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Journal of volcanology
and geothermal research

Journal of Volcanology and Geothermal Research 126 (2003) 169–200

www.elsevier.com/locate/jvolgeores

Impact of the AD 79 explosive eruption on Pompeii, II. Causes of death of the inhabitants inferred by stratigraphic analysis and areal distribution of the human casualties

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Received 26 February 2002; accepted 24 April 2003

Abstract

Detailed descriptions of the effects of explosive eruptions on urban settlements available to volcanologists are relatively rare. Apart from disease and starvation, the largest number of human deaths caused by explosive eruptions in the twentieth century are due to pyroclastic flows. The relationship between the number of victims related to a specific hazard and the presence of urban settlements in the area covered by the eruption has been shown. However, pyroclastic falls are also extremely dangerous under certain conditions. These conclusions are based on archaeological and volcanological studies carried out on the victims of the well-known AD 79 eruption of Vesuvius that destroyed and buried the Roman city of Pompeii. The stratigraphic level in the pyroclastic deposit and the location of all the casualties found are described and discussed. The total number of victims recovered during the archaeological excavations amounts to 1150. Of these, 1044 well recognisable bodies plus an additional group of 100 individuals were identified based on the analysis of several groups of scattered bones. Of the former, 394 were found in the lower pumice lapilli fall deposit and 650 in the upper stratified ash and pumice lapilli pyroclastic density currents (PDCs) deposits. In addition, a tentative evaluation suggests that 464 corpses may still be buried in the unexcavated part of the city. According to the reconstruction presented in this paper, during the first phase of the eruption (August 24, AD 79) a huge quantity of pumice lapilli fell on Pompeii burying the city under 3 m of pyroclastic material. During this eruptive phase, most of the inhabitants managed to leave the city. However, 38% of the known victims were killed during this phase mainly as a consequence of roofs and walls collapsing under the increasing weight of the pumice lapilli deposit. During the second phase of the eruption (August 25, AD 79) 49% of the total victims were on the roadways and 51% inside buildings. All of these inhabitants, regardless of their location, were killed by the unanticipated PDCs overrunning the city. New data concerning the stratigraphic level of the victims in the pyroclastic succession allow us to discriminate between the sequential events responsible for their deaths. In fact, casts of some recently excavated corpses lay well above the lower PDCs deposit, testifying that some of the inhabitants survived the first pyroclastic current. Finally, during the PDCs phase the victims died quite rapidly by ash asphyxiation. From the attitude of some casts, it seems that some people survived the initial impact of the second pyroclastic current and tried to support head and bust during the progressive aggradation of the deposit at the base of the current.

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Keywords: Vesuvius; AD 79 eruption; Pompeii inhabitants; distribution of victims; causes of death; survival rate

1. Introduction

Increasing demographic pressure around volcanoes, often related to the growth of urban areas, strongly challenges volcanologists to improve their capability to mitigate volcanic risk. If it is possible to reconstruct the impact of an eruption on the territory and the effect of the different eruptive processes on buildings and population, suitable measures of risk mitigation (e.g. evacuation, protective barriers, personal protection) can sometimes be undertaken.

Estimates of people killed by volcanic eruptions are usually incomplete and often not linked to specific eruptive hazards. This is generally due to the lack, especially for the past centuries, of complete and accurate reports. Of the few statistics available, those published by [Blong \(1984\)](#) are particularly meaningful. Of the ten main causes of death reported (see his table 3.2), disease and starvation, indirectly resulting from eruptions, are considered as the most significant, contributing to 40% of the overall number of victims. On the other hand, if only data from the twentieth century are considered, we find that pyroclastic flows are overwhelmingly the most important cause (70%) of human deaths associated with volcanic eruptions. Recently, a selection of the number of victims from volcanism of the past two centuries has been compiled by [Tanguy et al. \(1998\)](#). They confirm pyroclastic flows as the primary cause of death (26.8%), followed by lahars (17.1%) and volcanogenic tsunamis (16.9%).

Relatively few examples deal with the impact of explosive eruptions on urban areas. In 1883, the volcano Krakatau, in the Strait of Sunda, erupted explosively. The eruption of a large quantity of magma produced a collapse of the volcano edifice and the formation of a huge seawave (tsunami) that destroyed partly or completely hundreds of villages, causing almost 33 000 victims ([Simkin and Fiske, 1983](#)). In 1902, the volcano Pelée in Martinique discharged a series of relatively small

pyroclastic flows that destroyed completely the nearby city of St. Pierre, killing 29 000 inhabitants. The few survivors were recovered from places completely sheltered from the pyroclastic flows ([Blong, 1984](#)). More than 100 villages were damaged or destroyed by lahars produced by the volcano Kelut in 1919 ([Francis, 1976](#)) with 5500 inhabitants killed. These estimates are largely based on contemporaneous chronicles.

It is our opinion that the relative weight of the different eruptive hazards as agents of death can be better ascertained with an improved knowledge of the effects of past eruptions, based on evidence within the resulting volcanic deposits. One excellent case is the AD 79 eruption of Vesuvius; the archaeological site of the Roman city of Pompeii is an extremely suitable place for understanding the relationship between the various styles of eruptive events, the mechanical behaviour of the buildings and the number and location of the victims. The well-known chronicle of the eruption written by Plinius the Younger in a letter to the historian Tacitus, is generally utilised by volcanologists for reconstructing the timing of these volcanic events.

In the present paper the causes of death of the inhabitants of Pompeii are investigated using the results of a new stratigraphic study of the volcanic sequence inside the city of Pompeii, integrated with the detailed data ([Appendices A and B](#)) collected by the staff of the Laboratorio di Ricerca Applicata of the Archeological Superintendance of Pompeii and reported in [De Carolis et al. \(1998\)](#). These data provide a complete source of data with respect to the stratigraphic level and location of all the victims found during more than two centuries of excavation at the archaeological site of Pompeii. Furthermore, the structure and shape of the buildings affected the distribution of the volcanic products, and consequently the number of victims related to each specific eruptive phase is shown. In particular, the risk of collapse of buildings blanketed under a thick

airfall deposit, indicating this as a primary agent of death in urban areas, is emphasised. In the companion paper (Luongo et al., 2003) our hypotheses about the effects of the AD 79 eruption on the buildings are discussed.

2. The AD 79 Vesuvius eruption and its effects on Pompeii

According to Plinius, the AD 79 eruption started at about 1 p.m. on August 24 with a phreatomagmatic opening phase (Sigurdsson et al., 1985), immediately followed by the formation of a high Plinian column. A thick layer of pumice lapilli resulting from the column fallout covered a wide area to the south of the volcano (Lirer et al.,

1973); the deposit reached a maximum depth of 2.8 m at Pompeii (Sigurdsson et al., 1985). Several pyroclastic currents during and after the emplacement of the upper part of the lapilli pumice deposit overwhelmed other cities around the volcano (Sigurdsson et al., 1985; Cioni et al., 1992; 1996) with temperatures up to 400°C (Kent et al., 1981; Capasso et al., 2000; Mastrolorenzo et al., 2001). The final stage of the eruption was phreatomagmatic, as it is witnessed by the presence of accretionary lapilli and an increase in the proportion of fine ash in the deposit. A lithofacies description and interpretation of the pyroclastic succession exposed at Pompeii, illustrating the dynamics reported above, is represented in Fig. 1.

The process of Pompeii's burial is reconstructed in the companion paper (Luongo et al., 2003) and

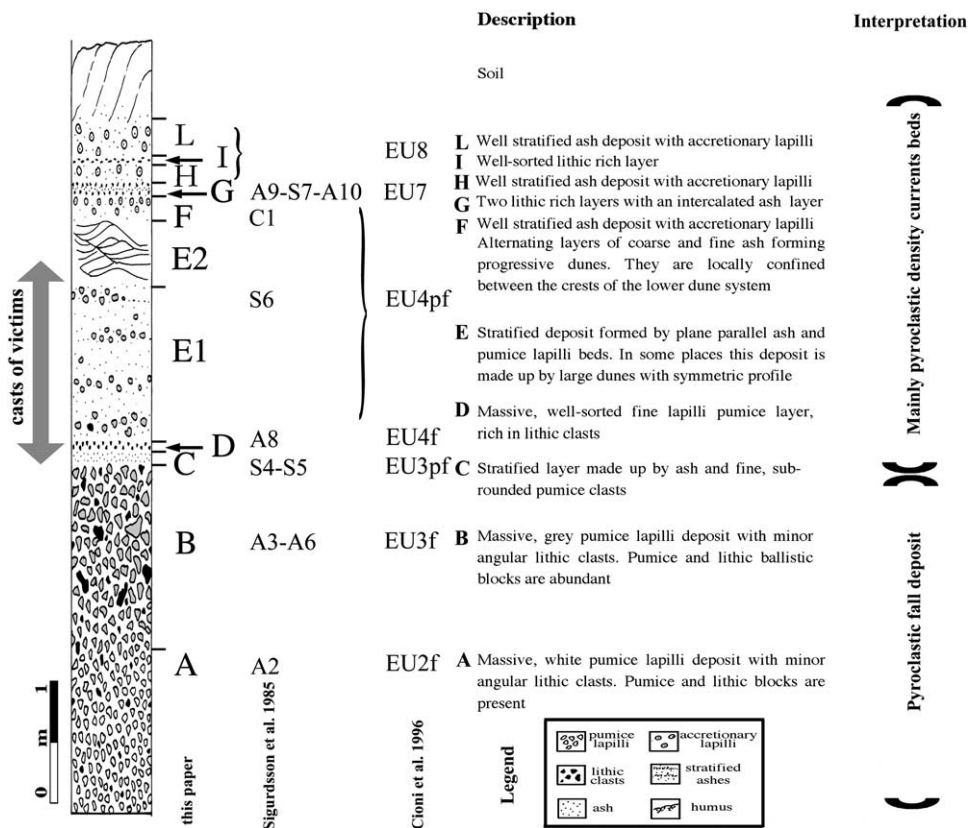


Fig. 1. Stratigraphic section of the AD 79 deposits at Pompeii with lithofacies characteristics and emplacement mechanisms reported for each layer. The maximum thickness for each unit is represented. In some places, the products of the PDCs are only few decimetres thick. Victims are found in the C and E1 units. Correspondences between the previous stratigraphic nomenclatures of the AD 79 deposit at Pompeii and the one proposed in the present paper are also shown.

only briefly reported here. It began in the early afternoon with the fall of pumice lapilli from a Plinian eruptive column. Column height and mass discharge rate increased during the eruption (Carey and Sigurdsson, 1987). The variations of these parameters had important consequences on the characteristics of the fall activity in the city of Pompeii. In the early phase of the white pumice fall activity both pumice and lithic clasts were small (maximum diameter of pumice clasts 5 cm; mean diameter of the deposits ranges from 4 to 8 mm; respectively from Sigurdsson et al., 1985 and Lirer et al., 1993). As the fall activity progressed with the emplacement of the grey pumices, both maximum clast size (maximum diameter of pumice clasts 7 cm; mean diameter of the deposits ranging from 4 to 8 mm) and accumulation rate increased. The average rate of deposition in the open areas of the city was 15 cm/h; areas accumulating additional material sliding from the steeper roofs received 25–30 cm/h. Within the first 6 h of the eruption, roofs began to collapse under the weight of the pumice lapilli, causing some supporting walls to crumble as well. By the early morning of August 25, most structures were seriously damaged. Portions of many houses had collapsed, and probably only those roofs the angle of which was very steep were still intact. Pumice lapilli invaded the houses, through compluvia (roof openings) or collapsed roofs, forming a deposit ranging 1–5 m in thickness. Approximately 3 m of material accumulated in peristyles and alleys between houses. At this point of the eruption, sustained pyroclastic density currents (PDCs) overcame the town: this phase was punctuated by, at least, four episodes of lithic-rich coarse ash to lapilli fall suggesting pauses between the passage of flows. The occurrence of a lens of reworked material near the base of the PDCs succession supports the evidence for multiple emplacement events. The presence of diffuse sedimentary structures within the PDCs deposit suggests the dilute and expanded nature of the pyroclastic currents. As a consequence, only the lower portion of the PDCs interacted with the structures of the town, destroying preferentially the upper floors and the ground floor walls that happened to be perpendicular to the flow direc-

tion. Impact with the buildings caused a deceleration of the lower part of the currents, which consequently lost their solid matter and, hence, their kinetic energy. The PDCs formed compact and very cohesive, 1–3-m-thick layers upon the lower pumice lapilli deposit (Fig. 1). At the end of the eruption only a few public buildings rose above the pyroclastic deposit.

