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EDITORIAL

As you will see from the table of Contents, the Baths Bibliography for this year is the largest yet, a further indication - if we needed it - that bath studies are continuing to thrive. Our heartfelt thanks are due to Hubertus Manderscheid for his herculean labour in compiling the bibliography. I hope all of you will respond to his request for further information, especially of publications which are not likely to reach the German Archaeological Institute library in Rome. We see the bibliography as an essential tool in furthering the aims of the Association, and one to which we all can contribute just all we all benefit from it.

The interest in ancient baths was also apparent at the Joint Colloquium on Roman Baths and Bathing Practices held at the Archaeological Institute of America/American Philological Association Annual Meeting in San Diego, in which I had the pleasure in participating. The mixed audience of archaeologists, ancient historians, and those with just a general curiosity about the subject, were very enthusiastic about the session as a whole, and there was a lively discussion afterwards which crossed and recrossed disciplinary boundaries. Jane Biers, one of our representatives for the United States, said a few words about the Association at the close of the session, and enrolled two new members on the spot! See p. 5 for her summary of the papers presented at the session.

One of the most impressive aspects of the session was the sheer range covered by the papers, something we were conscious of also at the First International Conference on Roman Baths. The interdisciplinary nature of bath studies is one of its most exciting and vital aspects, and one which the

Association is keen on promoting. Looking back over the six issues of *Balnearia* to date, however, I am struck by the predominance of site reports and articles on technology among the tables of contents. These are always going to be important areas for us, but I would like to put in a plea to the historians amongst you for more contributions to reflect the whole range of interests which the newsletter should be covering. Any volunteers?

The next issue of *Balnearia* will, I hope, include a full report on the Second International Conference on Ancient Baths, to be held in Varna (Bulgaria) in late April. I shall be attending along with other members of the Committee, and I hope to meet some of you there. The venue is exotic, the programme is shaping up nicely - don't miss it!

Finally, a warning/reminder that subscriptions for 1996/1997 fall due this spring. Reminder notices will be sent out by Regional Representatives soon; the deadline is the end of May.

CONTENTS

Editorial	1
Economics of Public Baths	2-4
Greek Baths	4
AIA/APA Colloquium	5
Mosaic Decoration in the Maghreb	6
Baths and Bathing in Classical Antiquity revisited	6
Baths Bibliography	7-12

Economics of Public Baths

In this note I shall seek to show (1) that the price of one quadrans, charged to adult males at public baths in Italy during the first century BC and the first two centuries A.D., was expected to cover the running costs of the baths, and presupposed attendances of several hundred bathers per day, and (2) that the consumption of hot water was consequently large, and effectively determined the fuel consumption, especially in summer. I shall also seek to show the value of accurate estimates of the fuel consumption of ancient baths, if they can be achieved.

Running costs

The running costs for a baths in Italy are indicated by an inscription from Altinum in Venetia at some time after 100 A.D.¹ A sum of HS 400,000 was bequeathed so that the income should provide free fuel for two sets of baths, together with HS 200,000, the income from which should cover *tutela*. That literally means 'care-taking' or, in the modern jargon, 'security', but probably covers all the services provided by the staff of the baths. Duncan-Jones² suggests that the income for each set of baths would be HS 12,000 per annum for the fuel and HS 6,000 for staff.

(a) Fuel costs

The annual allowance for fuel can be compared with a donation at Iden in Andalusia, which endowed a baths with coppice covering 150 iugera to provide fuel.³ Columella⁴ put the the maximum return to a landowner from coppice at HS 100 p.a. but it is clear that his main profit came from vine-poles. A modern study of woodland economics⁵ suggests that in areas where coppicing is profitable, only the poorest third of the crop will be sold for firewood, and that the price per unit weight will be about 54% of the average for the whole crop. Assuming that Columella's highest returns came from a high yielding hardwood, producing about 2 cartloads per iugerum,⁶ he should, on this calculation, have received about HS 27 per cartload for that part of the crop sold for firewood. The most valuable firewood would be that incurring the lowest cost for transport, say one day's pay for the carters at HS 6 per load.⁷ In that case the HS 12,000 allowed at Altinum would pay for $f(12000/27 + 6) = 364$ cartloads, the product of about 180 iugera and about 140 tonnes. That in turn may be compared with a bequest of an annual 400 cartloads of hardwood, equal to 160 tonnes, for the heating of public baths at Misenum.⁸

(b) Service costs

The allowance for *tutela* can be tested against labour costs. The average cost of maintaining a slave seems to have been HS 40 per month, say HS 500 p.a.⁹ The grant at Altinum would therefore have been equivalent to the cost of employing 12 slaves at each baths, implying that the manager would actually employ between 6 and 8 slaves, which seems reasonable for the day-to-day running. Maintenance and repair of the building is not mentioned in the manager's contract at the Vipascum mines,¹⁰ and were presumably the responsibility of the landlord.

