The dating of coinage by regnal years was not uncommon on some Hellenistic coinages. In earlier Greek times the system of marking dies, and thus their products, with a serial letter had sometimes been seen. And during the later Roman Republic this system was, for a fairly short period, very conspicuously employed when the obverse and reverse dies of the huge denarial issues of L. Calpurnius Piso Frugi and his contemporaries were marked with numbers up to very high totals, others being marked by a large variety of pictorial symbols.

These are among the most obviously visible examples of a practice which may well have included other and only more subtly recognizable signs of identification comparable to the seemingly accidental use of broken letter-forms on medieval coinages. There is nothing very remarkable in any such system. Coinage is normally a more or less continuous process in any state of consequence. If not regularly annual, it is at least predictably periodic. And since coinage has at most times been the prerogative of the state, or of its temporal head, it was not unnatural if the state should wish, by means of regnal dates, numbered dies, or other and covert means, to identify periods of coinage-issue and thereby those responsible for such issues. The Pyx trials, continuing annually in the Britain of our own day, are a reminder of this principle. It was a principle of obviously great importance when a state’s coinage consisted, as it did under the Julio-Claudian emperors, of gold and silver — both of high intrinsic quality — alongside the token aes of orichalcum and/or copper.

(*) This paper results from reflection on the Julio-Claudian coinage after finishing the new *RIC I.*
The coinage of the mint of Rome from Philip I onwards, like that of other imperial mints in succeeding years, came to bear the overt markings of letters or numbers denoting the mint-officina which produced them. This practice, at first intermittent, but later quite regular, enabled those who were responsible for the quality of coinage to identify, by means of reference to mint-records, the source of any defective issues. We have to ask whether this visible distinguishing of an officina-source was, in a total sense, an innovation of Philip's own day. As we have seen, dies had been openly marked in classical Greek, Hellenistic, and Roman Republican times. This does not of course prove that Philip re-introduced a long obsolete system: this earlier marking of dies could conceivably have had some other purpose, such as (for example) the estimation of the amount of silver consumed in a coinage-series, such estimation being based on an average quantity of silver per die. Nevertheless, by Philip's time the imperial coinage issued from Rome had been a massive and systematically stable series for two centuries. Even if we disregard the possibility (to put it no higher) that distinction of officinae by means of distinction of reverse type — a system outlined with authority by Mattingly in *RIC IV* (3), p. xvi f. — could, in combination with varying obverse legends and/or busts, date a coin closely by reference to an officially kept mint-record, it would seem surprising if the vast stream of imperial coinage before Philip's time lacked any even covert indications of a system of dating and thus of control. Long habituation to the ceaseless element of variation in the imperial coinage must not blind us to the possibility that such variation could have contained system.

A review of Julio-Claudian coinage is therefore legitimate with these questions in mind, and we may enquire whether any usages can be detected from which, by hypothetical reference to the official mint-records of the time, the vast majority of those issues — aes as well as gold and silver — could have been closely dated by mint-officials. In making this enquiry, moreover, we must never underestimate the strong annalistic instinct of the Roman mind (1).

Under Augustus the imperial coinage showed no settled system of either mints or types or control. It was a mosaic: a number of *ad hoc* mints — some still of only conjectural identity — worked for various purposes under differing authorities in different parts of the

empire. In the far west, the mint of Emerita in military Lusitania, and the two hypothetical mints of Hispania, one perhaps in a military province, the other perhaps in a civil province, supplied silver and gold primarily for the legions in Spain (but also for the highly romanized Baetica), together with some very notably differentiated *aes* from Emerita. In Gaul, Lugdunum (its military centre) provided a stream of gold and silver for the adjacent Rhine legions, as well as copious *aes*: these issues spanned some two decades, like the equally abundant *aes* of civilian Nernausus. In the east, now recovered from Antony, there were (apart from ephemeral denarii produced most probably in Greece and Samos) copious issues of cistophoric silver, with some *aes*, from Ephesus and Pergamum, both in a civil province, together with some Pergamene aurei and denarii for legionary use. If we seek any sign of system, this should be at Rome, for so long the chief and central mint, which, after closure during the Second Triumvirate, perhaps re-opened c. 27 B.C. and was once again working from c. 19 B.C. From then it was active until c. 4 B.C., producing gold, silver and *aes*; and more *aes* of Rome followed in Augustus' closing years. Such was the Augustan monetary mosaic.