3. The urban structure of Pompeii

To fully understand the location of the victims it is worthwhile summarising the urban framework of the city. Pompeii was located at an average elevation of 25–30 m above sea level, upon an ancient hill formed by a lava flow. Roman chronicles report that the Sarno River flowed to the south of the city and probably a harbour was at the mouth of this river (Pescatore and Senatore, 1999). The city has conventionally been divided into nine zones ('regiones'; counterclockwise, from I to IX) by longitudinal arteries ('decumans') and transversal arteries ('cardini') (Fig. 2). Every 'regio' has been subdivided into 'insulae', made up by blocks of houses. Around the town seven gates dissected a 10-m-tall wall. The urban fabric of Pompeii was made up by dwellings of different dimensions according to the inhabitants' wealth and the range of trade and artisan activities. Public buildings were concentrated in the area of the Foro Civile, Foro Triangolare and Anfiteatro (Regiones VII and VIII in Fig. 2). From Pompeii paved roads led to various Campanian towns (e.g. Nuceria, Herculaneum and Neapolis). To date the archaeological excavation covers two-thirds of the total city area.

4. Previous estimates

Since 1748 the excavation journals report findings skeletons in different parts of Pompeii. As the excavated area widened, the recovery of corpses increased. During the excavation of the monumental four-sided Portico dei Teatri in December 1766, 4 skeletons, then identified as slaves, were

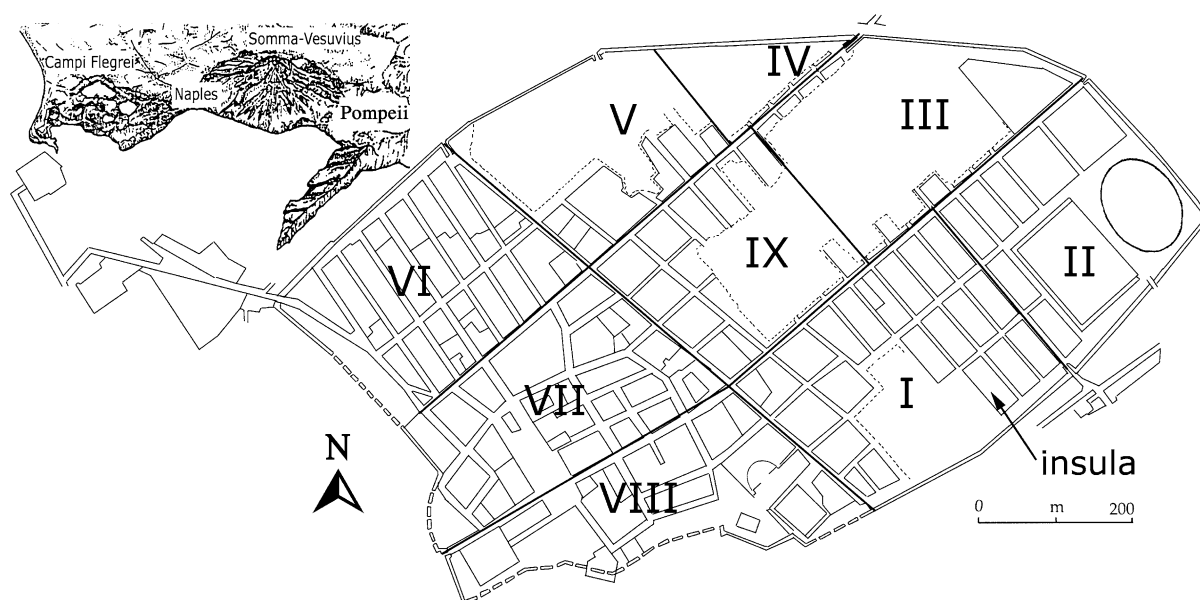


Fig. 2. Map of Pompeii showing the location of the 'regiones' (roman numerals). Unornamented areas represent unexcavated 'regiones'. Inset: Campanian Plain with Somma-Vesuvius volcanic complex and the city of Pompeii.

found close to iron shackles. In April 1768 a group of human remains (34 corpses) came to light. In this climate, Emperor Joseph of Ansbourgh asked Ferdinand IV, King of Naples, to enter the excavations to meditate in front of one of the victims. In December 1772, during the exploration of a great building located outside the city walls, 20 corpses were recovered from a corridor close to the entrance of a cryptoporticus; they had been buried by an ash layer and lay one on top of the other.

In the second half of the nineteenth century, Giuseppe Fiorelli, director of the Pompeii Excavations, developed a technique to obtain casts of the corpses found within the ash layer by simply pouring plaster into the voids left by the bodies into the compacted ash deposit. This method was first applied in February 1863 when the casts of 4 bodies, then identified as a family escaping the town, were obtained. Other significant discoveries made by means of this method were: 9 corpses in the Giardino del Criptoportico (Garden of the Cryptoporticus) (1914), 13 corpses in the Orto dei Fuggiaschi (Garden of the Fugitives) (1961), 10 corpses in the Casa del Braccialetto d'Oro (House of Golden Armlet) (from 1958 to 1970),

21 corpses outside the Porta Nola (1908–1911 and 1976–1978) and 9 corpses in Regio I, Insula 22 (1989).

The exact number of Pompeii inhabitants at the time of the eruption is still debated, ranging as has been suggested from 6400 to 20–000 (Fiorelli, 1873; La Torre, 1988; Wallace-Hadrill, 1994). Various authors have tried to estimate the number of corpses buried in the city (Table 1). Gell (1832) calculated that 1300 people died during the eruption based on the corpses (160) found in the part of Pompeii up to that time excavated. Since the second half of nineteenth century an estimate of about 2000 victims is usually reported in the scientific literature (Davenport, 1873; Dyer, 1883;

Table 1
Number of corpses found at Pompeii in the nineteenth century

Date	Number of corpses	Author
1811	100	Romanelli
1827	170	Bonucci
1832	160	Gell
1860	680	D'Aloe
1872	600	Beulé

Mau, 1899; Sogliano, 1925; Brion, 1962; Grant, 1985; Sigurdsson et al., 1985; Cioni et al., 1992).

5. Stratigraphic height and distribution of human corpses inside the city walls

The following sections provide a description of the stratigraphic levels and distribution of the recovered human remains on the basis of our direct observations and according to the excavation journals, both published and unpublished, edited

since 1748 by the Archaeological Superintendance of Pompeii and Napoli.

5.1. Stratigraphic height

The corpses can be classified into two groups according to their stratigraphic level within the volcanic deposits: (1) those found in the pumice lapilli fall deposit, and (2) those found in the stratified PDCs deposit, both where this deposit rests onto the pumice lapilli blanket and where it directly overlies the floor of the ancient buildings

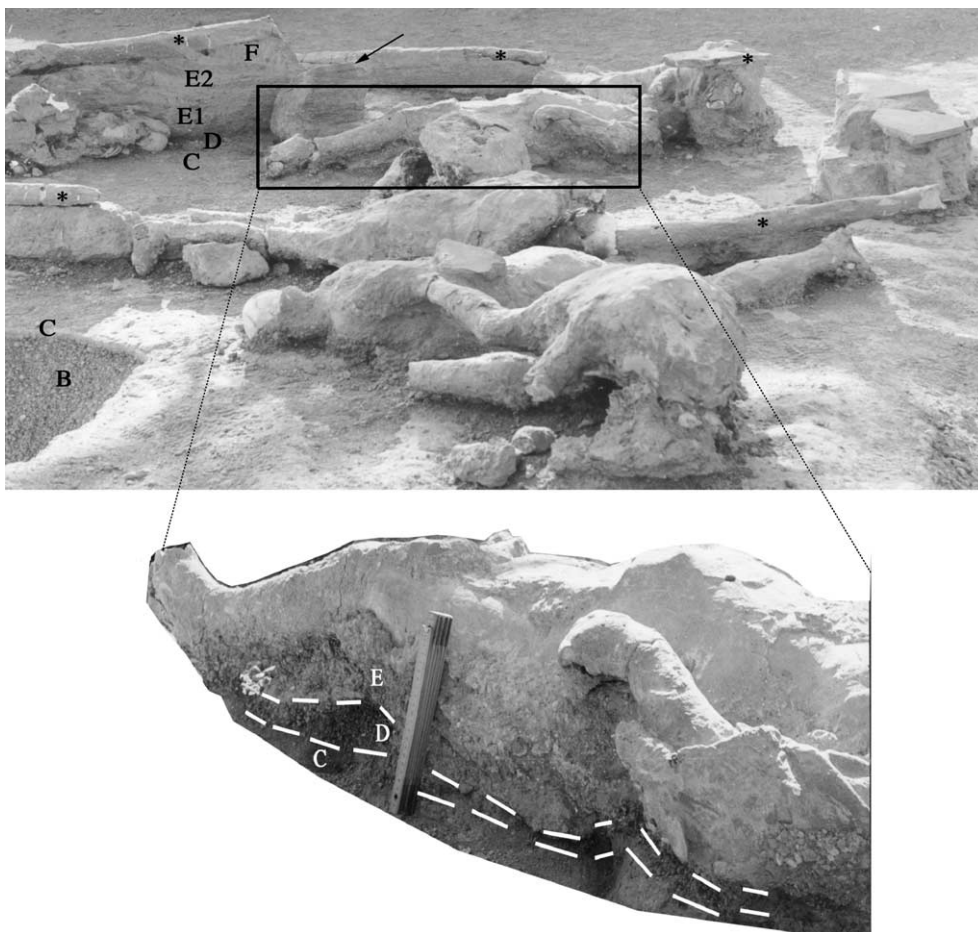


Fig. 3. Corpses found in Regio I, Insula 22, Casa di Stabianus. The top picture shows a group of human casts lying within the ash deposit. On the left side the upper part of the fall deposit (layer B) and most of the following units (from C to F) are visible. Above the corpses there are roof tiles (indicated by an arrow) and wooden rooftrusses (asterisks). Note that the corpses are composed and do not show any traumatic sign. The bottom picture represents a magnification of the supine cast. Below the corpse the stratigraphic sequence from C to the basal part of E1 can be recognised.

not collapsed during the first phase of the eruption.

In the PDCs group, the data from ancient excavations are not sufficiently detailed to report the exact position of the corpses with respect to the stratigraphic succession reported in Fig. 1. Sigurdsson et al. (1985) report that human remains were found in the S4 and S5 layers (C) but were principally buried by S6 (E). A cluster of bodies buried in EU4 (E) is also reported in Cioni et al. (1996). More recently, an archeological team (Varone and Marturano, 1997) found parts of two human skeletons lying at different stratigraphic levels (e.g. one foot in layer C, a head in layer D, and one hand in layer E) in a narrow alley on the western side of the House of the Chaste Lovers (Regio IX; Fig. 2). We established without doubt that groups of victims lie several centimetres above the base of stratigraphic level E

on the basis of our direct observations of recent excavations inside the city and a selection of pictures from the Photographic Archives of Pompeii. In Fig. 3 we show a sketch of some casts of human bodies recently discovered in the southwestern corner of Regio I, Insula 22 (Nappo, 1992; De Simone, 1997). In this area, under a protective shed, it is still possible to observe the human casts lying above the 2.8-m-thick pyroclastic fall deposit. The pyroclastic sequence is quite complete and includes the units from A to F; the upper layers were removed during the excavations. In this place the upper PDCs sequence is 40–50 cm thick. Casts of wooden rooftrusses and roof tiles are present at different stratigraphic heights between units E and F. All human casts undoubtedly lie over the well recognisable lithic-rich unit D, enclosed within unit E. In detail, they lie in the middle of unit E, near the boundary between E1



Fig. 4. Group of corpses (casts and skeletons) near the Casa del Criptoportico. They were encountered in the ash and pumice PDCs deposit above a thick, white–grey, lapilli pumice fall deposit. Below the human cast on the right side the stratigraphic sequence from unit B to E1 is well exposed. (From the Archives of the Soprintendenza Archeologica di Pompei.)