Income

The estimated value of each of the grants at Altinum therefore fits what is known from other sources about the running of the baths. Evidence that expenditure of that size could be supported from the fees charged for the use of a public baths, is given by an inscription at Bononia.¹¹ Around the middle of the 1st century A.D. a large baths, which had been presented to the city by Augustus and refurbished by Germanicus, was given HS 400,000 so that in perpetuity 'men, and children (*impuberes*) of either sex, may bathe free of charge.' The sum is larger by one third than the average given to the baths at Altinum, which may well be because the installation itself was larger. It is a fair inference that the income, presumably intended to be HS 24,000 per year, replaced fees previously collected.

Number of users

This grant provides an indication of the number of users of the baths. If the baths were closed on only 12 days in the year, as specified in the contract with the baths manager at Vipascum, and if on all other days they were open for six hours, the mean income per working day would be HS 24,000/353 = HS 68, and the mean income per working hour HS 68/6 = HS 11¹/₃. Allowing for fluctuations, the income in a peak hour on a peak day might be about double that - say HS 24. Since all the bathers covered by the grant were either men or children who presumably paid a low fee, they may previously have paid the traditional male fee of one quadrans. In that case the average hourly attendance would be 113, and the peak rate 240. However, since the low price and its restriction among adults to males had become a standing joke, which in principle could (like the English euphemism 'spending a penny') outlive the circumstances which gave rise to it, we should consider the possibility that the fee had been raised. The minimum increase would be to half an *as*, a fee paid at Vipascum by non-members of the mine staff.

The issue can be focussed by considering the number of seats in the tub (*alveus*) and the circumference of the basin (*labrum*). The length of the women's tub at the Stabian baths is 4.10 m = 13³/₄ (Roman) feet, while the the circumference of the basin is 5.65 m = 19 feet. The length of the men's tub has been estimated at 5.54 = 18¹/₂ feet.¹² Maiuri¹³ considered that the men's tub would accommodate 10 bathers and the women's 8, and that places were allotted by tickets obtained on entry to the baths. However both metrology and the experience of a more democratic age suggest closer packing. Vitruvius¹⁴ tells us that at peak times bathers had to wait to wash at the basin, and it is probable that the constriction there controlled the flow of bathers through the sequence, just as constriction at the food-counter controls the flow of diners in a cafeteria. (It is much harder to hurry a fellow-bather who is washing than one who is soaking in the tub.) At peak times a space of 2 feet at the basin, and 1¹/₂ feet in the tub - similar to the space in a 2nd class train - would allow 9 places in the women's tub and 12 in the men's. The Bononia bath

will have been at least as large as the men's section of the Stabians. Indeed, the baths at Altinum are unlikely to have been as small as the women's baths in Pompeii, and could themselves have been as large as the men's baths there, in which case we should expect the Bononia baths to have had up to 16 seats. So, if the entry fee at Bononia had previously been one quadrans, the grant corresponded to a mean rate of occupation per seat, or per place at the basin,

mean occupation per seat = between $f(113,12) = 9.4$ and $f(113,16) = 7.1$ persons per hour
and a peak rate

peak rate, between $f(240,12) = 20$ and $f(240,16) = 15$ persons per hour.

In that case, at a peak hour on a peak day (if the closing hours were rigidly enforced) the bather might be expected to spend only three or four minutes washing, and a similar amount of time in the tub. Normally things would be easier and he would have some 6 to 8 minutes for each phase. If we double the fee, we halve our estimate of the number of bathers and so double the amount of time allotted to each. That option was presumably preferred by those who could afford it, but the lack of dignity at the baths from which Horace's Stoic emerged *quadrante lavatus*¹⁵ suggests that there could be a certain amount of pushing, and at Bononia it seems unlikely that a donor would have wished to risk the crowding which would follow from remitting all payment if the baths had previously had the low attendances implied by a higher fee.

