

Roman architectural practice and the funding of public buildings

Lino Bianco

The industry related to the art and science of building, with its emergence at the onset of the Neolithic revolution, is effectively the fixed investment of a nation. It is a main source of employment for many workers. Such activities were a focal point in the Ancient Roman building industry. The Romans were well aware of the main difference between building and other manufacturing industries, namely, that the resultant product is assembled on site where it is to be used. They developed an awareness associated with the financial, organizational, and managerial difficulties involved. The following three issues will be considered in this article: the relevance of Roman philosophy of architectural education and its influence on politicians; how free was *free* labour and why?; and finally, to what extent were public buildings publicly funded? These issues were addressed by considering (1) the setting for Roman architectural practice, (2) architectural education and educational architecture, (3) public works and labour force, (4) public and private funds for public buildings and (5) public administration and architects' professional ethics regarding financial matters in the building industry.

The setting of the Roman architectural practice

Architectural practice in ancient Greece was the backdrop to the Roman ideal. In Greece, after undergoing an apprenticeship by building sanctuaries, architects worked exclusively for the gods. Clients 'were either representatives of

the gods, or the people and always magistrates'.¹ From surviving inscriptions, it is evident that specifications were very accurate, estimates were demanded, and accounts regularly kept of all building works. Community buildings such as temples and theatres were commissioned by the town. Public funds made good for the costs of such edifices.²

Etymologically the Greek word *ἀρχιπέκτων*, translated freely into English as architect, is derived from the terms *ἄρχων*, meaning chief, and *τέκτων*, meaning builder. Thus an *ἀρχιπέκτων* is a chief workman. Design and construction were vested in one individual. The *ἀρχιπέκτων* was a designer, contractor, clerk of works, and most skilful artisan.³ As director of workmen, he contributed theoretical knowledge and not practical craftsmanship. During the building process, he did not just work out what should be done but also gave instructions to workmen until the building was completed. The Roman ideal was described thus by Vitruvius:⁴

'Architects who have aimed at acquiring manual skill without scholarship have never been able to reach a position of authority to correspond to their pains, while those who relied only upon theories and scholarship were obviously hunting the shadow, not the substance. But those who have a thorough knowledge of both, like men armed at all points, have the sooner attained their object and carried authority with them.'

Architects were drawn both from men of good birth and from freed slaves.⁵ Architects in public service were in charge of 'siege works,

with the manufacture and repair of the engines of war; laying out and constructing camps whether temporary or permanent, roads, earthworks, bridges, gates, drains; the erection of market-places, temples, basilicas, the Imperial palaces and tombs, the public theatres, amphitheatres, and circuses, the public baths, etc.’⁶

Architectural education and educational architecture

The main complete handbook of architectural education in ancient Rome is *De architectura libri decem* by Marcus Vitruvius Pollio. Although, like Virgil’s *Aeneid*, Vitruvius’s work can be looked at as selling Augustus-sponsored legislation whereby he ‘restored many traditions of our [Roman] ancestors which were falling into desuetude in our [Roman] generation’,⁷ it certainly contains material which is highly relevant to the architectural profession then and now.

Architecture, as perceived by Vitruvius, is the manifestation and representation of the arts in harmony:

‘Let him be educated, skilful with the pencil, instructed in geometry, know much history, have followed the philosophers with attention, understand music, have some knowledge of medicine, know the opinions of the jurists, and be acquainted with astronomy and the theory of the heavens.’⁸

Thus, an architect must have comprehension of all branches of knowledge. He has to be a man of letters as he has to leave lasting written records of his work. He needs to make sketches and hence he has to be a skilful draftsman. History is essential to the study of the evolution of ideas. To safeguard interests of employer and contractor and not to leave disputes to proprietor after completion of works, he needs to have knowledge of law. Music is required in order to ensure knowledge of mathematics. Knowledge of medicine is required to assess healthiness of sites with respect to climate and water supply, while astronomy is required to assess wind directions and placement of sundials. An architect needs to be high minded, rational, and upright and thus he must have studied philosophy. ‘No work can be rightly done without honesty and incorruptibility.’⁹

Vitruvius attaches great importance to general education as a basis for sound architectural knowledge. He argues that

‘men have no right to profess themselves architects hastily, without having climbed from boyhood the steps of these studies, and thus, nursed by the knowledge of many arts and sciences, having reached the heights of the holy ground of architecture.’¹⁰