In the provincially situated Augustan mints of west and east dated coins are not normally found. However, in any short-lived series the date of a coin could be officially gained by the nature or change of the obverse portrait or of the reverse type, or (as was most conspicuous in the *aes* of Emerita) by change of legend, or by a combination of these factors. Through such indications, singly or combined, it would have been possible to date any of these issues fairly closely except the 'Altar' *aes* of Lugdunum, in which (in each of its two main periods) the type-elements seem to have been frozen. Very exceptionally, Pergamene cistophori were closely dated, in 19–18 B.C.

At Rome, by contrast, coins received precise annual dating from c. 19 to c. 4 B.C., for they bore the names of the *III viri monetales* who supervised the mint; and even if modern scholars cannot date these junior officials with certainty, the Rome of their own day certainly could. Furthermore, when the mint of Rome re-opened (for *aes* alone) in A.D. 10, the coins — now without moneyers' names — were given precise dates by the elements of Augustan and Tiberian titulature. For Augustus, then, it may be said that, although his peripheral mints employed no systematic practice of dating their
coins, the mint of Rome by contrast dated its products, in all metals, on at least an annual basis. Sometimes, indeed, it may have been even more precise, for legend-variety in two issues in particular — the gold and silver of the collegium Turpilianus/Florus/Durmius and the *aes* quadrantes of the collegium Apronius/Galus/Messalla/Sisenna — is so great and so obviously non-accidental, that the variations may have indicated fractions (perhaps single months) of a full year. The *aes* of P. Carisius at Emerita c. 25-23 B.C. had, incidentally, been equally conspicuous in this same respect.

Under Tiberius the production of gold and silver coinage was moved from Rome to Lugdunum, Rome retaining responsibility for virtually all the *aes* of the reign. Apart from the series of gold quinarii annually dated by tribunician tenure (a series of which the exact purpose can only be conjectured), the rest of the huge Lugdunese series of gold and silver is all undated, although developments in portraiture and in the details of the reverse type may give to the modern eye some hazy outlines of what was chronologically more explicit at the time. At Rome, on the other hand, the *aes* was in nearly all cases dated, mostly by tribunician tenure (including that of Drusus), thus maintaining the new system originated at Rome in Augustus' closing years. The only block of Tiberian *aes* to lack a precise, visible date was his very large *Divus Augustus Pater* series. Here no dating by reference to Tiberius' tribunician tenure was possible: the coins bore the portrait and legends of Augustus on the obverse, with reverses likewise referring to him. There was no room for a Tiberian *trib. pol.* dating; and, even if there had been, its inclusion would have resulted in an annalistic hotch-potch. It was not until the reign of Titus that this particular difficulty was neatly solved. Titus' commemorative coins bore the types, obverse and reverse, of the imperial person commemorated, with the original obverse legend, but the reverse legend was that of Titus, often with tribunician or consular date, and always ending with REST(*tituit*).

It is perhaps worth noting that, while most of Tiberius' mid-reign *aes* was dated (and by *trib. pol.*), the *ces* of his final years was all of it thus dated.