It therefore seems likely that public baths were still charging males a single quadrans, and that average daily attendances at Bologna were about 680 and at Altinum about 470.

Water Consumption

If several hundred bathers used the tub each day, the consumption of hot water must have been quite large. The tub needed to be emptied and cleaned every night. The Vipascum contract does not bother to mention that, though it does insist that the boilers be cleaned internally once a month, and that water be kept running into both the basin and the tub while the baths are open; it also specifies the level in the tub. Since the men's baths were about 1.8 m broad and probably filled to a depth of about 0.45 m, each 0.45 m 'place' would contain a volume of water about 0.36 m³. Running water into the basin and tub for six hours, perhaps at much the same rate (in total) as that required to fill the tub, would raise the consumption per place to perhaps 0.7 or 1.0 m³. Thus a fairly conservative estimate for the water consumption of a 12-place bath would be in the region of 10m³, at c. 40°C.

Fuel consumption

If the temperature of the incoming water was 12°, the increase in energy in raising 10 m³ to 42° would be Energy gain = $10(40 - 12) = 280 \text{ Mcal} = 1167 \text{ MJ}$.

In order to transfer that amount of energy to the water, it would of course be necessary to burn fuel containing considerably more energy than that. In

fact the water heating, considered in isolation, was necessarily inefficient, because the temperature in the furnace had to be kept fairly low in order to avoid condensation in the hypocaust system. One would guess that the efficiency would be between 20 and 30%, so that between 3,000 and 5,000 MJ would be required, equivalent to the burning of between 215 and 357 kg of firewood per day, assuming an energy content in the wood of 14 MJ/kg. For comparison, the purchase of 140 tonnes of firewood, estimated above as the fuel provision at Altinum for a year of 353 working days, would supply an average of

average fuel provision = $f(140 \times 1000, 393) = 397$ kg per working day.

For three seasons in the year, nearly all the remainder of the energy from the wood would be used productively in heating the building - indeed in the depth of winter, especially in cold climates, some extra fuel would probably be needed to maintain the room temperatures at the usual level. However in summer, especially in hot climates, the rooms would tend to be overheated. Although there would be some reduction in the fuel requirement for water heating because of a rise in the temperature of the incoming water, the reduction would be much smaller than the corresponding reduction in the requirement for room-heating, because the water was heated to a higher temperature than the rooms. The result of this imbalance would be that the baths would burn slightly more fuel than would have been needed to heat the water alone and very considerably more - perhaps 35 to 50% - than would have been needed to heat the rooms alone.

Conclusion

Environmentally, a difference of around 40% in what was only one component of Roman fuel consumption is hardly important. But for an understanding of the development of the baths, their technology and economics, an accurate estimate of the fuel consumption of a baths of given capacity could be very valuable, for the following reason. It has been shown above that, in order to earn an income equivalent to the interest from the grants at Bononia and Altinum, each bath would need to be fairly heavily used, and also that a large, and perhaps a standard, proportion of the income was expected to be spent on fuel. How had this relationship between fuel purchase and attendance come about, and how was it maintained as the baths developed? If we could make a reasonably precise estimate of the consumption of a men's baths of the size of the Stabian's, we might be able to decide between two alternatives of which one is much more interesting than the other. The uninteresting explanation would be that the amount of fuel required for the baths was fairly small in relation to the amount of money raised from the fees, so that the fixed proportion merely meant that contracts to provide firewood for public baths were fairly lucrative. If, on the other hand, the amount of fuel required was large enough to imply that the price paid for the fuel was fairly competitive, in comparison with Columella's expectations, then the coinci-

dence between the income of the baths and its expenditure on fuel, together with the long-lasting stability of the price of entry, looks like the result of careful planning. It might suggest that when an architect was commissioned to design a baths for a given number of bathers, as Vitruvius¹⁶ tells us he would be, it was understood that the baths would be capable of being run from the fee income generated. In that case the constraint of a standard fuel consumption per bather would seem to have underlain, and to some extent even directed, the architectural development of the baths - perhaps from an early period. There would have been competition to make baths more and more luxurious without increasing the running costs. In the modern world that would not be an unusual use of technology; it is the rationale of mass-production: but in the ancient world it is generally, though not necessarily rightly, thought to have been very rare.

