flaw develops, curving down from back of stallion's neck through letters PI to tail. Other roughly horizontal flaws extending forward from raised foreleg, from chest below rein, and above back. Same reverse die also paired with O13

- a.* 12.24 g Triton XXI, 9 January 2018, lot 408. Triton XVII, 7 January 2014, lot 196. Triton XV, 3 January 2012, lot 305. Naville XIV, 2 July 1929, lot 236. Naville VI (Bement 1), 28 January 1924, lot 918. Reverse flaws not visible (Pl. 5, Fig. 37)
- b. 12.11 g CNG Electronic Auction 198, 5 November 2008, lot 74. Reverse flaws not visible
- c. 12.24 g NFA XXXIII, 3 May 1994, lot 157d. NFA Summer 1993 Buy or Bid Sale, lot 178. NFA Inv. No. 3111. Ex unknown findspot, 1989 (*CH IX*, 121). Reverse flaws visible
- d. 12.25 g NFA XXXIII, 3 May 1994, lot 157c. NFA Inv. No. 3105. Ex unknown findspot, 1989 (*CH IX*, 121). Reverse flaws visible
- e. 12.25 g Victor England V, 9 December 1988, lot 98. Reverse flaws visible
- f. 11.94 g Lanz 54, 12 November 1990, lot 149. Reverse flaws visible
- g. 11.90 g cbg Live Auction 5, 5 March 2019, lot 30

O13. A tiny flaw eventually develops in the inner corner of the proper l. eye, visible when O13 is paired with R26

R24. AAPI above, ΣAIWN in ex., bridled stallion trotting r. Same reverse die also paired with O12, in late state here

- a. 12.24 g NFA Inv. No. 3088. Ex unknown findspot, 1989 (*CH IX*, 121)
- b.* 12.26 g Triton XV, 3 January 2012, lot 304 (Pl. 5, Fig. 38)

R25. AAPI above, ΣAIWN in ex., bridled stallion trotting r.

- a. 11.68 g Lockett sale VI, 12 February 1958, lot 1434. SNG Lockett 1571. Pozzi 1219
- b. 12.17 g 6 American Numismatic Society, Inv. No. 1967.46.14. *SNG Berry* 540. BERRY, *Numismatic Biography*, 452
- c. Bibliothèque nationale de France. Inv. No. 285
- d.* 11.93 g CNG 84, 5 May 2010, lot 345. CNG 81, 20 May 2009, lot 408 (Pl. 5, Fig. 39)
- e. 11.26 g CNG Electronic Auction 418, 11 April 2018, lot 165. Poor reverse condition leaves the die identification slightly doubtful

R26. AAPI above, ΣAIWN in ex., bridled stallion trotting r. Flaw on ex. line beneath hoof of l. hind leg

- a. 12.26 g 5 Gorny & Mosch 151, 9 October 2006, lot 150. Gorny & Mosch 138, 7 March 2005, lot 62. Peus 380, 3 November 2004, lot 338. Lanz 68, 6 June 1994, lot 131. NFA Inv. No. 3096. Ex unknown findspot, 1989 (*CH IX*, 121)
- b. 12.25 g Hess 254, 25–26 October 1983, lot 165

- c. 11.99 g Gemini V, 6 January 2009, lot 559. Lanz 28, 7 May 1984, lot 213. Hess-Leu sale, 16 April 1957, lot 198
- d.* 12.24 g Hirsch 293, 25 September 2013, lot 2250 (Pl. 6, Fig. 40)

O14.

R27. ΛAPI above, ΣAIWN in ex., bridled stallion trotting r.

- a. 12.18 g NFA Inv. No. 3093. Ex unknown findspot, 1989 (*CH IX*, 121)
- b. 11.84 g Egger XXXIX (Royal Cabinet), 1912, lot 269
- c.* 12.17 g 12 Künker 326, 7 October 2019, lot 757. Leu 50, 25 April 1990, lot 131 (Pl. 6, Fig. 41)
- d. 12.21 g Berk 183, 28 March 2013, lot 111. Triton XV, 3 January 2012, lot 302. Giessener Münzhandlung 46, 30 October 1989, lot 147

O15. Larissa's hair forms an aureole of nearly parallel wavy locks.