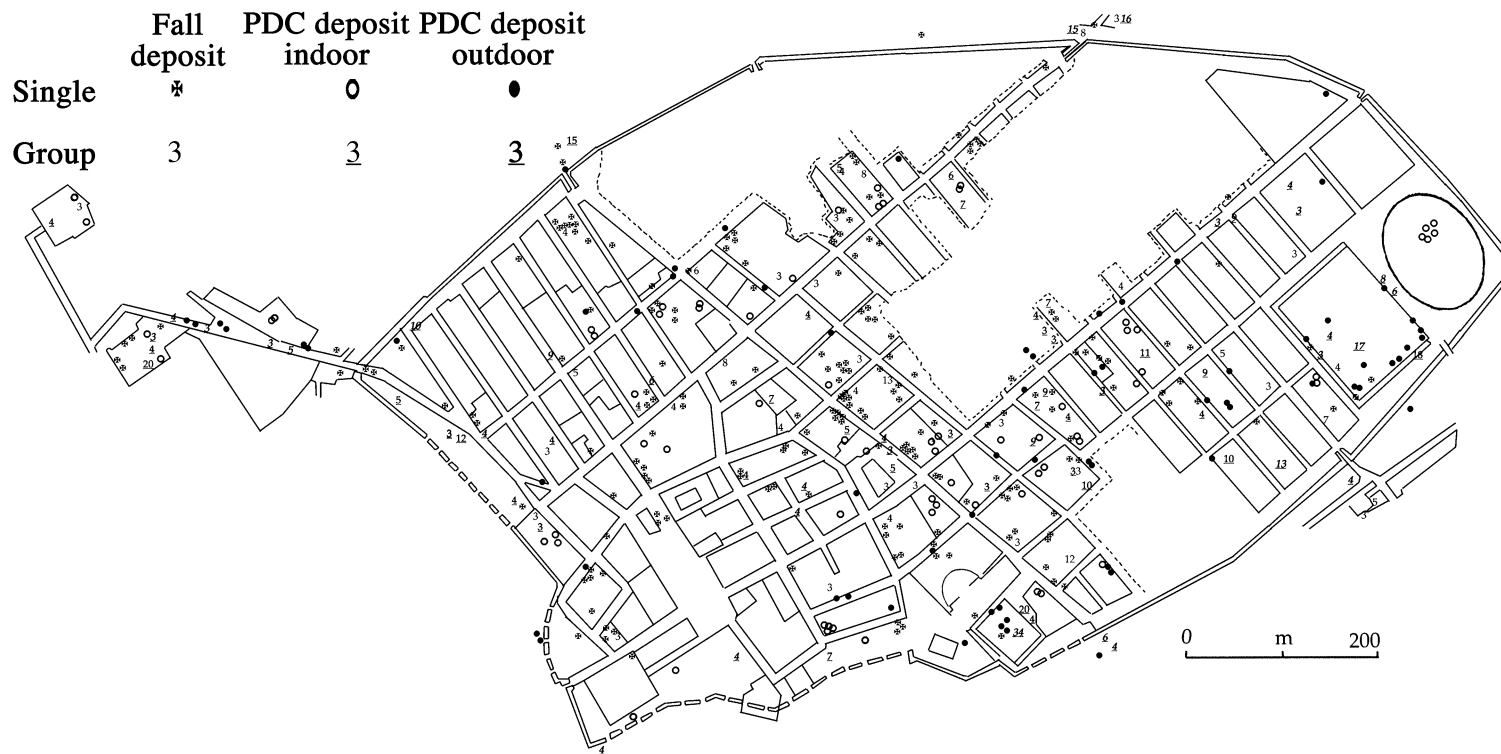


Fig. 5. Location of corpses found at Pompeii in the basal pumice lapilli fall deposit and the upper stratified ash and pumice PDCs deposit. For the PDCs deposit we distinguish between corpses found indoors and outdoors. The groups are indicated by the number of the victims.

Table 2

Total number of corpses, found individually or in groups, encountered in the pumice lapilli fall deposit inside buildings or in outdoor places

	Indoor areas (a)	Outdoor places (b)	Individual finds (c)	Multiple finds (d)	Total (a)+(b) or (c)+(d)
External areas	17	17	12	22	34
Regio I	66	9	38	37	75
Regio II	12	7	5	14	19
Regio III	9	–	1	8	9
Regio IV	1	1	2	–	2
Regio V	40	–	16	24	40
Regio VI	41	2	29	14	43
Regio VII	59	5	39	25	64
Regio VIII	21	5	16	10	26
Regio IX	69	1	39	31	70
Unknown location	10	2	3	9	12
Total	345	49	200	194	394

and E2. The presence of other victims at this same stratigraphic height is illustrated in pictures of older excavations from the Archives of Pompeii. In the example illustrated in Fig. 4, there are some casts and several skeletons in the garden of Casa del Criptoportico (Regio I, Insula 5) above a thick pyroclastic sequence. In particular, it is possible to observe an human cast, lying on his left flank (on the right side in the photo) inside ash unit E, which is above the fine lapilli; lithic-rich unit D.

Groups (a) and (b), mentioned above, amount to 394 and 650 individuals, respectively, for a total of 1044 victims. In any case, these figures are

to be considered approximations, since many groups of scattered bones and skeletons recovered during the excavations were never analysed to identify the corresponding number of victims. In order to attempt an estimate, we assumed an average of 3 corpses for each group, thus reaching a number of 100 victims. The total amount of effectively recovered bodies could then be on the order of 1150.

5.2. Areal distribution

From the excavation journals it was possible to establish the location in the city for every victim

Table 3

Total of corpses, found individually or in groups, encountered in the PDCs deposit inside buildings or in outdoor places

	Indoor areas (a)		Outdoor places (b)	Individual finds (c)	Multiple finds (d)	Total (a)+(b) or (c)+(d)
	Upper floor	Ground floor				
External areas	22	27	70	18	101	119
Regio I	57	29	41	32	95	127
Regio II	8	18	73	24	75	99
Regio III	–	–	4	4	–	4
Regio IV	–	–	–	–	–	–
Regio V	11	–	16	9	18	27
Regio VI	21	18	35	13	61	74
Regio VII	16	17	14	12	35	47
Regio VIII	6	37	51	22	72	94
Regio IX	23	20	7	9	41	50
Unknown location	4	–	5	9	–	9
Total	168	166	316	152	498	650

Table 4
Grouping of victims in the PDCs deposit

	Indoor areas				Outdoor places	
	Upper floor		Ground floor		Individual finds	Multiple finds
	Individual finds	Multiple finds	Individual finds	Multiple finds		
External areas	3	19	3	24	12	58
Regio I	14	43	2	27	16	25
Regio II	8	–	–	18	16	57
Regio III	–	–	–	–	4	–
Regio IV	–	–	–	–	–	–
Regio V	6	5	–	–	3	13
Regio VI	6	15	1	17	6	29
Regio VII	7	9	2	15	3	11
Regio VIII	6	–	6	31	10	41
Regio IX	6	17	–	20	3	4
Unknown location	4	–	–	–	5	–
Total	60	108	14	152	78	238

and to define whether the corpses were isolated or grouped (Fig. 5).

Of the 394 intact corpses within the pumice lapilli deposit, 200 were found isolated and 194 in groups; with respect to their position in the city, 345 were inside buildings or houses and 49 in outdoor places (Table 2).

Of the 650 corpses recovered from the PDCs deposit, 152 were isolated and 498 grouped. With respect to their position in the city 334 were found inside buildings, of which 168 were on the upper floors, 166 on the ground floors

and 316 outdoors (Table 3). Table 4 reports the grouping of victims in the PDCs deposit.

6. Pompeii's unexcavated 'regiones' and neighbouring areas

Regiones I, III, IV, V, and IX are only partially excavated (Fig. 2). It is therefore plausible to consider that the total number of victims at Pompeii is higher than 1150. With this in mind, we performed a statistical projection in order to estimate

Table 5
Corpses found in the territory outside the town of Pompeii

Town	Localities	Pumice fall deposit	PDCs deposit
Pompeii	Contrada Moregine	10	41
	Borgo marinaro	10	78
	Contrada Civita Giuliana	2	7
	Contrada Pisanella	5	
	Via Lepanto	1	
	Contrada Spinelli		4
Terzigno	Contrada S. Abbondio		1
	Boccia al Mauro		12
Boscoreale	Villa Pisanella		5
	Contrada Civita di Nitto		1
	Contrada piazza Mercato		4
Scafati	Contrada Baraccone		1
Torre Annunziata	Oplontis		54
Total		28	208

the number of bodies that may still be buried into the deposit. If we consider the ratio between excavated and unexcavated area for each 'regio' and the number of corpses already found, a value of 464 is obtained; in particular, 262 within the pumice lapilli deposit and 202 within the stratified ash and pumice deposit. If we add this number to the 1044 and the about 100 people of the groups already described (see Section 5.1), we reach a final estimate of about 1600 victims for the whole area enclosed by the city walls.

Table 5 shows the number of victims recovered during the excavations carried out outside the city walls: 28 corpses within the pumice lapilli deposit and 208 within the PDCs deposit, for a total of 236.

7. Sex and age of the human corpses

There are few studies about sex and age of the Pompeii inhabitants. We have found only 210 pieces of casualty information, some of which for example are deductions about skeleton gender being female deduced solely on the finding of armbands and earrings near the human remains. This non-representative sample of casualties is formed by 45 men, 80 women and 85 children.

8. Condition of the human corpses

Few forensic medical investigations have been conducted on the human remains at Pompeii in order to establish clinical causes of death (Delle Chiaje, 1853; Baxter, 1990). Nevertheless, it is possible to make some inferences by looking at the conditions of some skeletons and the posture of the bodies as reconstructed by the casts (Minervini, 1855; Maiuri, 1986).

Some of the skeletons found in the lapilli pumice fall deposit show fractured skulls. The majority of casts from the PDCs deposit show intact corpses attempting to shelter their faces; on the other hand, the number of partly or fully dismembered corpses in this deposit is relatively small. Furthermore, preliminary observations on skeletons recovered in the city indicate that the great

majority of human bones are not burned (Henneberg, pers. commun.).

In the studied outcrops and according to the photographs of the Pompeii Archives, most of the gypsum body casts are stretched with the face to the ground and both hands in front of the face in an obvious protective position, whereas others lay on their flanks or supine. It is meaningful that some human casts do not lie entirely on the ground, the head and, rarely, the bust being supported by the arms. In these cases the raised part of the bodies lie at higher stratigraphic levels within E1. For example, in the Garden of the Fugitives a human figure, with extended legs, rests on his right forearm, the bust almost erect (Fig. 6a). Also in the so-called Stabian house (Regio I, Insula 22) a prone cast supports his head on the forearms (Fig. 6b). In this same place another victim lay on his flank with the right arm on the face of a supine figure.

9. Discussion

9.1. The effects of the different eruptive phases on the Pompeii inhabitants

In order to properly understand the data presented, it is worth spending some time considering the existing statistics for the causes of death related to volcanic eruptions. According to Blong (1984) and Tanguy et al. (1998), who assembled data on events occurring after AD 1600 and 1783, respectively, the percentage of victims caused by tephra fall (including ballistic projectiles) amounts only to 4.1–4.6%. More particularly, Sigurdsson et al. (1985), describing the products of the Vesuvius AD 79 pumice lapilli fall, refer to them as a 'relatively innocuous Plinian fallout phase' when compared to the later pyroclastic current deposits, and report that the majority of the victims of the eruption lie above it. It is evident that these data are in strong disagreement with the above statistics and statements. If the corpses reported by the excavation journals are collated, the ratio between the victims in the PDCs deposit and those in the fall deposit is 6 to 4 (Fig. 7). Nearly 90% of the victims in the pumice fall deposit are located in

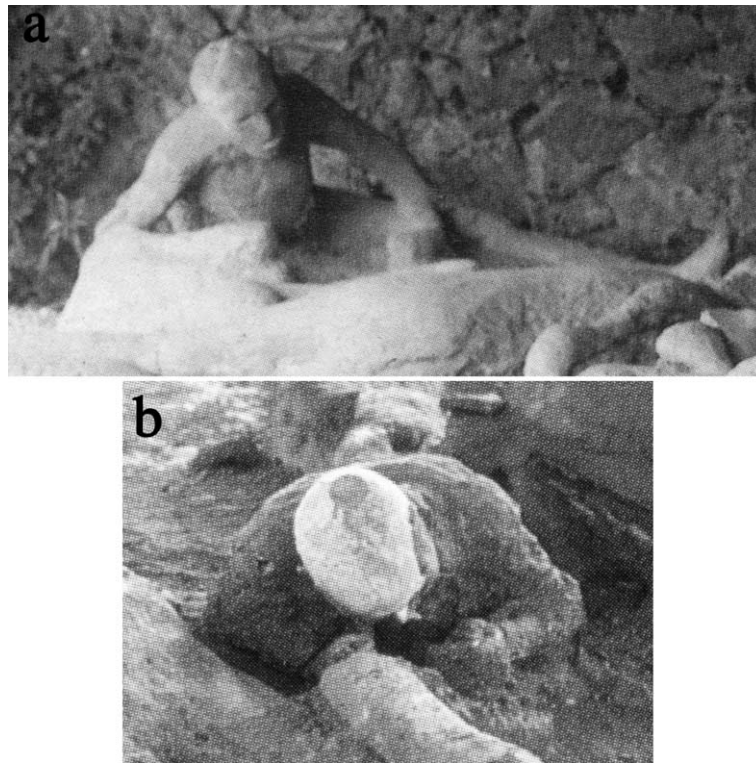


Fig. 6. Human casts frozen in the attempt to support their heads from the aggrading deposit (see text for explanation). (a) Human cast in the Garden of Fugitives. (b) Human cast in the Casa di Stabianus.

buildings or houses (Fig. 7), whereas the victims of the pyroclastic current phase are evenly distributed between indoor and outdoor areas (Fig. 7). This considerable difference in the distribution of the corpses within the city provides the key to the interpretation of the ‘anomalously’ high number of victims during the fall phase.