Not all high ranking Roman officials acknowledged the significance of architectural education modelled on the Greek ideal of the liberal arts. The opposition of Roman senators to Greek education and its advocates, disintegrated by the time of the Republic. Roman emperors granted members of learned, artistic, and athletic professions allowances and legal privileges. They were exempt from tax and compulsory public service.¹¹ Professors of architecture and other disciplines were appointed by Alexander Severus to instruct students coming from the poor strata of society.¹² Diocletian’s edict of AD 301 stated that teachers of architecture, like those of arithmetic and reading, earned a higher wage per pupil per month although it was less than that earned by teachers of Greek, Latin, rhetoric and law.¹³ Literary talents and art were greatly encouraged by Vespasian.¹⁴ By his time, architecture as advocated in Vitruvius’s treatise, was widely accepted. The decline in architectural quality, skill and number of architects was also noted by Constantine who subsequently enacted an edict to this effect in AD 334. In Gibbon’s words:

‘The impatience of Constantine soon discovered that, in the decline of the arts, the skill as well as numbers of his architects bore a very unequal proportion to the greatness of his designs. The magistrates of the most distant provinces were therefore directed to institute schools, to appoint professors, and by hopes of reward and privileges, to engage in the study and practice of architecture a sufficient number of ingenious youths who had received a liberal education.’¹⁵

Public works and labour force

Under the Republic, prominent Roman citizens made good for the construction of public works. Augustus himself wanted this, and abided by

this tradition, by financing public works of note. He set a precedent for future emperors who, in turn, paid for numerous constructions and maintenance works. Projects included harbours, temples, markets, streets, colonnades, arches, and aqueducts.

In the post-Augustan era a large number of public works were constructed out of public funds. Some were actually funded directly by the central government. Essentially utilitarian, religious and civic public works were carried out on a massive scale. Such works were not only used as a symbol of the grandeur of the Empire but also to provide jobs for surplus labour. During the reign of Vespasian, a mechanical engineer working on public works intended to modify the mode of transporting heavy columns in order to minimize the labour required. While noting that such a labour-saving device would have resulted in cheaper transport costs, Vespasian refused to permit such cut in the labour force and thus declined the use of the cheaper, labour-saving transportation solution put forward. Vespasian declared 'you must allow me to feed my poor commons.'¹⁶

Labour on public works was either compulsory or hired. Criminals and slaves were the main catchment of compulsory labour. Cicero states that the ancient Capitol in Rome cost nothing in terms of wages for site workers because it was erected by compulsory labour. This was of two kinds - either forced or *opera* labour. The former was supplied by criminals while the latter by conscripted individuals. Compulsory labour continued to feature strongly even in the later Roman empire.

Damnatio ad opus publicum was one of the toughest legal punishments. This punishment incorporated condemnation for forced labour on public works. Such works ranged from servicing public baths and sewers, to major projects such as roads and public buildings. It was a punishment exclusively for men. Working on public works was arduous and shunned. Some criminals tried to escape and find alternative work as public slaves. Most criminals condemned *ad opus publicum* escaped from building sites of the main cities of the provinces and sought such alternative work. Pliny the Younger, while governing Bithynia, noted this and reported to Trajan who, in turn, 'ruled that they [criminals condemned *ad opus publicum*] must go back to

their original punishment, unless condemned more than ten years previously.'¹⁷

When the supply of criminals was short, free citizens had to donate a number of *opera* man-days, to work on public projects free of charge. Unlike forced labour by criminals, *opera* labour of free citizens was *per populum*. It was considered as a virtue and was highly respected. It was essentially being of service to the community of which the individual formed part. Besides the implicit financial remuneration which the town would be receiving from *opera* labour, there was also a nationalist collectivism on the part of the citizens to construct and actively involve themselves in the efficient building, maintenance and running of public projects.