R28. ΛAPI above, ΣAIWN in ex., bridled stallion trotting r. Stallion with very thick body. Many flaws extending back from hindquarters. Another flaw develops, rising obliquely from back of l. foreleg

- a.* 12.18 g Berk 180, 16 August 2012, lot 300. Triton XV, 3 January 2012, lot 301. NFA XXV, 29 November 1990, lot 97. NFA Inv. No. 3110. Ex unknown findspot, 1989 (*CH IX*, 121) (Pl. 6, Fig. 42)
- b. 12.25 g NFA Inv. No. 3092. Ex unknown findspot, 1989 (*CH IX*, 121)
- c. 12.23 g NFA XXXIII, 3 May 1994, lot 157e. NFA Inv. No. 3089. Ex unknown findspot, 1989 (*CH IX*, 121). Second flaw visible on reverse
- d. 12.10 g Künker 312, 8 October 2018, lot 2228. Hess-Divo 329, 17 November 2015, lot 61. UBS Gold & Numismatik 73, 5 September 2005, lot 319. UBS Gold & Numismatik 61, 14 September 2004, lot 4298. Giessener Münzhandlung 89, 1998, 139
- e. 12.18 g Triton IX, 10 January 2006, lot 865
- f. 12.15 g CNG E-Auction 226, 27 January 2010, lot 137. Berk 156, 23 October 2007, lot 107. NAC 39, 16 May 2007, lot 36. Ex Barry Feirstein and Harlan J. Berk collections
- g. 11.94 g Rutten and Wieland on VCoins, 9 September 2010. CNG Electronic Auction 223, 2 December 2009, lot 96. CNG Electronic Auction 207, 25 March 2009, lot 127

ABBREVIATIONS

CH = *The Coin Hoards*, vols. I–X, London–New York 1975–2010.

Jameson = *Collection of R. Jameson, Greek and Roman Imperial Coins*, vols. I–III, Paris 1913–1924.

Locker-Lampson = E.S.G. ROBINSON, *Catalogue of Ancient Greek Coins collected by Godfrey Locker-Lampson*, London 1923.

- McClellan = S.W. GROSE, *Catalogue of the McClellan collection of Greek coins*, vols. I–III, Cambridge 1923–1929.
- Nanteuil = H. de NANTEUIL, *Collection des monnaies grecques*, Paris 1925.
- Pozzi = *Monnaies grecques antiques provenant de la collection de feu le Prof. S. Pozzi*, Zürich 1966.
- SNG Berry = *Sylloge Nummorum Graecorum, United States, Burton Y. Berry Collection*, vol. I: *Macedonia to Attica*, New York 1961.
- SNG Lockett = *Sylloge Nummorum Graecorum, Great Britain III, R.C. Lockett Collection*, vol. IV: *Peloponnese–Aeolis*, London 1945.
- SNG Sweden = *Sylloge Nummorum Graecorum. Sweden II. The Collection of the Royal Coin Cabinet National Museum of Monetary History Stockholm*, part 2: *Thrace-Euboia*, Stockholm: Royal Academy of Letters History and Antiquities, 1980.
- Weber = L. FORRER, *The Weber Collection of Greek coins*, London 1922–1929.