During this phase of the eruption, some people tried to take shelter in houses or other buildings. The fractured skulls of some of the recovered skeletons testify that their death was probably caused by roofs and walls collapsing under the load of the pyroclastic material. Only those whose shelter was provided by structurally stronger buildings managed to survive this eruptive phase. The small percentage of people found dead outdoors was probably killed by collapsing roof tiles or by the largest lithic fragments (up to 17 cm) falling from the eruptive column or, more probably, directly from the vent following ballistic

paths. In fact, our stratigraphic studies performed on new excavations near the city wall and inside the city show the presence of numerous large pumice and lithic ballistic blocks through the fall sequence; these are especially concentrated in the middle part of the grey pumice fall bed. A theoretical model on the cooling of the pyroclasts falling out of the eruption columns shows that particles smaller than 1.6 cm in diameter are deposited cold, while clasts larger than 25 cm suffer little heat loss (Thomas and Sparks, 1992); this model also predicts that accumulation rate is not an important factor. The relatively small grain size (mean diameter less than 1 cm) of the juvenile clasts that fell on Pompeii therefore resulted in cold deposit. Only ballistic blocks remained sufficiently hot to pose a further hazard to life.

During the PDCs phase all of the remaining survivors, both within the intact buildings and

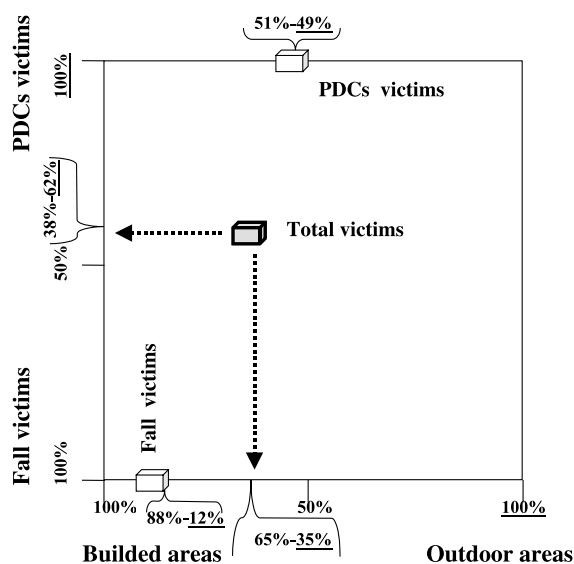


Fig. 7. Graphic summary of the distribution of corpses in the city of Pompeii. Total victims represent the sum of the fall and PDCs victims. On abscissa is reported the proportion of victims found indoors or outdoors; on ordinate is reported the proportion of fall and PDCs victims.

outdoors, were killed by the overwhelming flows. Our field data, from recent and past excavations inside the city, exclude the possibility that *all* Pompeii inhabitants were killed by the first PDC that deposited layer C (units S4 and S5 of Sigurdsson et al., 1985), as envisaged by Sigurdsson et al. (1985). We found victims several centimetres above the base of unit E, thus we may conclude that some inhabitants survived to the succeeding fall phase that emplaced the lithic-rich layer D; they were able to walk outdoors during the emplacement of the basal part of unit E (that remains underneath the casts observed during this study). The front part of the pyroclastic current that formed unit E was diluted enough to possibly allow the inhabitants to breathe for a few minutes. Of course, ambient conditions were very severe due to the presence of abundant ash particles in the air; consequently citizens located outdoors were unable to go on in their attempt to flee to safety. They fell onto the ground, upon the basal part of unit E (made up by particles progressively sedimented by the flow front) sheltering their

faces. In a short time, the PDC engulfed the city suffocating and covering the inhabitants.

Even if it seems that in some places the currents had enough kinetic energy to mutilate the corpses (probably due to canalisation inside some buildings or narrow alleys), the fact they are more frequently intact suggest that ash asphyxiation was the plausible cause of death. The finding of some human casts in a partly erect position, with the head and the bust at a higher stratigraphic level within E, seems to indicate that death was not always instantaneous and some people tried to support themselves during the aggradation of the basal part of unit E. The presence of numerous tiles and toppled walls just above the human casts suggest that the main body of the PDC, with higher kinetic energy, overwhelmed the city when the victims were yet buried and protected in the earlier pyroclastic deposit. Well preserved frescos and wood objects as well as field textures, such as the presence of accretionary lapilli in the upper part of the PDCs deposit (units F, H and L), support the idea of a low emplacement temperature for the PDCs at Pompeii. The possibility that burn injuries killed Pompeii inhabitants, as recently proposed for Herculaneum (Capasso et al., 2000; Mastrolorenzo et al., 2001), should be ruled out also on the basis of anthropological observations that the great majority of human bones in Pompeii show no evidence of being exposed to high temperatures (i.e. in excess of 100°C; Hennerberg, pers. commun.). A most intriguing scenario is related to the very inhomogeneous amount of destruction observed on the upper floors of the buildings buried in the pyroclastic current deposit (Luongo et al., 2003), suggesting a non-uniform flow behaviour. The erosive, canalised pattern of the pyroclastic currents along some paths (e.g. transversal walls and along the central axis of the main edifices) is opposed to their essentially depositional behaviour in others, very close, areas (e.g. walls parallel to the flow direction). This feature testifies to the different kinetic conditions experienced by the Pompeii inhabitants and hence of the different physical integrity of their corpses.

If the previously reported data about sex and age are truly representative of the victims inside

the city, it can be deduced that young males are underrepresented in the sample. Based on this, some physical anthropologists (Hennerberg and Hennerberg, 1999) have suggested that the healthiest individuals left the town at the first signs of the disaster, whereas the older citizens, children and women were left behind.

9.2. *Survival rate*

Attempting to estimate the survival rate of the eruption is not a secondary matter, if we want to quantify its impact. Unfortunately, as previously reported, the exact number of inhabitants at the time of the eruption is still uncertain: considering the estimates reported above, it is possible to calculate that probably 75–92% of the residents escaped the town at the first signs of the crisis.

But, based on the available data, it is not possible to know how successful those fugitives were, mainly because of the quickly thickening fallout pumice deposit on the streets and the countryside; probably, as shown by the hundred victims recovered from the relatively small excavations outside the city walls, many of them were killed.

10. Conclusions

The reconstruction of the causes of death of the Pompeii inhabitants allows a proposal of some links between the style and evolution of the AD 79 eruption and human behaviour. During the first phase of the eruption, the heavy pumice rain and the rapidly thickening deposit in Pompeii probably prevented or slowed the complete evacuation of the city. Herculaneum, out of the fall dispersal area, was, in comparison, almost completely evacuated before the PDCs overwhelmed the city (only a few hundred casualties were found near the beach). At Pompeii hundreds of people were killed initially by roof and wall collapse under the weight of fall products. At the end of this phase half of the survivors fled onto the roads trying to leave the city and the other half remained in the buildings to take shelter from the continued effects of the eruption. Both these strat-

egies failed because the successive eruptive phase was characterised by PDCs that destroyed and completely buried the Pompeian area, killing people regardless of their location.

From a more general point of view, the reconstruction of the events presented here brings new light to the impact of different sequential eruptive phenomena. We have shown that, under certain conditions (e.g. presence of buildings with flat roofs, a locally high density of population) even a relatively ‘innocuous’ event, such as a thick pumice fall, may cause significant mortality. However, the occurrence of survivors to the early dilute PDC that overran the whole city have been documented as well.

11. Other literature

Archaeologie und Seismologie, 1995; Avena, 1939; Barberi et al., 1989; Brunn, 1863; Conticello, 1994; Corti, 1957; D’ambrosio and De Carolis, 1997; D’Amore et al., 1982; De Caro and Guzzo, 1999; De Carolis, 1990; De Carolis, 1997; De Carolis, 1999; De Cesare, 1969; Descoudres, 1993; De Spagnolis and Conticello, 1994; Fiorelli, 1860; Garcia and Garcia, 1995; Gauthier and Marcella, 1984; Genovese, 1992; Guadagno, 1996; Ivanoff, 1859; Lazer, 1997; Lippi, 1816; Maiuri, 1948, 1950, 1983; Nicolucci, 1882; Patricelli and De Carolis, 2001; Pescatore and Sigurdsson, 1993; Pompei, *Pitture e Mosaici*, 1990–1999; *Pompei e gli architetti francesi dell’Ottocento*, 1981; Pozzi Paolini, 1977; Scatozza Horicht, 1987, 1991; Scacchi, 1843; Settembrini, 1889; Sheridan et al., 1981; Sommella, 1994; Stefani, 1996; Tanguy et al., 1998; Yokoyama and Marturano, 1997; Zevi, 1981

Acknowledgements

We are indebted to Livio Ruvo for critically reading the manuscript. The editorial expertise of B. Marsh and the helpful comments of two anonymous referees also helped to improve the paper. We extend our thanks to Dave Lentz for his final revision of the manuscript.

Appendix A

Corpses found within the lapilli pumice fall deposit

Regio and Insula	Location	Data of recovery	No. of corpses	References	
<i>External area</i>	Villa dei Misteri, along the NE side of rustic quarter, top floor	April 1929–June 1930	3 (2 women and 1 child)	Maiuri, 1931	
	Diomede villa, not identifiable area	March 9, 1771	1	PAH, 1, I, 1860	
	Diomede villa, along the arcade that delimitates the garden	May 4, 1771	2	PAH, 1, I, 1860	
	Diomede villa, near arcade back door	May 25, 1771	2	PAH, 1, I, 1860, Vinci, 1830 ; De Jorio, 1836 ; D’Aloe, 1860 ; Magaldi, 1930 .	
	Ercolano gate, tomb 1-S	Unknown	1 (man)	Vinci, 1830 ; D’Aloe, 1860 ; Gusman, 1900 .	
	Villa near Vesuvio gate, outside the boundary wall. At the entrance of the first ambient, east of lavatory along the southern front of the villa itself	November 19, 1900	1	NSc 1900	
	Vesuvius gate, near T. Suedius Clemens tombstone	August 1910	1	NSc 1910	
	Outside Nola gate, on the paved road	May 24, 1854	1	PAH, 2, VI, 1862	
	Outside Nola gate, at the back of the Aesquillia Polla tomb	September 25, 1907	2	NSc 1910	
	Outside Nola gate, near the Aesquillia Polla tomb	September 22–24, 1908	1	NSc 1910	
	Outside Nola gate	July 4 and 7, 1978	8	Arch. Pompei, GS 1976; De Caro, 1979	
	Tower VIII, near Nola gate	June 10, 1976	1	Arch. Pompei, GS 1976	
	Nocera gate, south of Eumachia tomb	August 25, September 8 and 27, 1954	3	D’ambrosio and De Caro, 1983	
	Nocera gate, inside Flavi tomb	May 1959	5	Arch. Pompei, GS 1959	
	Nocera gate, inside Flavi tomb, along the corridor	May 21, 1959	1	Arch. Pompei, GS 1959; D’ambrosio and De Caro, 1983	
	Nocera gate, inside Flavi tomb, close to the corpse found May 21	May 22, 1959	1	Arch. Pompei, GS 1959	
	<i>Regio I</i>				
	Insula 1	Hospitium Hermes, in the atrium	September 22, 1873	1	G.d.S., III, 1874
	Insula 2	House No. 6, in the atrium	May 17, 1873	1	G.d.S., III, 1874
House No. 16		March 10, 1873	2 (1 woman)	G.d.S., III, 1874	
Insula 3	House No. 28, small room with window on viridarium	June 17, 1873	12	G.d.S., III, 1874; Ruggiero, 1879	
	Pistrinum No. 1; near the wall of the courtyard	April 24, 1869	3	G.d.S., I, 1868	
	House of Epidius Fortunatus, in a cubicle, on the bed	November 8, 1872	2	G.d.S., II, 1870; Fiorelli, 1875	
	Possibly in the Thermopolium No. 21/22	October 14, 1869	2	G.d.S., I, 1869	
Insula 4	House No. 23/24, in front of Citarista’s house stable	December 7, 1869	2	G.d.S., I, 1869	
	House No. 29	March 1, 1873	1	G.d.S., III, 1874	
	Shop No. 4	November 28, 1853	1	PAH, 2, VI, 1862; Bull. Arch. Nap., 2, 1854	
	Citarista’s house, along the eastern side, near the peristyle	November 10, 1868	1	G.d.S., I, 1868	
	Pistrinum No. 13	October 16, 1855	1	PAH, 2, VI, 1862	
Pistrinum No. 14	April 29, 1857	1	PAH, 2, VI, 1862		

Appendix A (Continued).