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Notes

1. NS 1928 283
2. R.Duncan-Jones, *The Economy of the Roman Empire: Quantitative Studies*, 2nd Ed. Cambridge 1982.
3. ILS 5688 = CIL 3361. Hübner notes that Accursius reports them to have been 'non exigua' (CIL II 452).
4. Cf. Columella, *de R.R.* 3.3.3. "... Prata pascua et silvae si centenos sestertios in singula iugera efficient, optime domino consulere videantur."
5. P.T.Maw, *The Practice of Forestry*, (London and Leipzig) 1912.
6. Maw gives yields for coppiced woodland (timber down to 2 inches (50 mm) diameter) as follows. Ash and chestnut, 50 to 70 cubic feet per acre, oak 35 to 55 cubic feet per acre. Assuming a density of 0.66, the figures for chestnut and ash are equivalent to 2.3 to 3.5 tonnes per hectare = 0.57 to 0.87 tonnes per iugerum, those for oak are equivalent to 1.6 to 2.5 t/ha (0.4 to 0.62 t/iug.). Diocletian's *Edict* 14.8 reckons that a cartload of firewood weighs 12000 litrae = 390 kg.
7. Cato (*De R.R.* 22.4) paid HS 4 per team per day but prices had risen by about 50% in Columella's time.
8. CIL X 3687 = ILS 5689
9. Seneca (*Ep.* 80.7) quotes 5 modii of wheat plus 5 denarii. It is generally accepted that rations constituted half the emolument of a slave, as they do for the workmen in the *Edict*.
10. ILS 6891
11. ILS 5674.
12. For these and other measurements of the Stabians cf. H.Eschebach *Die Stabianer Thermen in Pompeji* (Berlin 1979) 8-26.
13. *Pompeii its Life and Art* (New York 1899).
14. 5.10.4.
15. *Ep.* I.3.137.
16. "Magnitudines autem balneorum videntur fieri pro copia hominum." 5.10.4.

Dissertation zum Thema "Griechische Bäder"

Die Dissertation befaßt sich mit griechischen Bädern von ihren Anfängen, die in den Palastbädern aus mykenisch-minoischer Zeit zu sehen sind, bis zu ihrem Aufgehen in römischen Badeanlagen.

Es werden drei Haupttypen unterschieden:

- Badeanlagen als eigenständige Einrichtungen zu

denen auch Baderäume in Gymnasien und Palästreng gezählt werden,

- Palastbäder

- Bäder in näherem Bezug zu Heiligtümern.

Dabei ergibt sich die Problematik der Definition von Öffentlichkeit, die diskutiert wird.

Palastbäder sind aus der Frühzeit überliefert und konnten von den Herrschern, ihrem "Hofstaat" und ihren Gästen aufgesucht werden. Bäder an Heiligtumsterrassen wie in Ägina oder Troizen gaben Bademöglichkeit für die Priesterschaft und Gäste. Da es sich bei diesen Bädern immer um kleine Anlagen handelt, machen diese Typen einen breiteren Zugang der Öffentlichkeit unwahrscheinlich.

Im Katalog sind 56 Badeanlagen aufgeführt. Es wird versucht, eine chronologische Entwicklung der Badeanlagen anhand des Baubefundes aufzuweisen, die aber vor allem in hellenistischer Zeit durch das gleichzeitige Vorkommen verschiedener Typen schwierig wird.

Das Auftreten besonderer Charakteristika von Badeanlagen wie Rundbauten oder Heizanlagen wird sorgfältig verfolgt. Die Rundbauten gliedern sich in Räume, die auf eine Benutzung als Schwitzbad hinweisen, und in Rotunden, in den Sitzbadewannen platzsparend eingebaut werden konnten. Waren sie gleichzeitig mit einer z.B. transportablen Heizquelle kombiniert, so erwies sich die runde, mit Kuppelgewölbe gedeckte Form als thermodynamisch besonders günstig. Die Heizanlagen zeigen verschiedene Formen. Als versenkte Heizschächte können sie zum Erwärmen von Wassergefäßen gedient haben und damit nicht speziell zur Raumerwärmung vorgesehen gewesen sein, als Hypokaust mit Verdoppelung des Bodens den Raum erwärmt haben. Die erste Art erscheint häufig in Sizilien (Megara Hyblaia, Gela, Syrakus), so sie vielleicht auch ihren Ursprung hat. Ob sich daraus über den Zwischenschritt des rechteckigen, beheizten Raums (Megara Hyblaia, Raum h) oder **eigenständig** hypokaustierte Räume entwickelten (wie es schon für Thera im 5 Jh. v. Chr. vermutet wird), ist unklar.