REFERENCES

- BELLINGER, A.R. 1965. “The Thessaly hoard of 1938”. In. *Congresso Internazionale di Numismatica, Roma 11–16 settembre 1961*, vol. II, Rome: 57–60.
- BERRY, B.Y. 1971. *A Numismatic Biography*, Lucerne.
- BOUTIN, S. 1979. *Catalogue des monnaies grecques antiques de l'ancienne collection Pozzi: monnaies frappées en Europe*, Maastricht.
- BUCKLER, J. 1989. *Philip II and the Sacred War*, Mnemosyne, Supplements 109, Leiden. DOI: 10.1163/9789004329058
- CARTER, G.F. 1983. “A simplified method for calculating the original number of dies from die link statistics”, *American Numismatic Society Museum Notes* 28: 195–206.
- DE CALLATAÏ, F. 1995. “Calculating ancient coin production: seeking a balance”, *Numismatic Chronicle* 155: 289–312.
- DE CALLATAÏ, F. 1997. *L'Histoire des guerres mithridatiques vue par les monnaies*, Numismatica Lovaniensia 18, Louvain-la-Neuve.
- DE CALLATAÏ, F. 2011. “Quantifying monetary production in Greco-Roman times”. In. F. DE CALLATAÏ (ed.), *Quantifying Monetary Supplies in Greco-Roman Times*, Bari: 7–29.
- ELLIS, J.R. 1976. *Philip II and Macedonian Imperialism*, Princeton.
- ESTY, W.W. 2006. “How to estimate the original number of dies and the coverage of a sample”, *Numismatic Chronicle* 166: 359–364.
- ESTY, W.W. 2011. “The geometric model for estimating the number of dies”. In. F. DE CALLATAÏ (ed.), *Quantifying Monetary Supplies in Greco-Roman Times*, Bari: 43–58.
- FAUCHER, T. 2011. “Productivité des coins et taux de survie du monnayage grec”. In. F. DE CALLATAÏ (ed.), *Quantifying Monetary Supplies in Greco-Roman Times*, Bari: 113–126.
- FISCHER-BOVET, C. 2014. *Army and Society in Ptolemaic Egypt*, Cambridge. DOI: 10.1017/CBO9781139035231
- GRIFFITH, G.T. 1970. “Philip of Macedon’s early interventions in Thessaly”, *Classical Quarterly* 20/1: 67–80.
- HERRMANN, F. 1925. “Die Silbermünzen von Larissa in Thessalien”, *Zeitschrift für Numismatik* 35: 1–69.
- KRAAY, C.M. 1976. *Archaic and Classical Greek Coins*, Berkeley/Los Angeles.
- LE RIDER, G. 1977. *Le monnayage d'argent et d'or de Philippe II*, Paris.
- LORBER, C.C. 1992. “The early facing head drachms of Thessalian Larissa”. In. H. NILSSON (ed.), *Florilegium Numismaticum: Studia in Honorem U. Westermark Edita*, Stockholm: 259–282.

- LORBER, C.C. 2000. "A hoard of facing head Larissa drachms", *Schweizerische Numismatische Rundschau* 79: 7–15. DOI: 10.5169/seals-175709
- LORBER, C.C. 2008. "Thessalian hoards and the coinage of Larissa", *American Journal of Numismatics* 20: 119–142.
- LORBER, C.C. 2009. "Thessaly, 1993 hoard (CH IX, 64)", *Schweizerische Numismatische Rundschau* 88: 127–133. DOI: 10.5169/seals-179776
- LORBER, C.C. 2015. "The beginning of the late facing head drachm coinage of Larissa". In: U. WARTENBERG and M. AMANDRY (eds.), *KAIROS: Contributions to Numismatics in Honor of Basil Demetriadi*, New York: 117–146.
- MARTIN, T.R. 1982. "The end of Thessalian civic coinage in silver: Macedonian policy or economic reality?". In: T. HACKENS and R. WEILLER (eds.), *Proceedings of the 9th International Numismatic Congress, Bern, September 1979*, Louvain-la-Neuve/Luxembourg: 157–164.
- MARTIN, T.R. 1983. "The chronology of the fourth-century B.C. facing-head silver coinage of Larissa", *American Numismatic Society Museum Notes* 28: 1–34.
- MARTIN, T.R. 1985. *Sovereignty and Coinage in Classical Greece*, Princeton.
- PRICE, M.J. "The coinage of Philip II", *Numismatic Chronicle* 19: 230–241.

Author's address:

Catharine C. Lorber
catharinelorber@hotmail.com

| | |
|------------|---|
| PLATE 1 | Chart 1. Larissa staters. Series A Die Linkage |
| PLATE 2 | Chart 2. Larissa staters. Series B Die Linkage |
| PLATES 3–6 | Larissa staters (didrachms). The photographs correspond to the die linkage as per Catalogue (*) |

Fig. 1. O1/R1a; Boston, Museum of Fine Arts, Inv. No. 03.963; Copyright @ Museum of Fine Arts, Boston

Fig. 2. O2/R2a; Nomos 4, 10 May 2011, lot 1158; by permission of Nomos A.G.