There is still disagreement about the question whether Gaius began his series of gold and silver at Lugdunum, transferring it to Rome in the course of A.D. 37 as Mattingly proposed, or struck it all, and from the first, at Rome as Giard has argued more recently. However, the point of central importance for the present is that all his
gold and silver, whether from Lugdunum or Rome, was precisely
dated by tribunician and consular tenure. Gaius is thus seen to
have made, for his gold and silver, an abrupt and total change from
the practice of Tiberius; and, although one might argue that Gaius
simply wished to see his titles of power prominently displayed, and
proliferating, on his aurei and denarii (2), it is not easy to avoid the
feeling that this change may also have been a means of exercising
closer control over precious-metal coinage as part of his desire for
efficiency (3). Nor was such treatment reserved only for precious-
metal coinage. Apart from the commemorative issues struck for
Agrippina senior, Germanicus, Divus Augustus, and Agrippa (whose
abundant asses belong more probably to Gaius' reign than to Tibe-
rius'), all his other and 'regular' aes was also dated, in 37-8, 39-40,
and 40-1. We have seen that commemorative coins were not yet
dated, as they came to be in the Flavian period. But the inclusion
of dates on all of Gaius' aes struck in his own name strengthens the
supposition, derived from the dated gold and silver, that Gaius intro-
duced a closer control of imperial coinage in all metals.

Claudius' principate brought another change of emphasis:
evidently official usage regarding the dating of the imperial coinage
had not yet crystallized. All gold and silver, it may be safely accept-
ed, was now struck at Rome, and from A.D. 41 to 50 it bore without
exception a precise dating, either tribunician or consular or by
reference to imperial salutation or by a combination of two or more
of these elements. Such dating continued on certain issues until
A.D. 51-2, but Claudius' marriage to the younger Agrippina in 49,
and his adoption of her son Nero in 50, resulted during 50-4 in the
production of undated gold and silver with types referring to them.
It is possible that these coins were regarded, from the official point
of view, as lying apart from (even if closely connected with) what
may be called the 'regular' imperial series of dated gold and silver
that continued until 51-2; already there had been commemorative
(and thus undated) gold and silver in honour of Antonia and Germa-
icus between 41 and 45. It does seem to be the case that the official
mind controlling the Roman mint felt an annalistic distinction
between the regular issues of a reigning princeps in his own dated
name on the one hand and, on the other, the undated issues struck

(3) Ibid., p. 148.
in the name of his relations, either through courtesy or through reverential family piety.

The *aes* of Claudius was, however, undated throughout, except for the quadrantes issued in 41-(?)-43: these latter were dated with great precision, and for some reason which can only be conjectured, though they were presumably connected somehow with the inaugural liberality of Claudius' accession. The remaining *aes*, by contrast with the carefully dated 'regular' *aes* of Gaius, bore no more indication of date than the absence or presence of *P(aler) P(alriae)*, a title which, as Kraay has persuasively argued (4), probably appeared on *aes* c. A.D. 50. *Aes* alluding to Agrippina and Nero plainly fell in the period 50-4. As a whole, however, it is correct to say that while Gaius' *aes* was dated, and with precision, the great mass of Claudius' *aes* was not; and we may legitimately ask if this phenomenon, coupled with the widespread flood of imitative Claudian *aes* and also with the frequency of plated Claudian *denarii*, suggests some slackening of the disciplined control which may be read into Gaius' system of dating.

Under Nero all gold and silver coins struck at Rome (the sole imperial mint for aurei and *denarii*) were precisely dated by tribunician or consular tenure, or both, from A.D. 54 to 63/64, with the sole exception, once again, of the commemorative issues — in this case for Divus Claudius, to be assigned to 54. Even the initial issues which gave such prominence to Nero's mother Agrippina bore the dated titles of Nero. From 64 to 68 there were no dated legends: the praenomen *IMP*, to be placed in 66, is our only explicit chronological guide, apart from the suggestive but imprecise content of the reverse types; and in this regard the latest issues of Nero are comparable with the latest issues of Claudius. For both emperors, evidently, emphasis on annalistic chronology faded in their closing years, and it would be interesting to know the mentality of the planning authority — whether the emperors themselves or their subordinates — which allowed or encouraged this deviation in each case.