Ausführlich werden die Vor- und Nachteile der jeweiligen Anordnung von Badewannen in rechteckigen oder runden Räumen besprochen. Dabei kommt auch die Möglichkeit medizinischer Bäder zur Sprache. Rätsel geben immer wieder Badeanlagen mit zwei Rundbauten auf, die schon früh zur Interpretation als Frauen- und Männerbäder geführt haben. Daß auch andere Erklärungen möglich sind, wird diskutiert. In der Arbeit werden auch Schwimmbäder aufgeführt, bei denen körperliche Reinigung mit Bewegungsmöglichkeit kombiniert wurde.

Eine Sammlung von Zitaten antiker Autoren stützt die Vorstellungen über Baden im antiken Griechenland.

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Archaeological Institute of America\American Philological Association Joint Colloquium on Roman Baths

The panel, Roman Baths and Bathing Culture, announced in *Balnearia* 3:1 and organised by Garrett G. Fagan of the University of British Columbia, took place, as planned, at the 97th AIA\APA Annual Meeting in San Diego on Saturday December 30, 1995. A number of current issues were addressed, and new ideas presented. Fikret Yegül, University of California, Santa Barbara, presided, opening the session with a discussion of the use of space in second-century and later baths. As his starting point, he took the early-fourth century villa baths of Pompeianus at Oud Athmenia in modern Algeria. The plan of these baths is unique in its perplexing use of space with overlapping axes, open and closed areas, and pool contained within a larger pool. Yegül pointed out that the unusual use of space was associated with the frigidarium, and that frigidaria of earlier baths, such as the second-century baths at Isthmia, near Corinth, and the baths at Epidauros, were often linked to noncanonical spaces. This system carried over into later baths, as late as the Umayyad period in the east, from where come stories about the pleasures of using such spaces.

Yegül was followed by Janet DeLaine, University of Reading. Her paper, "A 'Blueprint' for the Imperial Thermae?," identified use of the same design process in the imperial thermae in Rome and raised the possibility that a note-book or sketch-book, a *commentarius*, existed, available only to the architects of the imperial thermae. This would explain the basic typological similarities between the Baths of Trajan, Caracalla, (Nero) Severus Alexander, and Diocletian. DeLaine has worked out a simple process that applies to all these baths, based on the square root of two. The three main rooms of these imperial thermae—frigidarium, tepidarium, and caldarium—can be shown to be related in plan through one basic dimension, a central 200-foot square. The unknown architect of the Baths of Trajan may have been responsible for the creation of the "blueprint." Perhaps he also began the system of placing the frigidarium at the center of the design and of defining its width using the diagonals. The flexibility of the system apparently followed by the later imperial bath architects allowed them to design individual buildings, while at the same time adhering to a narrow typological scheme.

A. Trevor Hodge, Carleton University, presented a paper on aqueducts, "'Water, Water, Everywhere, and Not a Drop to Drink': The Hydraulics of Roman Baths." He maintained that the primary purpose in building an aqueduct was to supply water for baths, rather than to provide clean drinking water. In addressing one of the most difficult questions about aqueducts—how the water was apportioned—Hodge cited recent work at Pompeii that proves the triple *castellum divisorium* described by Vitruvius did not exist there; evidence of its use elsewhere has not been

found. Instead, water was probably supplied to baths and other users for an appointed number of hours. Hodge's work on aqueducts will appear in the April issue of the *American Journal of Archaeology*.

Christopher J. Simpson, Wilfrid Laurier University, and Nadine Brundrett, McMaster University, presented "Innovation and the Baths of Agrippa; an Exaggerated Claim?" (read by Simpson). The paper challenged the accepted tradition that the Baths of Agrippa were the first public baths in Rome, citing Republican literary sources. Perhaps the Baths of Agrippa were innovative in other ways, possibly in their form of decoration. Simpson and Brundrett rejected the theory that a laconicum in these baths was used for physical exercise and concluded that the Baths of Agrippa were important not as the first public baths, but as a part of the evolution of public bathing which began under the Republic.