Regio and Insula	Location	Data of recovery	No. of corpses	References
Insula 6	Stephanus fullonica	May 1912	1	NSc 1912; De Vos, 1982
	Stephanus fullonica, small room near shop No. 5	June 13, 1912	3 (1 woman)	NSc 1912
	Stephanus fullonica, 1.5 m from the entrance	June 17, 1912	1	NSc 1912
Insula 7	P. Paquius Proculus' house, on a bed in an inner room	March 5, 1924	1	Arch. Pompei, GS 1924
	M. Fabius Amandio's house, in the southwest corner of a room	March 1924	1	Arch. Pompei, GS 1924
	P. Cornelius Tages' house, in the southwest corner of the room to the right of the entrance	August 4, 1926	1 (man)	Arch. Pompei, GS 1926; NSc 1929
Insula 9	Astylus' shop	January 24, 1936	1	Arch. Pompei, GS 1936
	House No. 1	January 28, 1913	1	NSc 1913
	Successus' house, in the peristyle	April 24, 1952	1	Arch. Pompei, GS 1952
	House No. 5, in the atrium	January 23, 1952	1	Arch. Pompei, GS 1952
	House No. 8, room No. 8	June 9, 1952	1 (boy)	Arch. Pompei, GS 1952
Insula 10	Possibly house No. 10, corner northeast of the atrium	October 11, 1952	4	Arch. Pompei, GS 1952
	Cerere's house, in the peristyle	October 23, 1951	1	Arch. Pompei, GS 1951
	Menandro's house, in the oecus No. 19	April 29, 1931	3 (1 boy and 1 woman)	Arch. Pompei, GS 1931; Maiuri, 1932 Maiuri, 1983 ; Maggi, 1974
	Menandro's house, room No. 43	May 29, 1932	(1 man and 1 girl)	Arch. Pompei, GS 1932; Maiuri, 1932 ; Maiuri, 1983 ; Brion, 1962 ; Maggi, 1974 ; De Vos, 1982
Insula 11	Saturninus' house	July 12–14, 1960	4	Arch. Pompei, GS 1960
Insula 12	Umbriicii's shop of garum, No. 8/14, second room west of the entrance	December 4, 1954	1	Arch. Pompei, GS 1954
	House No. 16, along the eastern side of the atrium	September 12, 1960	1	Arch. Pompei, GS 1960
Insula 14	Hospitium, to the top of the perimetrical wall of the atrium	December 7, 1957	1	Arch. Pompei, GS 1957
	Hospitium, behind room No. 8	December 12, 1957	5	Arch. Pompei, GS 1957
	Hospitium and thermopolium, room No. 12	March 16–21, 1992	3	De Simone, 1995
Insula 16	House No. 2, corner southeast of garden	April 15, 1959	1	Arch. Pompei, GS 1959
	House No. 2, in front of room No. 7	May 4, 1959	1	Arch. Pompei, GS 1959
	House No. 4, atrium	August 26, 1957	1 (boy)	Arch. Pompei, GS 1957
	House No. 4, tablinum	December 7, 1957	1	Arch. Pompei, GS 1957
Insula 21	House No. 4/5, ambulatory No. 3, corner southwest 30 m from the western wall	January 3, 1984	1	Arch. Pompei, GS 1984
Alley between Insulae 1 and 2	In the crossroads of the alley with Stabian road	June 15, 1872	1	G.d.S., II, 1870
Alley between Insulae 8 and 9	Near the perimetrical wall of house No. 1 (Insula 9)	October 13, 1951	1	Arch. Pompei, GS 1951
<i>Regio II</i>				
Insula 1	House No. 11/12	May 27, 1939	1	Arch. Pompei, GS 1939
Insula 3	Pottery shop (No. 7/9)	October 9, 1952	3	Arch. Pompei, GS 1952

Appendix A (Continued).

Regio and Insula	Location	Data of recovery	No. of corpses	References
Insula 7, great gymnasium	Along the western arcade	September 16, 1936– February 10, 1938	4	Arch. Pompei, GS 1937–38; NSc 1939
	Along the southern arcade	September 16, 1936– February 10, 1938	1	Arch. Pompei, GS 1937–38; NSc 1939
	Along the western arcade	September 1, 1939	1	Arch. Pompei, GS 1939
Insula 8	Corner southwest of western arcade	October 18, 1952	1	Arch. Pompei, GS 1952
	House No. 2/3, a room north of the garden	June 26, 1953	1 (boy)	Arch. Pompei, GS 1953
	House No. 2/3, a room south of the entrance	May 11, 1954	7 (3 children)	Arch. Pompei, GS 1953
<i>Regio III</i>				
Insula 2	A. Trebius Valens' house, peristyle	December 12, 1915	4 (1 boy and 1 woman)	NSc 1916
Insula 6	Pherusa's thermopolium	March 11, 1935	1	Arch. Pompei, GS 1935
Insula 9	Astylus's thermopolium	December 13, 1902	2 (1 boy)	NSc 1905
	Astylus's thermopolium, northeast corner of the shop	April 1, 1903	2	NSc 1905
<i>Regio IV</i>				
Insula 2	House d, to the right of the entrance	December 27, 1902	1	NSc 1905
Insula 5	Near Nola road	January 23, 1870	1	G.d.S., II, 1870
<i>Regio V</i>				
Insula 1	House No. 7, room near the peristyle	September 26, 1837	1	PAH, 2, V, 1862
	House No. 13	September 10, 1875	1 (woman)	G.d.S., III, 1874
	Hospitium and pistrinum (No. 14/15) behind the counter	September 9, 1875	6	G.d.S., III, 1874; Ruggiero, 1879
Insula 2	House d, room to the left of the atrium	February 1, 1884	1	NSc 1884
	N. Herrennius Castus' house	August 14, 1875	2	G.d.S., III, 1874
	N. Herrennius Castus' house, second room to the right of the atrium	April 15, 1891	1	Arch. Pompei, GS 1890–92
	N. Herrennius Castus' house	August 26, 1891	1	NSc 1891
Insula 3	Triclinium house (No. 4), second room to the left of the atrium	April 21, 1885	3	NSc 1885
	Shop No. 1	June 13, 1902	1	NSc 1902
	Shop No. 3	March 17, 1885	1	NSc 1885
	House No. 4	January 22, 1902	3 (1 child)	NSc 1902
	House No. 4	December 6, 1927	1	Arch. Pompei, GS 1927
Insula 4	House No. 7, at the entrance	January 16, 1902	2	NSc 1902
	House No. 3, atrium near impluvium	April 11, 1899	1	NSc 1899
	Spatalus' house, room behind the entrance	October 23, 1899	1	NSc 1899
	M. Lucretius Fronto's house, room No. 14	December 27, 1900	8 (1 woman and 3 children)	NSc 1900; <i>Pitture e Mosaici</i> , III, 1991
Insula 4	House No. 13	April 19, 1903	2	NSc 1905
	House b, first room to the right of the entrance	April 14, 1901	4 (1 child)	NSc 1901
<i>Regio VI</i>				
Insula 1	Vestal house, in a corridor	August 30, 1787	1	PAH, 1, II, 1860; Romanelli, 1811 ; Vinci, 1830 ; Breton, 1855 ; D'Aloe, 1860 ; Beulé, 1872 ; Thédénat, 1906 ; Brion, 1962
	Thermopolium No. 17/18	March 12, 1789	1	PAH, 1, 1860; De Jorio, 1836

Appendix A (Continued).

Regio and Insula	Location	Data of recovery	No. of corpses	References
Insula 2	Shops No. 2/3	February 10, 1808	2	PAH, 1, 1860
Insula 6	Pansa's house, a room to the left of the peristyle	January 20, 1814	5 (2 men and 3 children)	PAH, 1, III, 1860; Bonucci, 1827; Vinci, 1830; De Jorio, 1836
Insula 8	Shop No. 7/8	Unknown	1	Bonucci, 1827; D'Aloe, 1860; Vinci, 1830
Insula 9	Meleagro's house, room No. 44	August 9, 1842	1 (woman)	PAH, 2, V, 1862
	Dioscuri's house, at the entrance	January 30, 1829	1 (woman)	PAH, 2, IV, 1862; Breton, 1855; D'Aloe, 1860
Insula 10	Five skeletons house, at the entrance	October 31, 1827	5 (2 women)	PAH, 2, IV, 1862; Breton, 1855; D'Aloe, 1860
Insula 11	House No. 8/10, room to the right of the atrium	May 20, 1835	1	PAH, 2, IV, 1862
Insula 12	Faunus' house	April 12, 1831	1	PAH, 2, V, 1862
	Faunus' house, in the kitchen	May 29, 1832	2 (1 man and 1 girl)	PAH, 2, V, 1862
Insula 13	House No. 6, first room to the left of perystyle	March 30, 1874	1	G.d.S., III, 1874
Insula 14	Salvius' house	August 5–7, 1876	2	NSc 1876
	C. Poppaeus Firmus' house, room the the right of the perystyle	June 2, 1877	2	NSc 1877
Insula 15	House No. 7/8, room c	March 22, 1898	1	NSc 1898
	House and thermopolium No. 13/15, a room on the western side of the garden	November 30, 1897	1	NSc 1897
	Cinnius Fortunatus' house, room d	June 26, 1897	1	NSc 1897
	Cinnius Fortunatus' house, room on the southern side of the atrium	June 17, 1899	1	NSc 1899
	House No. 23, room p	June 23, 1897	1	NSc 1897
	House No. 23, room k	April 28, 1898	2	NSc 1898
	House No. 23, room to the left of triclinium	June 8/22, 1899	4	NSc 1899
	House No. 23, third room on the northern side of the perystyle	November 4, 1900	1	NSc 1900
Insula 16	Thermopolium (No. 1/2), room to the left of the entrance	May 7, 1903	1	NSc 1906
	House No. 29/30, room to the left of the entrance	August 29, 1904	1	NSc 1908
Insula 17	House of the golden bracelet	Unknown	1 (man)	Unpublished
Via consolare	Near Herculaneum gate	March 29 1777	2 (man and girl)	PAH, 1, I, 1860
Regio VII				
Insula 1	Stabiae baths, entrance	July 20, 1855	3 (1 woman)	PAH, 2, VI, 1862
	Shop No. 16	October 1, 1862	1	Arch. Napoli, GS 1862
	Shop No. 26	January 14, 1852	2	PAH, 2, VI, 1862
	Vibia and Ameia's shop	May 27, 1852	2	PAH, 2, VI, 1862
	House No. 32	August 26, 1862	1	Arch. Napoli, GS 1862
	M. Caesius Blandus' house	September 20, 1862	1	Arch. Napoli, GS 1862
Insula 2	House No. 44/46	April 28, 1856	4	Arch. Napoli, GS 1865
	House of Potitus and Elainus	August 28, 1865	1	Arch. Napoli, GS 1865
Insula 3	House No. 4/7	November 13, 1867	8	Arch. Napoli, GS 1867; Ruggiero, 1879
	House No. 25	August 8, 1867	1	Arch. Napoli, GS 1867
	M. Spurius Mesor's house	January 27, 1864	1	Arch. Napoli, GS 1864

Appendix A (Continued).