Fig. 3. O3/R3a; Peus 401, 3 November 2010, lot 307; by permission of Busso Peus Nachfolger

Fig. 4. O3'/R3a; Helios 6, 9 March 2011, lot 54; by permission of Helios Numismatik

Fig. 5. O3/R4l; MDC 5, 14 November 2019, lot 33; by permission of Monnaies de Collection sarl

Fig. 6. O3/R5a; Triton XII, 6 January 2009, lot 221; by permission of CNG

Fig. 7. O3/R5f; Lanz 155, 10 December 2012, lot 122; by permission of Numismatik Lanz

Fig. 8. O4/R6a; Triton XXIII, 14 January 2020, lot 238; by permission of CN

Fig. 9. O4/R5b; Triton XXIII, 14 January 2020, lot 239; by permission of CNG

Fig. 10. O4/R7h; Gorny & Mosch 228, 9 March 2015, lot 86; by permission of Gorny & Mosch Giessener Münzhandlung, and B. Seifert/Lübke-Wiedemann, Leonberg

Fig. 11. O4/R8a; NFA 3100, ex CH IX, 87, author's photo

Fig. 12. O5/R6b; Triton XV, 3 January 2012, lot 307; by permission of CNG

Fig. 13. O5/R5f; Gorny & Mosch 219, 10 March 2014, lot 157; by permission of Gorny & Mosch Giessener Münzhandlung, and B. Seifert/Lübke-Wiedemann, Leonberg

Fig. 14. O5/R7p; Triton XV, 3 January 2012, lot 306; by permission of CNG

Fig. 15. O5/R8m; NAC 114, 6 May 2019, lot 161; by permission of Numismatica Ars Classica

Fig. 16. O6/R8b; Tkalec, 19 February 2001, lot 85; by permission of Tkalec with Antiqua XII, lot 48; by permission of Antiqua, Ltd.

Fig. 17. O6/R10c; NAC 33, 6 April 2006, lot 139; by permission of Numismatica Ars Classica

Fig. 18. O7/R8a; NFA 3123, ex CH IX, 87, author's photo

Fig. 19. O7/R10l; Goldberg 53, 24 May 2009, lot 1654, by permission of Ira and Larry Goldberg

Fig. 20. O7/R12j; Hirsch 348, 8 May 2019, lot 342, by permission of J. Hirsch Nachfolger

Fig. 21. O7'/R12a; Künker 104, 27 September 2005, lot 180, by permission of Fritz Rudolf Künker GMBH & Co. KG, Osnabrück, and Lübke & Wiedemann KG, Leonberg

Fig. 22. O7'/R12c.; OGN-Pierre Crinon, 19 October 2016, lot 72, by permission of OGN Numismatique-Pierre Crinon

Fig. 23. O7''/R12a; Hirsch 271, 17 February 2011, lot 1939, by permission of J. Hirsch Nachfolger

Fig. 24. O8/R12c; MDC 3, 1 December 2017, lot 108, by permission of Monnaies de Collection sarl

Fig. 25. O8/R13b; Pecunem-Gitbud & Naumann 5, 7 July 2013, lot 84, by permission of Numismatik Naumann (formerly Gitbud and Naumann)

Fig. 26. O8/R14a; NFA 3129, ex CH IX, 87, author's photo

Fig. 27. O8/R15e; Künker 158, 28 September 2007, lot 199, by permission of Fritz Rudolf Künker GmbH & Co. KG, Osnabrück, and Lübke & Wiedemann KG, Leonberg

-
- Fig. 28. O8'/R15a; NFA 3108, ex *CH IX*, 87, author's photo
- Fig. 29. O9/R16e; Triton XII, 6 January 2009, lot 122, by permission of CNG
- Fig. 30. O10/R16b; ANS 1967.152.237, photo by Panagiotis P. Iossif, used by permission
- Fig. 31. O10/R17a; NFA 3109, ex *CH IX*, 87, author's photo
- Fig. 32. O10/R18a; NFA 3112, ex *CH IX*, 87, author's photo
- Fig. 33. O11/R19d; Gorny & Mosch 211, 4 March 2013, lot 26, by permission of Gorny & Mosch Giessener Münzhandlung, and B. Seifert/Lübke-Wiedemann, Leonberg
- Fig. 34. O11/R20a; Triton XV, 3 January 2012, lot 303, by permission of CNG
- Fig. 35. O12/R22c; CNG Electronic Auction 207, 25 March 2009, lot 126, by permission of CNG
- Fig. 36. O12/R23a; Nomos 18, 5 May 2019, lot 139, by permission of Nomos A.G.
- Fig. 37. O12'/R24a; Triton XV, 3 January 2012, lot 305, by permission of CNG
- Fig. 38. O13/R24b; Triton XV, 3 January 2012, lot 304, by permission of CNG
- Fig. 39. O13/R25d; CNG 84, 5 May 2010, lot 345, by permission of CNG
- Fig. 40. O13/R26d; Hirsch 293, 25 September 2013, lot 2250, by permission of J. Hirsch Nachfolger
- Fig. 41. O14/R27c; Künker 326, 7 October 2019, lot 757, by permission of Fritz Rudolf Künker GmbH & Co. KG, Osnabrück, and Lübke & Wiedemann KG, Leonberg
- Fig. 42. O15/R28a; Berk 180, 11 August 2012, lot 300, by permission of Harlan J. Berk