Christer Bruun, University of Toronto, based his paper, "Roman Lead-pipe Stamps and Owners and Donors of Public Baths in Campania," on both epigraphical and archaeological evidence from southern Latium and Campania. He discussed some of the many unresolved questions concerning privately owned baths that were open to the public for a fee (*balnea meritoria*), in particular what class of people owned them. The names of private individuals, often stamped in the genitive on lead water pipes (*fistulae*) that fed the baths, cannot be names of makers of pipes (*plumbarii*), which are almost always given in the nominative. Rather, these are names of owners of baths or names of public benefactors, donors of baths.

The final paper in the session, "The Roman Elite at the Public Baths," delivered by Garrett G. Fagan, disputed the theory that baths worked as social levellers. Numerous literary references show that slaves, senators and equites all bathed together. The sources also reveal, however, that, by ostentatious display at the baths (number of attendants, expensive paraphernalia, numerous changes of clothes, wearing of jewelry, etc.), the wealthy exhibited their rank and privileged status and set themselves off from the general populace.

A brief discussion followed the presentation of papers, with a number of questions asked about the attitude of the Early Christians towards communal bathing. It was agreed that at least in the early periods these were not as adverse as is sometimes thought. Hodge also pointed out that modern attitudes towards nudity and bodily functions differ markedly from those of antiquity. The identification of a similar design process in ancient theatres to that discussed for the thermae by DeLaine prompted discussion about the social stratification in baths compared to theatres, although it was agreed that this was much harder to identify where the participants were moving around. The presence of the emperor at the thermae was also hotly debated.

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Aspekte der Mosaikausstattung in Thermen und Badeanlagen des Maghreb

Ausgangspunkt der 1991 begonnenen Dissertation mit dem Titel "Aspekte der Mosaikausstattung in Thermen und Badeanlagen des Maghreb" bilden die öffentlichen und privaten Badeanlagen der römischen Epoche auf dem Gebiet des heutigen Maghreb - von Marokko über Algerien und Tunesien bis nach Libyen.

Den eigentlichen Anstoß zu dieser Untersuchung ergab die 1990 abgeschlossene leider unpublizierte Magisterarbeit, "Versuch einer typologischen Einordnung antiker Badeanlagen in Ägypten", wo neben archäologischen Resten v.a. die epigraphischen Quellen (griechische Papyri), die Wasserversorgung und die Ausstattung der Thermen mit Skulpturen, Wandmalereien und Mosaiken zur Sprache kamen. Die damals gewonnenen Ergebnisse sowie einige Reisen ins heutige Algerien und Tunesien lieferten danach den Anstoß zur Ausführung der o.g. Dissertation.

Der eigentlich wichtigste Teil der Dissertation bestand in der Erfassung und Erstellung eines Mosaikkatalogs und dem Aussuchen geeigneter Stücke, da nicht jedes Thermentesselat in den geplanten Katalog aufgenommen werden konnte. Von besonderer Bedeutung waren zunächst nur solche, die einen Bildschmuck besaßen und nicht geometrischer Natur waren. Dementsprechend konnte von vornherein beachtlicher Teil an Tesselaten mit geometrischer Dekor aussortiert werden. Übrig blieben nur Mosaiktesselate mit Thermen aus dem Bereich der Mythologie, des Sports (der gymnischen Agone), des Circus und Amphitheaters sowie wasserbezogene Szenen von den einfachsten Meerestieren über reale genrehafte Fischerszenen bis hin zu verschiedenen Meeressgottheiten mit ihrem Gefolge, sog. Meeresthiasoi.