Regio and Insula	Location	Data of recovery	No. of corpses	References
Insula 4	Shop in front of Forum baths	August 1823	2	De Jorio, 1836; PAH, 2, IV, 1862
	Shops and buildings along the road in front of Forum Baths	Unknown	1	Bonucci, 1827; Vinci, 1830
	Shop No. 11	February 25, 1859	1	PAH, 2, VI, 1862
	House No. 31/51, in the corridor to the left of the entrance of Via della fortuna	October 27, 1833	2	PAH, 2, V, 1862
	Shop No. 52	June 1, 1833	2	PAH, 2, V, 1862; Bull. Ist., 1833
	Shop No. 52	June 11, 1833	2	PAH, 2, V, 1862
	House No. 59	October 27, 1833	1	PAH, 2, V, 1862
Insula 5	Shop No. 11	October 26, 1863	1	Arch. Napoli, GS 1863
Insula 7	Romolo and Remo's house, first room to the right of the atrium	October 14, 1864	3 (1 boy)	Arch. Napoli, GS 1864; G.d.S., II, 1870
	Romolo and Remo's house, apotheca	November 10, 1864	1	Arch. Napoli, GS 1864; G.d.S., II, 1870
	Romolo and Remo's house, room to the right after the tablinum	October 16–17, 1871	2	G.d.S., II, 1870
Insula 8	Jupiter's temple, near the arcade of Forum	May 5, 1818	2 (1 under a crushed column)	PAH, 1, III, 1860; Bonucci, 1827; Vinci, 1830; De Jorio, 1836; Beulé, 1872
	Jupiter's temple, on the floor of the arcade of Forum	July 2, 1818	1	PAH, 1, III, 1860;
Insula 10	Shop No. 10	September 23, 1863	2	Arch. Napoli, GS 1863
Insula 11	Hospitium and caupona, left side of peristyle	October 30, 1862	1	Arch. Napoli, GS 1862
Insula 12	Sabinus' caupona	July 29, 1862	2	Arch. Napoli, GS 1862
	Shop No. 17/21	July 26, 1862	1	Arch. Napoli, GS 1862
	Building near Eumachia alley	January 28, 1863	2	Arch. Pompei, GS 1863
Insula 15	Sailor's house, tablinum	March 9, 1872	1	Bull. Ist. 1872
	House No. 9/10, third room of the right side of the atrium	September 25, 1872	1	G.d.S. 1872
	A. Octavius Primus' house	July 19, 1872	1	G.d.S. 1872
	A. Octavius Primus' house, room to the right of the tablinum	February 8–10, 1873	2	G.d.S., III, 1874
Insula 16	A. Umbricius Scaurus' house	October 15, 1959	1	Arch. Pompei, GS 1959
	M. Fabius Rufus' house, triclinium	December 11, 1961	3	Arch. Pompei, GS 1861;
'Soprastanti' alley	Near Insula 7	June 13, 1818	1	PAH, 1, III, 1860
<i>Regio VIII</i>				
Insula 1	Probably in the Venus' temple	January 30, 1863	1	Arch. Pompei, GS 1863
Insula 2	Joseph II's house, near the oven	June 20, 1767	1 (man)	PAH, 1, I, 1860; Mazois, 1824
	Joseph II's house	April 7, 1769	2 (1 woman)	PAH, 1, I, 1860; Bonucci, 1827; Romanelli, 1811; Vinci, 1830; Breton, 1855; De Vos, 1982
Insula 4	House No. 4/9	April 25, 1853	1	PAH, 2, VI, 1862
	House No. 4/9	January 30, 1861	1 (woman)	Arch. Napoli, GS 1861; Magaldi, 1930
	Severus and Ianuarius' taberna	April 23, 1856	4	PAH, 2, VI, 1862
	T. Mescinius, at the entrance of tablinium	January 21, 1861	1	Arch. Napoli, GS 1861
	In front of Iside temple	March 1, 1861	1	Arch. Napoli, GS 1861

Appendix A (Continued).

Regio and Insula	Location	Data of recovery	No. of corpses	References
Insula 5	Shops No. 39/40	September 26, 1813	1 (girl)	PAH, 1, III, 1860
	Shops No. 39/40	April 27, 1815	1	PAH, 1, III, 1860
	Shop No. 1	January 13, 1819	1	PAH, 2, IV, 1862
	Acceptus and Euhodia's house, in the corridor to the left of the atrium	May 21, 1882	3 (1 woman)	NSc 1882
Insula 7	Iside temple, room h (ecclesiasterion)	May 10, 1776	1 (man)	PAH, 1, I, 1860; Romanelli, 1811; Bonucci, 1827; Vinci, 1830; Mazois, 1838; D'Aloe, 1860
	Iside temple	Unknown	1	Latapie, 1776; Romanelli, 1811; Bonucci, 1827; Vinci, 1830; Mazois, 1838; D'Aloe, 1860
Abbondanza road	Monumental four-sided portico of the theatres, under the staircase	December 5, 1767	1	PAH, 1, I, 1860; De Jorio, 1836; De Vos, 1982
	Monumental four-sided portico of the theatres	January 8, 1774	1	PAH, 1, I, 1860
	Near the honorary arch, at the crossroads with Stabiana road	August 12, 1853	3	PAH, 2, VI, 1862; Arch. Nap., 2, 1854; Magaldi, 1930
	Iside temple road	Along the road	July 20, 1853	1
Regio IX				
Insula 1	Fabritius' taberna	May 12, 1853	2	PAH, 2, VI, 1862
	Shop No. 10	September 18, 1857	1	PAH, 2, VI, 1862
	Shop No. 11	May 27, 1856	1	PAH, 2, VI, 1862
	Shop No. 14	October 11, 1857	1	PAH, 2, VI, 1862
	M. Epidius Rufus' house	March 6–8, 1866	3	Arch. Napoli, GS 1866
	M. Epidius Rufus' house	May 9, 1866	1	Arch. Napoli, GS 1866
	M. Epidius Sabinus' house, on the kitchen floor	March 18, 1867	1	Arch. Pompei, GS 1867
Insula 2	Phoebius' taberna	September 11, 1846	1	PAH, 2, V, 1862
	Shops No. 1/3	October 12, 1851	2 (1 girl)	D'Aloe, 1860
	Shop No. 3	October 21, 1851	1	PAH, 2, VI, 1862
	Hilarius' taberna	October 29, 1851	1	PAH, 2, VI, 1862
	House No. 7/8	September 20, 1862	1	Arch. Pompei, GS 1862
	T. Dentatius Panthera's house, in a room near the entrance	March 8, 1869	1	G.d.S., I, 1868
	House No. 17, room to the left of the atrium	January 20, 1874	2	G.d.S., III, 1874
	Curvius Marcellus' house, upper floor	November 17, 1869	2	G.d.S., I, 1868; Beulé, 1872; Ruggiero, 1879
	Curvius Marcellus' house, upper floor	November 18–20, 1869	9 (2 women)	G.d.S., I, 1868; Beulé, 1872; Fiorelli, 1875; Ruggiero, 1879
	Curvius Marcellus' house	February 3, 1870	2	G.d.S., II, 1870; Arch. Pompei, GS 1870
	House No. 19/21	March 24, 1871	1	G.d.S., II, 1870
	House No. 27	March 25, 1870	1	G.d.S., II, 1870
	House No. 27, on the left side of the house	May 10, 1870	4	G.d.S., II, 1870

Appendix A (Continued).

Regio and Insula	Location	Data of recovery	No. of corpses	References
Insula 3	M. Lucretius' house, tablinum	April 14, 1847	1	PAH, 2, V, 1862
	M. Lucretius' house, in a corridor near the tablinum, on a staircase	April 20, 1847	1	Breton, 1855
	Fabius Celer's caupona	March 25, 1870	1	G.d.S., II, 1870
	Philocalus' house	March 1, 1871	1	G.d.S., II, 1870
	Philocalus' house	April 26, 1871	1	G.d.S., II, 1870
	Q. Sallustius Inventus' house	August 18, 1870	2	G.d.S., II, 1870
	Shop between No. 16 and 18	March 28, 1871	3	G.d.S., II, 1871
Insula 5	House No. 2, rooms to the right of the atrium	September 25, 1879	8 (3 in the first room, 4 in the third room and 1 in the fourth room)	NSc 1879
Insula 6	Poppaeus Primus' house, room f	October 15, 1877	1	Bull. Ist. 1879
	Oppius Gratus' house, triclinium	November/December 1878	1 (man)	NSc 1878; Magaldi, 1930
	Oppius Gratus' house, right arcade of the peristyle	November 11, 1878	1	NSc 1878
Insula 7	Oppius Gratus' house, room to the left of the peristyle	March 30, 1879	2	NSc 1879
	Shop F	February 18, 1880	1	NSc 1880
	House No. 19, room c	January 14, 1881	1	NSc 1881
Insula 8	Tertius' hospitium	November 22, 1870	1	G.d.S., II, 1870
	House No. 3/6	June 3, 1879	1 (woman)	NSc 1879
Insula 11	House No. 3/6, in a room near the peristyle	September 25, 1879	2	NSc 1879
	Asellina's thermopolium	Unknown	1	Spinazzola, 1953
Insula 13	C. Julius Polybius' house, room z	June 18, 1975	2	Arch. Pompei, GS 1975
<i>Unknown location</i>	Unknown location	May 9–10, 1758	6	PAH, 1, II, 1860
	Along Stabiana road	July 4, 1800	1	PAH, 1, II, 1860
	Unknown building along Mercurio road	1827	3 (1 woman)	D'Aloe, 1860
	Outside the four-sided portico of the theatres	October 24, 1851	1 (boy)	PAH, 2, VI, 1862
	Shop No. 24 (Regio I, Insula 4, or Regio IX, Insula 1)	November 27, 1858	1	PAH, 2, IV, 1862
	Joseph II's house	August 29, 1767	Some skeletons	PAH, 1, I, 1860
<i>Indeterminate findings</i>	Four-sided portico of the theatres, near the entrance of the eastern side	August 17, 1798	Bones of skeletons	PAH, 1, II, 1860
	Championnet's house	1779	Some skeletons of women	Romanelli, 1811; Vinci, 1830; Breton, 1855; D'Aloe, 1860
	Near 'Marina' gate	June 24, 1813	Humans bones	PAH, 1, III, 1860
	Faunus' house	April 12, 1831	Other skeletons	PAH, 2, V, 1862
	House No. 18 (VI, 7)	March 7, 1839	Many human bones	PAH, 3, 1864
	Shop No. 11 (I, 3)	January 8, 1845	Many human bones	PAH, 2, V, 1862
	Along 'Queen' road	October 21, 1851	Few human bones	PAH, 2, VI, 1862
	Shop No. 27 (VII, 1)	December 1, 1851	Few human bones	PAH, 2, VI, 1862
	Along 'Stabiana' road	January 13, 1852	Some human bones	PAH, 2, VI, 1862
	Along 'Stabiana' road	May 17, 1852	Some human bones	PAH, 2, VI, 1862

Appendix A (Continued).

Regio and Insula	Location	Data of recovery	No. of corpses	References
	Along 'Stabiana' road	June 15, 1853	Human bones	PAH, 2, VI, 1862
	Primus' caupona (VII, 4)	March 30, 1857	Some human bones	PAH, 2, VI, 1862
	Shop No. 11 (VII, 4)	March 13, 1861	Some bones	Arch. Napoli, GS, 1861
	In front of Iside's temple (VII, 4)	March 15, 1861	Some bones	Arch. Napoli, GS, 1862
	House No. 36 (VII, 1)	August 9, 1862	Some bones	Arch. Napoli, GS, 1862
	House No. 27 (VII, 12)	February 18, 1863	Some bones	Arch. Napoli, GS, 1863
	Shop to the right of 'Augustali' road	September 2, 1863	Some bones	Arch. Napoli, GS, 1863
	House No. 5 (I, 16)	1956	Numerous skeletons (some female)	Arch. Pompei, GS, 1956

Data collected from the papers listed in the references and from the following archives (abbreviations in parentheses): *Bullettino Archeologico Napoletano* (Bull. Arch. Nap.); *Bullettino degli annali dell'Istituto di Corrispondenza Archeologica* (Bull. Ist.); *Notizie degli Scavi di Antichità* (NSc); *Soprintendenza Archeologica di Napoli – Archivio Storico* (Arch. Napoli, GS); *Soprintendenza Archeologica di Pompei – Archivio Fotografico*, *Soprintendenza Archeologica di Pompei – Archivio Ufficio Scavi di Pompei*, *Giornali di Scavo* (Arch. Pompei, GS); *Soprintendenza Archeologica di Pompei – Archivio Ufficio Scavi di Pompei*, *Libretta di Scavo* (Arch. Pompei, LS); *Giornale degli scavi di Pompei* (G.d.S.); G. Fiorelli, *Pompeianarum Antiquitatum Historia* (PAH).