Duncan-Jones cited the town charter of Urso in Spain as a case study illustrating this scenario.¹⁸ The town was short of criminals condemned *ad opus publicum* to supply the necessary workforce required for public works. The charter catered for the compulsory enlistment of free citizens and other inhabitants of the town for national service in local public building works. Any man aged between 14 and 60 years was obliged to give five *opera* of building labour per calendar year. Furthermore, owners of ox-teams had to make their oxen available to work at building sites. Ox-teams obligation was three rather than five *opera* per calendar year.¹⁹ Such an obligation was looked forward to rather than seen as an imposition. Patriotic motivations did occasionally run high. At Tibur, besides donating money for the erection of an amphitheatre, one free citizen also contributed two hundred *opera*.²⁰ Thus, although *prima facie*, compulsory labour by criminals and labour by conscription can be viewed as effectively similar because they ultimately carried out similar work, the labour supplied by each was clearly differentiated legally. The minimum specified number of *opera* that free citizens and inhabitants were obliged to donate as building labour was minimal when compared to that of criminals. Furthermore, forced labour was never acknowledged. If an inscription on a public monument acknowledges labour, then it was *opera* labour.²¹ Building contractors who were paid for undertaking construction works on public projects could still have made use of slaves as the main labour force.

Public and private funds for public buildings

Inscriptions on buildings stating the cost of works undertaken probably date to the period AD 98 to AD 244. Less than a quarter of these buildings are unambiguously dated.²² Construction costs available for works in Italy mainly relate to public baths. Only a few are available on temples. The scenario for Africa, where the number of temples with documented costs is nearly four times the number of temples in Italy, is different.²³ Thus, unlike Italy where such documentation is insufficient, a quantitative list is valid. Such a list covering buildings dating between the reigns of Trajan and Caracalla, was compiled by Duncan-Jones.²⁴ The data has been plotted in Fig. 1. Definite trends can be noted over this period. Between AD 98 to AD 217 towns were always financed by public and private funds. The proportionate amount of private funding decreased gradually with time.

Between AD 193 and AD 217 private and public funding were approximately of equal significance. Rich classes were flourishing but so were taxes on trade, public property, and *summae honorariae*, three possible sources of town cash resources according to Duncan-Jones.²⁵

Summae honorariae were a paramount factor. The marked increase over a century reflects the efficiency of Roman civic institutions in bringing about more widespread payment of *summae honorariae*.²⁶

Roman taxation was essentially indirect. It was based on *portoria* (custom duties) and special taxes as on the manumission of slaves. *Tributum*,

a direct tax, was levied only in case of war. The central Roman government controlled provincial towns from levying high taxes to prevent them from excessive spending on public works. Higher spending would lead to the payment of less tax to the central government. By the third century AD, 'taxation became technically efficient, but highly terribly oppressive. The final collapse of the West was largely due to the financial exhaustion of the taxpayer'.²⁷

Land and urban property belonging to towns varied with extent and time. Some towns had large estates and owned much land, while others had none. *Summae honorariae* by town magistrates also varied. *Summae honorariae* broadly reflected the wealth of the town. Variations may also be due to local demands.²⁸ *Summae honorariae* were often directed to public building works. Sometimes they are referred to as the most crucial source of revenue for the erection of public buildings: 'The town of Lanuvium records that public baths were enlarged and renewed using the *summae honorariae* which Septimus Severus had just allowed the town to levy on holders of priesthood.'²⁹ *Summae honorariae* were used to finance the town baths at Claudiopolis.³⁰

Town cash resources affected the extent of the building programme. Public buildings which depended on public revenue as the main source of funding were constructed over a period of time. Public revenue affected speed of construction in terms of both human and non-human resources available. Public works were not the towns' only expense. There were costs such as wages for public and civil officials which town budgets had to cater for.