Mosaiken dienen in erster Linie der dekorativen Abdeckung einer beliebigen Oberfläche. Sie können entweder als mono- oder bichrome Tesselate oder als polychrome Mosaik mit üppiger Ornamentik und reichem Dekor auftreten. Aufnahme in den Katalog fanden v.a. Boden- und Piscinenmosaik, die sich natürlich besser erhalten haben als die oft nur in Fragmenten erhaltenen Wand- und Gewölbemosaik. Die Ausschmückung mit genannten Bodenmosaik war nicht nur auf die Haupträume bzw. Hauptsäle Frigidarium - Tepidarium - Caldarium beschränkt. Ein Badegast konnte ebenso, wenn auch viel seltener, einen schön mit Mosaiken verzierten Eingang, einen Nebenraum oder einfache Schwellen bei seinem Baderundgang beschreiten, auch wenn das Frigidarium und das Apodyterium bevorzugte Räume zur Verlegung eines dekorativen Tesselats waren. Bei der Untersuchung hat sich gezeigt, daß gerade in diesen beiden Räumen ganz bestimmte Motive in den verschiedensten Thermen und Bädern immer wieder auftreten, und man so auch ein nicht in situ gefundenes Mosaik, das heute meist ein

nordafrikanisches Museum ziert, in der Regel den beiden gen Räumen des Kaltbadetraktes zuordnen kann.

Oftmals lassen die einzelnen Thermenräume jedoch eine Abstufung im Mosaikbelag erkennen. Die bevorzugten drei Hauptbaderäume tragen meist in der akzentuierten und so hervorgehobenen Raummitte aufwendigen Dekor, den der Badegast schon von der Schwelle der Tür aus erblicken kann. Die Nebenräume, Gänge und Schwellen - seltener die Bedienungsgänge - sind hingegen eher schlicht gehalten oder besitzen überhaupt kein Mosaik.

Die o.g. Dissertation hat sich also die Aufgabe gestellt, auf die Frage:

a) welche Themen in Badeanlagen bevorzugt auftreten,

b) in welchen Räumen sie auftreten, und

c) mit welcher Häufigkeit

eine zufriedenstellende Antwort zu finden.

Sie versucht neben der Behandlung von Themen wie "Badetracht", *instrumentum balnei*, Badeformeln und -sprüche, gymnischen Agone, *ludi graeci*, munera sowie meeresbezogener Thematik auch das Zusammenspiel von Architektur und Dekoration näher zu beleuchten.

Des weiteren sollen soziale Aspekte zur Sprache kommen und die Beziehung nordafrikanischer Mosaikwerkstätten zum spanischen Festland und den Balearen aufgezeigt werden.

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Baths and Bathing in Classical Antiquity

by F.K. Yegül

Readers will be interested to hear that this important work is now available in paperback.

In 1994 the book won the Hitchcock Book Award, given to the most distinguished work of scholarship in the History of Architecture published in 1992 by a North American scholar. The citation reads: "Encyclopedic in scope, crossing cultural boundaries, and clearly integrating function and form, this book enlarges our knowledge of ancient *mores* and technology, while providing a large and useful repertoire of plans, photographs, reconstruction drawings, and literary sources on bathing in the ancient world. It will constitute a prime source for future research on this central and quotidian institution. In an exemplary mode, it beautifully demonstrates the Vitruvian triad of *firmitas*, *utilitas* and *venustas*."

ANCIENT BATHS AND BATHING

Bibliography for 1994-95 with a supplement for 1993

Note: This bibliography follows the classification given in H. Manderscheid, *Bibliographie zum römischen Badewesen unter besonderer Berücksichtigung der öffentlichen Thermen* (München 1988), with some modifications; see there too for names of cities and places and of bath-buildings, etc. Any headings for which there are no entries are omitted. Abbreviations are those of *Archäologische Bibliographie* 1993, IXff. and *Archäologischer Anzeiger* 1992, 743ff. See also *Zeitschriftenverzeichnis*. in: *Madriider Mitteilungen* 35, 1994, Zugangsverzeichnis XIff. for Spanish and Portuguese regional reviews. Abbreviations which do not appear in these publications are based on the same principles.

Under the heading 'Sites with bath buildings' appear all sites in alphabetical order without sub-headings for public, private, etc. This distinction is given by the letters P (= public), PR (= private), MIL (= military) and TB (= spa baths); if the classification is not certain, a '?' appears after it. 'B' means that the identification of the building as a bath is not certain. The classifications are in part taken from the publications, in part the opinion of the bibliographer.

The items are all numbered; if an item appears under more than one heading, the number only will be repeated in subsequent categories.

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* = non vidi

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Items for the next issue of *Balnearia* should be sent to the Editor, to arrive before 31 May 1996. Disks, preferably in IBM WordPerfect or Macintosh Word, will be much appreciated.; please leave formatting to a minimum. Many thanks.