Appendix B

Corpses found within the PDCs deposit

Regio and Insula	Location	Data of recovery	No. of corpses	References
<i>External area</i>	Villa dei Misteri, main entrance	September 24, 1929	1 (girl)	Arch. Pompei, GS 1929; Maiuri, 1931
	Villa dei Misteri, room No. 35	April 29–June, 1930	1 (man)	Maiuri, 1931
	Villa dei Misteri, cryptoporticus	June 16, 1930	4 (1 woman)	Arch. Pompei, GS 1930; Maiuri, 1931
	Diomedea villa, cryptoporticus	December 12, 1772	20 (2 boys and 2 women)	PAH, 1, I, 1860; Bull. Arch. Napoli, 1, 1843; Mazois, 1824 ; Bonucci, 1827 ; Vinci, 1830 ; De Jorio, 1836 ; Breton, 1855 ; D'Aloe, 1860 ; Beulé, 1872 ; Thédénat, 1906 ; Magaldi, 1930 ; De Vos, 1982
	Diomedea villa, outside the cryptoporticus	February 6–13, 1773	3 (1 man and 1 child)	PAH, 1, I, 1860; Beulé, 1872
	Diomedea villa, in a room outside an underground corridor	February 20 1773	4	PAH, 1, I, 1860; Beulé, 1872
	Diomedea villa, ground floor	May 29, 1773	1	PAH, 1, I, 1860; De Jorio, 1836 ; Beulé, 1872
	Diomedea villa	July 30, 1774	1 (woman)	PAH, 1, I, 1860; Beulé, 1872
	Tombs road, near Diomedea villa	October 21, 29, and November 5, 1774	5	PAH, 1, I, 1860; Beulé, 1872
	Tombs road, near Diomedea villa	February 29, 1812	1	PAH, 1, III, 1860
	Tombs road, near Diomedea villa	July 18, 1812	3	PAH, 1, III, 1860
	Tombs road, near M. Alleius	October 10, 1812	2	PAH, 1, III, 1860
	Libella's tomb			
	Tombs road, near the shops of 'villa delle colonne a mosaico'	January 11–February 1, 1812	3	PAH, 1, III, 1860; Bonucci, 1827 ; De Jorio, 1836 ; Beulé, 1872

Appendix B (Continued).

Regio and Insula	Location	Data of recovery	No. of corpses	References
	Tombs road, between ‘portico delle osterie’ and ‘villa delle colonne a mosaico’	November 21, 1812	5 (3 women and 1 child)	PAH, 1, III, 1860; De Clarac, 1813 ; Mazois, 1824 ; Bonucci, 1827 ; Vinci, 1830 ; De Jorio, 1836 ; D’Aloe, 1860 ; Beulé, 1872 ; Thédénat, 1906 ; Brion, 1962
	Tombs road, probably near ‘villa delle colonne a mosaico’	October 24, 1812	1	PAH, 1, III, 1860
	Tombs road, probably near ‘villa delle colonne a mosaico’	October 31, 1812	1 (woman)	PAH, 1, III, 1860
	‘villa delle colonne a mosaico’ cellars	October 17, 1905	1	NSc 1910; De Vos, 1982
	‘villa delle colonne a mosaico’, cellar t	October 31, 1905	1	NSc 1910
	T. Siminius Stephanus’ villa, outside Vesuvius gate	August 26 and October 16, 1898	13 (5 near the entrance of room V, 3 in room V and 5 in room X)	NSc 1898
	T. Siminius Stephanus’ villa, outside Vesuvius gate	September 25, 1899	2	Stefani, 1996
	Vesuvius gate, 20 m south of villa with shop found outside the city wall	October 3, 1900	1	NSc 1900
	Outside Vesuvius gate	December 1, 1927	1	Arch. Pompei, GS 1927
	Nola gate, near Aesquillia	July 1908	2 (1 child)	NSc 1910
	Polla’s tomb			
	Nola gate, near Aesquillia	September 22–24, 1908	1	NSc 1910
	Polla’s tomb			
	Nola gate, west of Aesquillia	February 1911	1 (woman)	NSc 1911
	Polla’s tomb			
	Nola gate, in the southeast corner of Aesquillia Polla’s tomb	April 4, 1911	1	NSc 1911
	Nola gate, in the southeast corner of Aesquillia Polla’s tomb	December 1911	1	NSc 1911
	Nola gate, near M. Obellius Firmus’ tomb	August 2–September 9, 1976	14 (2 women)	Arch. Pompei, GS 1976; De Caro, 1979
	Nola gate, near M. Obellius Firmus’ tomb	July 26–August 1, 1978	1	Arch. Pompei, GS 1978; De Caro, 1979
	Nocera gate, tower III	July 1956	1	Arch. Pompei, GS 1956
	Nocera gate, near gens Aninia tomb	July 22, 1954	1	D’Ambrosio and De Caro, 1983
	Nocera gate, near the city wall	September 1956	3 (1 woman)	Maiuri, 1983
	Nocera gate, near the city wall	May 1957	1	Maiuri 1983 ; Brion, 1962
	Outside Stabia gate	September 11, 1851	3	PAH, 2, VI, 1862
	Outside Stabia gate	Unknown	1	Fiorelli, 1875
	Outside Stabia gate	August 1–12, 1889	2	NSc 1889
	Outside Stabia gate	October 11, 1889	3	NSc 1889; Ruggiero, 1890
	Outside Stabia gate	November 7, 1889	1	NSc 1889
	Outside Stabia gate, 72 m to the right	March 12, 1890	1	NSc 1890
	Outside Marina gate, south of antiquarium	October 13–14, 1947	4 (2 women and 2 boys)	Arch. Pompei, GS 1947
	Marina gate, near suburban baths	April 28, 1960	1 (woman)	Arch. Pompei, GS 1960
	Marina gate, near suburban baths	May 7, 1960	1 (woman)	Arch. Pompei, GS 1960

Appendix B (Continued).

Regio and Insula	Location	Data of recovery	No. of corpses	References
<i>Regio I</i>				
Insula 3	Capella's house	March 16, 1869	1	G.d.S., I, 1868
Insula 4	House No. 2	April 5, 1853	1	PAH, 2, VI, 1862
	House No. 5	January 7–8, 1861	3	Arch. Napoli, 1862
	Possibly in a shop between No. 8 and 11	September 28, 1855	1	PAH, 2, VI, 1862
Insula 5	M. Vesonius Primus' shop	September 25, 1873	1	G.d.S., III, 1874
	M. Vesonius Primus' shop	April 18, 1874	2	G.d.S., III, 1874
Insula 6	House of cryptoporticus, second room of the eastern side	May 22, 1914	1	NSc 1914
	House of cryptoporticus, in the garden	June 22, 1914	2	NSc 1914; Spinazzola, 1953
	House of cryptoporticus, in the garden	July 2–22, 1914	6	NSc 1914; Magaldi, 1930 ; Spinazzola, 1953
	House of cryptoporticus, in the garden	September 14, 1914	1	NSc 1914; Spinazzola, 1953
Insula 7	Stephanus' phullonica	May 1912	1	NSc 1912
	P. Paquius Proculus	July 1923	7 (children)	Della Corte, 1930 ; Spinazzola, 1953 ; Brion, 1962 ; Etienne, 1973
	Sacerdos Amandus' house, vestibule	October 16–November 1924	9 (5 men, 1 girl and 1 child)	Arch. Pompei, GS 1924; NSC 1927; Della Corte, 1930
	P. Cornelius Tages' house, fauces	October 23 and November 3, 1925	4 (1 man, 1 woman and 1 child)	Arch. Pompei, GS 1925; NSC 1929
	P. Cornelius Tages' house, little room b	June 25, 1926	1 (man)	Arch. Pompei, GS 1926; NSC 1929;
	P. Cornelius Tages' house, room 3	July 8, 1926	1 (child)	Arch. Pompei, GS 1926; NSC 1929; Magaldi, 1930
	Niraemius' taberna	January 24, 1936	1	Arch. Pompei, GS 1936
Insula 9	House No. 1, near the peristyle	December 6, 1949	1 (man)	Arch. Pompei, GS 1949
	House No. 10	September 10, 1951	1	Arch. Pompei, GS 1951
Insula 10	Menandro's house, stabulum	March 24, 1932	3 (2 women and 1 child)	Arch. Pompei, GS 1932; Maiuri, 1932 ; Maggi, 1974
	Menandro's house, room No. 20	April 30, May 1 and June 2, 1931	10	Arch. Pompei, GS 1931; Maiuri, 1932 ; Brion, 1962 ; Maggi, 1974 ; De Vos, 1982
	House No. 7, oecus No. 9	January 9, 1933	2	Arch. Pompei, GS 1933; NSC 1934; De Vos, 1982
Insula 11	Shop No. 4, at the entrance	August 18, 1913	1	NSc 1913
	House No. 6/7, to the left side of the entrance	October 11–16, 1913	2 (1 man)	NSc 1913
	Building on the west side of the Insula	January 23, 1953	1	Arch. Pompei, GS 1953
	House No. 15, oecus No.9	June 1, 3 and 5, 1953	11 (1 woman, 1 boy and 2 children)	Arch. Pompei, GS 1953
Insula 15	House No. 2/4, near the entrance	February 9, 1955	9 (some women)	Arch. Pompei, LS No. 29
	Probably in the green areas of the insula	March 13 and April 8, 1961	2	Arch. Pompei, GS 1961
Insula 16	Shop No. 7	June 3–8, 1959	4	Arch. Pompei, GS 1959
Insula 21	Garden of the fugitives	April–May 1961	13 (3 children and 2 boys)	Arch. Pompei, GS 1961; Maiuri, 1986 ; De Vos, 1982

Appendix B (Continued).

Regio and Insula	Location	Data of recovery	No. of corpses	References
Insula 22	In the corner northwest of the insula	August 1989	10 (2 children, 1 girl and 1 woman)	Nappo, 1992; De Simone, 1997
Via dell'abbondanza	In front of P. Paquius Proculus' house	April 26, 1923	1	Arch. Pompei, GS 1923; Spinazzola, 1953
	Near the corner with Insula 13	May 27, 1914	1 (girl)	NSc 1914; Della Corte, 1930
Alley between Insulae 3 and 4	Along the sidewalk, near the crossroads with Stabian road	March 9, 1853	1	PAH, 2, VI, 1862
Alley between Insulae 4 and 6	A building in the alley	April 2, 1906	1 (woman)	NSc 1910
Alley between Insulae 6 and 10	In the alley	May 1915	1	NSc 1915
Alley between Insulae 8 and 9	In the alley	April 8–9, 1940	3	Arch. Pompei, GS 1940
	In the alley	May 31, 1951	1	Arch. Pompei, GS 1951
Alley between Insulae 10 and 19	Menandro's house, 4 m from the service entrance	November 15, 1932	2 (1 child)	Arch. Pompei, GS 1932
Alley between Insulae 14 and 15	In the alley	April 1957	1	Arch. Pompei, GS 1957
Alley between Insulae 15 and 16	In the alley	August 3, 1957	1	Arch. Pompei, GS 1957
Alley between Insulae 22 and 23	Near the excavated part of Insula 22	August 1989	1	Nappo, 1992
<i>Regio II</i>				
Insula 4	Iulia Felix' praedia, near the arcade of the baths	January 4, 1756	4	PAH, 1, I, 1860; Parslow, 1995
	Iulia Felix' praedia, near the eastern wall of the garden	January 23, 1952	1	Arch. Pompei, GS 1952
	Iulia Felix' praedia, peristyle	January 24/February 1, 1952	2	Arch. Pompei, GS 1952
	Iulia Felix' praedia, peristyle	January 29, 1952	1 (woman)	Arch. Pompei, GS 1952; Parslow, 1988
Insula 6	Under the entrance door of the arena	December 29, 1814	2 (1 woman)	PAH, 1, III, 1860
	In a corridor to the left of the arena entrance	January 5, 1815	2	PAH, 1, III, 1860
	In a corridor to the right of the arena entrance	January 8, 1815	1	PAH, 1, III, 1860
	In a corridor to the right of the arena entrance	January 12, 1815	1	PAH, 1, III, 1860
	12 m from the southern city wall and 16 m from the southwestern entrance of the arena	July 9, 1935	1	Arch. Pompei, GS 1935
	Along the southern city wall	August 14, 1935	1	Arch. Pompei, GS 1935
Insula 7, great gymnasium	Eastern wall, near the southern entrance	September 14, 1935	1	Arch. Pompei, GS 1935
	Eastern wall, near the central entrance	May 15, 1936	1	Arch. Pompei, GS 1936; NSc 1939
	8 m from natatio, toward the western arcade	June 6, 1936	1	Arch. Pompei, GS 1936
	Southwest corner of western arcade	July 27, 1936	1	Arch. Pompei, GS 1936
	Near the western side of natatio	October 29–30, 1936	4	Arch. Pompei, GS 1936
	Western arcade	November 20, 1936	1	Arch. Pompei, GS 1936
	Eastern wall, near central entrance	December 9–16, 1936	14 (adults and boys)	Arch. Pompei, GS 1937–1938; NSc 1939; De Vos, 1982

Appendix B (Continued).