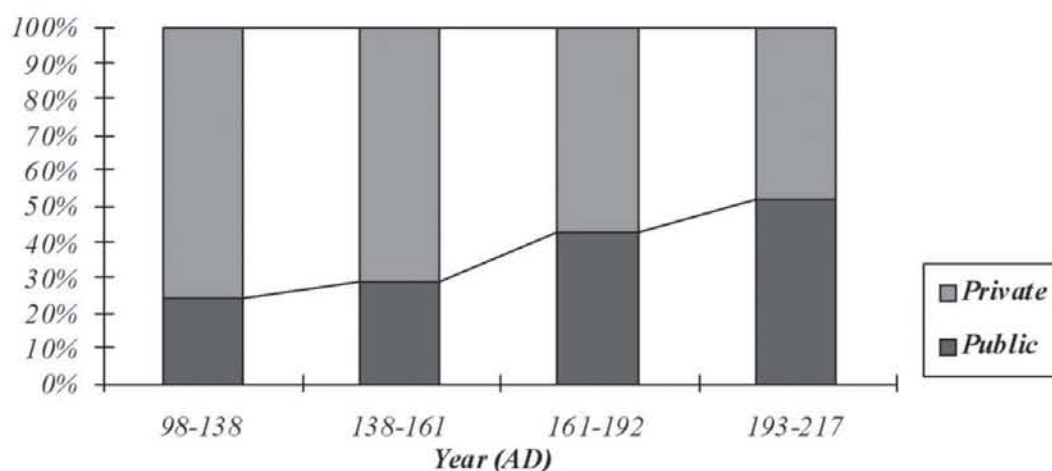


Fig. 1. Funding of dated towns in Africa (based on Duncan-Jones 1990, material from Thamugadi and Thugga excluded)

Between AD 30 and the death of Emperor Claudius in AD 54, one finds a number of generous free citizens who made good for the expenses of constructing, reconstructing, and restoring public works. During this period, although public works donated through private generosity were modest in size, there was a highly competitive unofficial spending. There were instances of such individuals funding buildings and donating them to the Republic. Gifts signify the presence of a class rich enough to make such donations. One ought to mention Postumius Chius and Licinius Tyrannus. The former, a patron of the administrative district of Thugga, assumed the expenses of a forum, the temple piazza, a shrine to Saturn, and an arch, while the latter restored a temple and built a temple to Ceres.³¹ Little information about costs of amphitheatres can be drawn from the numerous inscriptions on buildings. Duncan-Jones suggests that, as a rule, such structures were not built out of private funds because they were the most costly of all monuments.³²

Building inscriptions state that buildings were financed either by private or public funds or a combination of both. Inscriptions on monuments known through classical works to have been built through private generosity, do not have any reference to the community as a donor, in full or part, of funds for their erection. Absence of public funds for public works may be due either to the generosity of well-off free citizens, who would have made good for the funding required, or to the lack of sources of revenue. The donation of monuments by free citizens was not only an act of generosity but an honour to the donor.³³

Thamugadi, in eastern Algeria, and Thugga, in northern Tunisia, are two interesting African Roman towns. Their building histories are respectively illustrative of towns built out of public and private monies. They are exceptions rather than the rule because they lie on either side of the spectrum.

Thamugadi, a Roman colonia, is essentially a public-funded town. Out of the nineteen existing dated buildings erected during the period from Trajan to Caracalla, only two were privately funded.³⁴ As a town, it is larger than Thugga. It had land and urban property and a system of *summae honorariae*. Thus, town cash resources were high and hence could

easily finance public buildings of any required magnitude.

Buildings in Thugga, unlike Thamugadi, were mainly privately funded. It lacked proper public institutions for most of the time. Official sources of revenue were low. *Summae honorariae* were low and the system of public offices was not so well developed until the town was granted municipal status by the end of the second century AD. After it had obtained such status, private benefactors still paid for public monuments. Duncan-Jones puts forward two possible reasons for this.³⁵ Firstly, private generosity became so rooted in the higher strata of Thugga society that they did not want the town's public building programme to be exclusively in the hands of public officials and at the mercy of public revenue. Secondly, public revenue may have been on the low side and thus the town would not have afforded public buildings of note. This may have induced the affluent members of society to contribute financially to a better built environment than that possible through public funds. Duncan-Jones notes that 'the building history of Thugga certainly demonstrates to a remarkable degree the powers of a small community to attract wealthy benefactors.'³⁶

Public administration and architects' professional ethics in public works

'Monuments are supposed to commemorate kings and religion, heroes, dogmas, but in the end the man they commemorate is the builder.'³⁷ Monumental architecture in tribute to rulers, gods, and the like, is essentially a tribute to the authors, the builders. Trajan's stone bridge over the Danube is a tribute not just to Trajan, whom Dio Cassius could not sufficiently admire for the ingenuity of the bridge, but also to Apollodorus, its Syrian architect.³⁸