With Nero's Roman *aes*, however, as also with that of Lugdunum which closely shadowed it, we find a conspicuous innovation. Hitherto imperial *aes*, whether it bore an official titular date or not,

had borne year by year a narrowly stereotyped pattern of the imperial legend from the later years of Tiberius down through the reigns of Gaius and Claudius. Nero did not coin aes until c. A.D. 62-3 — nearly three decades since the annually stereotyped and sometimes dated legends of those late aes coins of Tiberius had set the model followed by Gaius and Claudius. But, with the merest handful of very rare exceptions (and these at the end of his reign), Nero's aes bore no titular dates: only the praenomen IMP from A.D. 66 gives any definite chronological indication. And Nero not only abandoned the dating of aes, as Claudius had done before him: he abandoned also the stereotyped obverse legends for aes which had become standard practice with his predecessors. From the very beginning Nero's aes showed a profuse variety of obverse legends. Thus, on the sestertii, dupondii and asses of his first aes issue (that is, on all but the very small denominations, which required specially short legends) eight varieties of legend were employed; in his second issue, seven varieties; in his third, nine varieties; and so on throughout the remaining issues of Nero's great flood of aes.

Elsewhere I have suggested (5) that there may be chronological significance in this great variation, and that it was deliberate, not an accidental matter of whim. For it was undoubtedly much easier for a die-engraver cutting a continuous series of dies to reproduce one legend for as long as possible: in that way he could maintain a familiar disposition of letter-spaces and avoid the necessity of learning how to accommodate half a dozen or more different legend-forms within the period of a single issue. From this one may, then, possibly conjecture that legend-variation, in combination with a mint-record, could have been (as suggested above for certain issues of Augustus) a perfectly effective means of controlling the quality of the mint's product by reference to the staff employed at any relevant period of legend variation. This would have been no more than has always been done by mint-marks, « secret marks », and the like: such matters as metal-content, weight, module, and technical quality must be subjected to continuous review. We do not yet know which official (or group of officials) was responsible for carrying out this review. By the time of Trajan it could well have been among the duties laid upon the optio el exactor auri argentii el aeris (CIL VI, 42),

who would appear to have been the senior figure among the various technical members of the staff of the mint of Rome at that period: an exactor was a superintendent with over-riding authority. Maintenance of technical standards in mint-operation was of over-riding importance.

Galba’s reign saw the Neronian phenomenon repeated exactly, and because Galba’s reign lasted for less than a year the phenomenon is all the more remarkable. His Roman gold and silver falls into four main groups differentiated by certain principal legend-characteristics; but within each of these four main groups there are distinct sub-groups, defined by lesser legend-variations — each of the first three of the main groups includes three sub-groups — and it would therefore seem likely that these sub-groups mark short and distinct chronological periods, of perhaps a month or a few weeks. Galba’s aes shows the same principle. Until his sixth and final group, issued c. December 68 when his position was crumbling, his Group I aes had displayed five obverse legend-variants, Group II four, Group III six, Group IV six, and Group V four. None of these groups can have lasted for more than a month or two. It does not therefore seem possible that such differentiation of obverse legends could have been devised, imposed, and effected except as a means of checking quality and output. Deliberate purpose alone must explain what would otherwise have been a most inconvenient practice.

Otho’s three months in power show two variants of obverse legend. The eight months of Vitellius display the same principle, not only more widely, but also at mints other than that of Rome.

Many questions remain. Why was differentiation of obverse legends so abruptly introduced and so vigorously followed — and for aes in particular — from c. 62 to 68? Was there a remarkably sharp increase in aes production in relation to gold and silver? Was the supply of coinage-metal for aes (copper as well as orichalcum) a matter in which a new sense of economy made itself felt? Did Nero’s reduction of the weight of aureus and denarius in some way involve or even dictate a closer control of aes? Was bureaucratic control temporarily more meticulous simply for the sake of being so? Was differentiation by obverse legend-variation a more satisfactory method of product-control than tribunician dating, since the latter changed only once a year?

Historical sources provide no suggestions by way of answers. Nor (as might have been hoped) do the Flavian coinage-issues, where
not only the gold and silver but also the *aes* coins were largely dated by tribunician and consular tenure, though some degree of obverse-legend variation is still clear and could doubtless reveal sub-groups in any given year. Innovation, however, generally has some purpose behind it; and it is this purpose that one would wish to know when, under the Julio-Claudian emperors, dated and undated coinage, and stereotyped and conspicuously varied obverse legends, alternated so often.