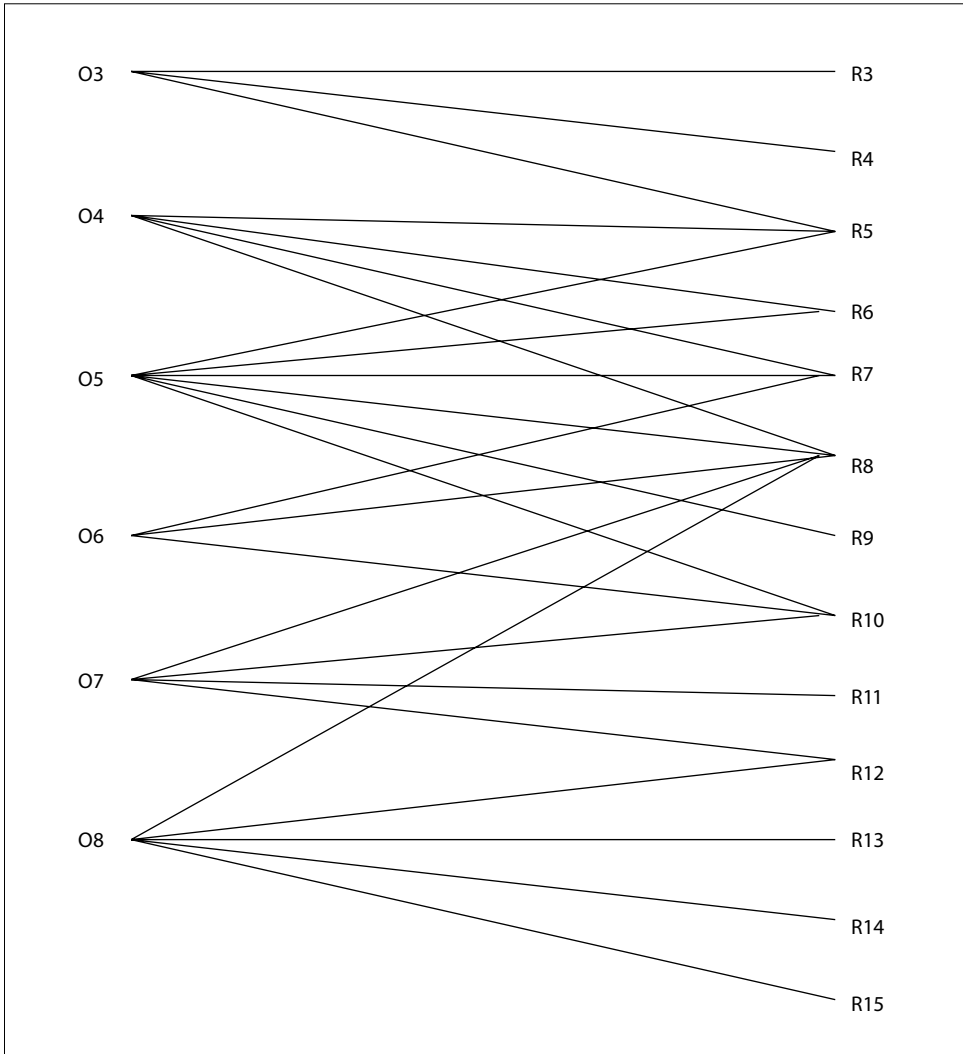


Chart 1. Larissa staters. Series A Die Linkage

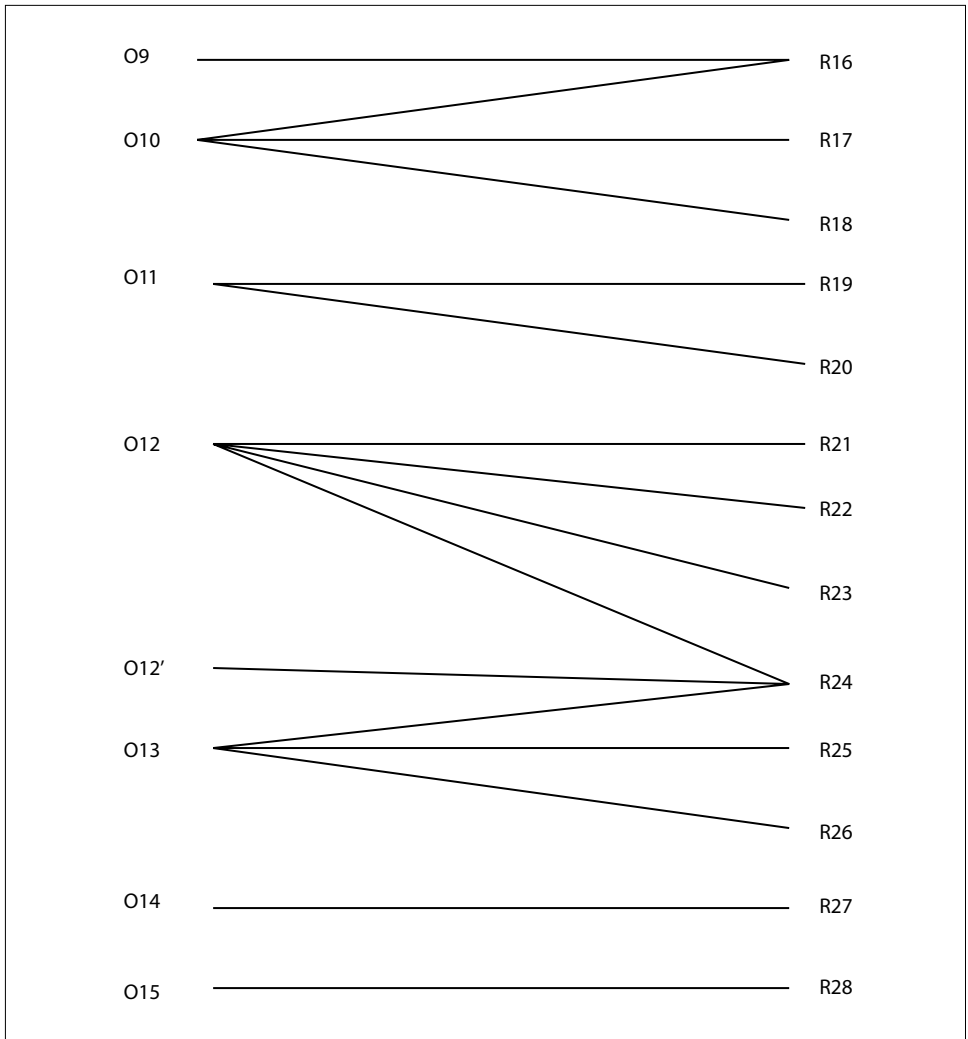


Chart 2. Larissa staters. Series B Die Linkage



1. O1/R1a



7. O3/R5f



2. O2/R2a



8. O4/R6a



3. O3/R3a



9. O4/R5b



4. Dubious O3/R3a



10. O4/R7h



5. O3/R4l



11. O4/R8a



6. O3/R5a



12. O5/R6b



13. O5/R5f



19. O7/R10l



14. O5/R7p



20. O7/R12j



15. O5/R8m



21. O7'/R12a



16. O6/R8b



22. O7'/R12c



17. O6/R10c



23. O7''/R12a



18. O7/R8a



24. O8/R12c





25. O8/R13B



31. O10/R17A



26. O8/R14A



32. O10/R18A



27. O8/R15E



33. O11/R19D



28. O8/R15A



34. O11/R20A



29. O9/R16E



35. O12/R22C



30. O10/R16B



36. O12/R23A



37. O12'/R24A



38. O13/R24B



39. O13/R25D



40. O13/R26D



41. O14/R27C



42. O15/R28A