To decentralize public administration and allow more participation by free citizens in its running, Augustus created new posts such as supervisors of public buildings and of public infrastructural works. The architect was checked by a board member regulating expenses who was sometimes a high ranking official within the army. A senator or an officer of the province in which the work was being carried out would

have checked the architect.³⁹ Approval of building works by these officials removed any liability, criminal or otherwise, by either the architect, or the contractor, regarding inherent defects in the building.⁴⁰ Official corruption, bribes, and clientelism were seriously undermining the ethical conduct of the empire at the time of Constantine. The Emperor was well aware of the urgent need to restore ethical behaviour and official discipline. In the early fourth century AD the *Theodosian Code* was mainly addressed to complement his efforts to eradicate official corruption. In terms of the Code, severe punishment was being stipulated for those who contravened official orders. In the Code, reference is made to the fraudulent admixture of impure dye used in the weaving industry.⁴¹ The Code states that

‘procurators shall abstain from the patronage whereby they obtain the aforementioned administrative positions, or, if they contravene this order, they shall be removed from the number of Roman citizens and beheaded.’⁴²

There is no similar legislation with respect to architects. No literature dealing with the fraudulent gains of architects or master builders is available. It is very likely that fraudulent gains were made by people who controlled the money and/or by the surveyors. In major projects, where the amount of money involved is substantial, job descriptions were assigned to other professions not to architects. Columella suggested that ‘architects scorn to cost buildings for themselves, and leave this to separate cost-surveyors who base their calculations on the dimensions of the complete building’.⁴³ Thus, in such a context, unlawful money gain by architects is unlikely. One may further look at the manner in which commissions to erect public buildings were given to architects and, with respect to the official and social accepted norms of the time, look at and analyze behavioural patterns and interaction between architect and client or his representative. The practice of awarding building contracts by competitive tendering was widespread in Rome by the time of the late Republic.⁴⁴

Although literature is limited with regard to architects’ ethics, the following quote from

Vitruvius hints at unethical behaviour typical of some architects operating in his time:

‘Other architects go about and ask for opportunities to practise their profession; but I have been taught by my instructors that it is the proper thing to undertake a charge only after being asked, and not to ask for it; since a gentleman will blush with shame at petitioning for a thing that arouses suspicion.’⁴⁵

Unethical behaviour was common with architects working on private rather than public building works:

‘Would to God that this were also a law of the Roman people, not merely for public, but also for private buildings. For the ignorant would no longer run riot with impunity, but men who are well qualified by an exact scientific training would unquestionably adopt the profession of architecture. Gentlemen would not be misled into limitless and prodigal expenditure, even to ejectments from their estates, and the architects could be forced, by fear of the penalty, to be more careful in calculating and stating the limit of expense, so that gentlemen would procure their buildings for that which they had expected, or by adding only a little more.’⁴⁶

In Vitruvius’s time, such unethical behaviour was typical of the ‘uneducated and the unskilful’ architects.⁴⁷ The status of the architectural profession increased in the later days of the Empire.⁴⁸

With increased architectural education came the rise in status of the architectural profession in the Roman Empire. By the fourth century AD, the Vitruvian ideal was the official Roman ideal. Architecture was more of a vocation than a practice for earning money. As members of the liberal profession, architects received an *honorarium* and not a wage.⁴⁹ Public buildings were built through a combination of forced labour and public and private funds. Labour was *free* because it was compulsory. It was the result of either punishment or conscription. Contractors paid to carry out public building works would mainly have made use of such a work force. Although both public and private funds were used at any point between AD 98 and AD 217, the proportion of public to private funds increased with time.

Notes

- 1 P. Devambez, 'Architecture' in F. Hazan (ed.), *A Dictionary of Ancient Greek Civilization*, (London. Methuen & Co. Ltd, 1967), 49.
- 2 Ibid.
- 3 *The Dictionary of Architecture* issued by the Architectural Publication Society, Vol. I, (London. T. Richards, 1892), 88.
- 4 M. Vitruvius, *De architectura libri decem*, translated by Morris Hicky Morgan (Cambridge. Harvard University Press, 1914), i, 1, para 2.
- 5 Both Vitruvius and Cicero (*De Officiis*, I, 42) held that architects should be men of good birth. Plutarch (*Crassus*, II) states that there were freed slaves who were architects. Evidence from various sources confirms that architects came from different social strata (M.S. Briggs, *The Architect in History*, Oxford. Clarendon Press, 1927, 35).
- 6 G.T. Rivoira, *Roman Architecture*, (Oxford. Clarendon Press, 1925), 86.
- 7 Quote from *Corpus Inscriptionum Latinarum*, Vol. III, in N. Lewis and M. Reinhold (eds.), *Roman Civilization Sourcebook II : The Empire*, (New York. Harper & Row, 1955), 12.
- 8 Vitruvius, i, 1, para.3.
- 9 Ibid., para.7.
- 10 Ibid., para.11.
- 11 Lewis and Reinhold, 294.
- 12 A. Lampridius, *Alexandri Severi Vita*, in Briggs, 32.
- 13 Ibid.
- 14 Suetonius, *Life of Vespasian*, xvii-xviii.
- 15 E. Gibbon, *The Decline and Fall of the Roman Empire*, (London. John Murray, 1896).
- 16 Suetonius, xviii.
- 17 R. Duncan-Jones, *Structure and Scale in the Roman Economy*, (Cambridge. Cambridge University Press, 1990), 174.
- 18 Ibid., 174.
- 19 H. Dessau, *Inscriptiones Latinae Selectae* (Berlin. ILS, 1892-1916), 6087 and 6098, in Duncan-Jones, 175.
- 20 H. Dessau, 5630, in Duncan-Jones, 1990, 175, footnote.
- 21 Duncan-Jones, 1990, 175.
- 22 R. Duncan-Jones, *The Economy of the Roman Empire*, (Cambridge. Cambridge University Press, 1982), 64-65.
- 23 Ibid., 124.
- 24 Duncan-Jones, 1990, 184, for table re financing of dated town buildings in Africa.
- 25 Ibid., 175-176. *Summae honorariae* are the specific amounts of money which magistrates, priests, and councillors were expected to contribute in virtue of their office. Most evidence of *summae honorariae* paid in North Africa belongs to the second and third century. For discussions re *summae honorariae* in these provinces and in Italy, see Duncan-Jones, 1982, 82-88 and 147-155.
- 26 Duncan-Jones, 1990, 184.
- 27 H. Mattingly, 'Roman Finance', in F. Cary, J.D. Denniston, J. Wright Duff, A.D. Nock, W.D. Ross, H.H. Scullard (eds.), *The Oxford Classical Dictionary*, (Oxford. Clarendon Press, 1949), 363. The devaluation of currency in the third century AD led to economic turmoil in the Roman world. Inflation increased and cash levies were replaced by *annona*, the levy in kind.
- 28 Duncan-Jones, 1982, 84.
- 29 Id., 1990, 177.
- 30 Id., 1982, 84.
- 31 R. Cagnat, A. Merlin, and L. Chatelin, *Inscriptions Latines D'Afrique*, (Paris. Leroux, 1923), 558, and *L'Année épigraphique: Revue de publications épigraphiques relatives à l'antiquité romaine*, (Paris. Presses Universitaires de France, 1969-70), 651 and 648, in Duncan-Jones, 1990, 179.
- 32 Duncan-Jones, 1982, 75.
- 33 Honour was a significant anthropological notion within the Roman social context. A number of African magistrates 'made public gifts in honour of their tenure of local office, and saw that the details (sometimes including the cost) were inscribed on a monument. There were contexts in which the publication of such details was a legal requirement'. (Ibid., 64).
- 34 R. Romanelli, *Storia delle Province Romane dell'Africa*, (Rome. L'Erma di Bretschneider, 1959).
- 35 Duncan-Jones, 1990, 181.
- 36 Ibid., 182.
- 37 J. Bronowski, *The Ascent of Man*, (London. British Broadcasting Corporation, 1973), 72.
- 38 Dio Cassius, *Roman History*, in Lewis and Reinhold, 114.
- 39 *The Dictionary of Architecture*, Vol. I, 88.
- 40 Briggs, 46.
- 41 *Theodosian Code*, I. XXII. 1, in Lewis and Reinhold, 485.
- 42 Ibid.
- 43 Duncan-Jones, 1982, 76.
- 44 Ibid., 75-76.
- 45 Vitruvius, VI, Introduction, para. 5.
- 46 Ibid., X, Introduction, para. 2. Vitruvius states further that 'It is true that men who can afford to devote four hundred thousand to a work may hold on, if they have to add another hundred thousand, from the pleasure which the hope of finishing it gives them; but if they are loaded with a fifty per cent increase, or with an even greater expense, they lose hope, sacrifice what they have already spent and are compelled to leave off, broken in fortune and in spirit'
- 47 Ibid., VI, Introduction, para. 6.
- 48 Briggs, 35.
- 49 Ibid., 46.