Regio and Insula	Location	Data of recovery	No. of corpses	References
	Southwest natatio	April 15–17, 1937	17 (1 woman and 1 child)	Arch. Pompei, GS 1937–1938; NSc 1939
	Southern arcade, in the lavatory	September 16, 1937– February 10, 1938	18 (adults and boys)	Arch. Pompei, GS 1937–1938; NSc 1939; De Vos, 1982
	Southern arcade	September 16, 1937– February 10, 1938	1	Arch. Pompei, GS 1937–1938; NSc 1939
	Southern arcade, near the eastern end	September 16, 1937– February 10, 1938	2	Arch. Pompei, GS 1937–1938; NSc 1939
	Western arcade	September 2–11, 1939	3	Arch. Pompei, GS 1939
	A place at 20 m from the southern arcade and 15 m from the western arcade	January 9, 1951	1	Arch. Pompei, GS 1951
	Southern arcade	April 25, 1951	1	Arch. Pompei, GS 1951
	Southern arcade	August 18, 1951	1	Arch. Pompei, GS 1951
	Southwest corner of the western arcade	October 8, 1952	1	Arch. Pompei, GS 1952
Insula 8	House No. 6, a room near the northeast corner	September 22, 1936	2	Arch. Pompei, GS 1936
	House No. 6, west of the summer triclinium	May 11, 1953	1	Arch. Pompei, GS 1953
Via dell'Abbondanza	Insula 2, to the left of Messius Ampliatius' house	November– December, 1918	3	Spinazzola, 1953 ; Della Corte, 1930
Alley between Insulae 2 and 3	Near Via dell'Abbondanza	September 8–12, 1933	9 (1 woman and 1 child)	Arch. Pompei, GS 1933
<i>Regio III</i>				
Insula 8	North of Sarno gate	November 3, 1959	1	Arch. Pompei, GS 1959
Via dell'Abbondanza	In front of Predicini Corneli's taberna	July 2, 1913	1	NSc 1913
	Corner southeast Insula 2	March 30, 1914	1	NSc 1914
	Insula 7	December 6, 1961	1	Arch. Pompei, GS 1961
<i>Regio V</i>				
Insula 1	A shop between No. 29 and 32	April 19, 1748	1	PAH, 1, I, 1860; De Jorio, 1827 ; Beulé, 1872 ; Parslow, 1995
Insula 2	House No. 4, fourth room to the right of the atrium	March 26, 1884	1	NSc 1884
Insula 3	In the peristyle of a house in the southwest part of the insula, probably behind shop No. 2	June 9, 1902	8 (1 woman and 1 child)	NSc 1902
	House No. 4, in the garden	January 15–25, 1946	5 (1 woman)	Arch. Pompei, GS 1946
	Probably house No. 4	October 4, 1901	1	NSc 1902
Insula 4	Spatalus' caupona, room a	March 8, 1899	2	NSc 1899
	House No. 10, second room to the right of the entrance	March 26, 1900	1	NSc 1900
	M. Samellius Modestus, first room to the left of the atrium	May 1, 1902	5 (1 woman)	Arch. Pompei, GS 1902; NSc 1902
Insula 5	Gladiator's barracks, near the eastern well of the peristyle	March 24, 1899	1	NSc 1899
Alley between Insulae 1 and 2	House No. 7	October 11, 1837	1	PAH, 2, V, 1862
Alley between Insulae 2 and 7	In front No. 1/2	February 15, 1908	1	NSc 1910
<i>Regio VI</i>				
Insula 1	Building near Herculaneum gate, eastern side of the garden	November 9, 1786	1	PAH, 1, II, 1860, Beulé, 1872

Appendix B (Continued).

Regio and Insula	Location	Data of recovery	No. of corpses	References
Insula 6	Pansa's house	May 19, 1817	4 (women)	PAH, 3, 1864; Breton, 1855; Etienne, 1973
Insula 11	House No. 8/10, peristyle	March 13–22, 1835	1 (woman)	PAH, 2, V, 1862; D'Aloe, 1860
	House No. 8/10, shops near the entrance	April 30, 1835	2	PAH, 2, V, 1862
Insula 12	Fauno's house, tablinum	April 12, 1832	1 (woman)	PAH, 2, V, 1862; Beulé, 1872; Fiorelli, 1875; Magaldi, 1930
	Fauno's house, rustic rooms	January 22, 1900	4 (3 boys)	NSc 1900; De Vos, 1982; Arch. Pompei, GS 1900
Insula 13	Near P. Gavius Proculus' house	June 8, 1876	1	NSc 1876
Insula 14	House No. 25	March 5, 1875	2	G.d.S., III, 1874
	Poppaeus Sabinus' house	November 1876	2	Bull. Isr. 1878
Insula 17	Near Herculaneum gate	June 19–26, July 10, 1779	5	PAH, 1, I, 1860
	Julius Polybius' house	November 25, 1775	12	PAH, 1, I, 1860
	Julius Polybius' house	October 2, 1783	3	PAH, 1, II, 1860
	House of the Golden Bracelet, room No. 9	June 3–6, 1974	4 (2 children and 1 woman)	Cerulli Irelli, 1975; Stefani, 1993
Via di Mercurio	In front of Dioscuri's house	June 4–7, 1828	9	PAH, 2, IV, 1862; De Jorio, 1836
Via Consolare	Alley south of Sallustio's house	1870	4 (women)	Bonucci, 1827; Vinci, 1830; Breton, 1855; D'Aloe, 1860; Beulé, 1872
Alley between Insula 1 and city wall	Near Vestal's house	June 6–14, 1787	10 (1 woman and 1 child)	PAH, 1, II, 1860; De Jorio, 1836; Breton, 1855; D'Aloe, 1860; Beulé, 1872
Alley between Insulae 3 and 4	Fortunata's thermopolium	May 29, 1810	1	PAH, 1, I, 1860
Alley between Insulae 12 and 13	Near Fauno's house	February 14, 1836	6	PAH, 2, V, 1862
Alley between Insulae 14 and 16 road	Near the crossroads with Vesuvio	April 23, 1875	2 (1 man and 1 girl)	G.d.S., III, 1874
<i>Regio VII</i>				
Insula 1	Stabian baths, in the corridor near the calidarium of the female section	September 11, 1856	5	PAH, 2, VI, 1862
	Shop No. 20	August 6, 1852	1	PAH, 2, VI, 1862
	Siricus' home	March 24, 1852	5	PAH, 2, VI, 1862; D'Aloe, 1860
Insula 2	Siricus' home	April 5, 1852	1 (man)	PAH, 2, VI, 1862
	M. Gavius Rufus' house	March 12, 1868	7	PAH, 2, V, 1862; Beulé, 1872; Fiorelli, 1875; Thédénat, 1906
Insula 4	C. Vibius Italus' house	April 1867–January 1868	1 (man)	Fiorelli, 1898
	Fortuna's temple	November 7, 1823	1	PAH, 2, IV, 1862
Insula 11	House No. 59	February 26, 1834	1	PAH, 2, V, 1862
	Hospitium and caupona, peristyle	October 11, 1862	4 (1 woman)	Arch. Pompei, GS 1862; Thédénat, 1906
Insula 12	Building near Eumachia's alley	January 28, 1863	4	Arch. Napoli, 1863
Insula 14	Popidii's house	Unknown	1	Fiorelli, 1898; Thédénat, 1906
Insula 16	M. Castricius' house	Unknown	1	Unpublished
	M. Castricius' house	Unknown	2	Unpublished
	M. Fabius Rufus' house	November 1961	3	Arch. Pompei, GS 1961
Via Stabiana	The sidewalk in front of shop No. 16	August 12, 14 and September 21, 1852	3	PAH, 2, VI, 1862

Appendix B (Continued).

Regio and Insula	Location	Data of recovery	No. of corpses	References
Skeletons alley	Crossroads between Insulae 10/11/13/14	February 3–5, 1863	4 (1 man, 1 woman and 2 girls)	Beulé, 1872; Palumbo, 1913; Magaldi, 1930; Thédénat, 1906; Brion, 1962
Storto alley	In the alley	August 24, 1863	1	Arch. Napoli, 1863
Soprastanti alley	In the alley	Unknown	1 (woman)	Fiorelli, 1898
Alley between Insulae 1 and 14	Near the Stabian baths	September 14, 1858	1	PAH, 2, VI, 1862
<i>Regio VIII</i>				
Insula 1	Venus temple, room d	July 23, 1971	1	Arch. Pompei, GS 1971
Insula 2	A building south of basilica, a room near the entrance of the underground corridor	August 4, 1899	1 (child)	NSc 1899
	House No. 13, peristyle	March 20, 1826	2 (1 woman)	PAH, 3, 1864; Breton, 1855
	House No. 13, peristyle	April 7, 1826	2 (1 man and 1 woman)	PAH, 3, 1864; Bonucci, 1827; Vinci, 1830; De Jorio, 1836;
	House between No. 27/29	May 29 and June 9–12, 1826	7 (1 woman)	PAH, 2, IV, 1862; Bonucci, 1827; Vinci, 1830; Breton, 1855
	House No. 33/35	July 1, 1885	1	NSc 1885
Insula 4	Cornelius Rufus' house	March 21, 1861	1	Arch. Napoli, VIII, A2
	Probably in a shop between No. 18 and 20	July 11, 1853	2	PAH, 2, VI, 1862
Insula 6	Pistrinum No. 8/11	March 17, 1882	2	NSc 1882
	Pistrinum No. 8/11	May 20, 1882	2 (1 woman)	NSc 1882
	House No. 5, southwest corner of the garden	December 28, 1882	1 (man)	NSc 1882
Insula 7	Great theatre, near the arcade behind the scene	August 11, 1764	1 (man)	PAH, 1, I, 1860
	Four-sided portico of the theatres, room No. 8	December 20, 1766	4	PAH, 1, I, 1860; Romanelli, 1811; Mazois, 1824; Bonucci, 1827; Vinci, 1830; De Jorio, 1836; Beulé, 1872; Thédénat, 1906; Brion, 1962; De Vos, 1982
	Four-sided portico of the theatres, near the columns of the arcade	September 5, 1767	1	PAH, 1, I, 1860
	Four-sided portico of the theatres, room No. 7	December 19, 1767	2 (1 woman)	PAH, 1, I, 1860
	Four-sided portico of the theatres, room No. 7	January 9, 1768	18 (some boys and 1 woman)	PAH, 1, I, 1860; De Jorio, 1836; Thédénat, 1906; Brion, 1962; De Vos, 1982
	Four-sided portico of the theatres, near the entrance	April 16, 1768	34	PAH, 1, I, 1860; De Jorio, 1836;
	Four-sided portico of the theatres, the arcade behind the scene	October 30, 1779	1 (woman)	PAH, 1, I, 1860
	Four-sided portico of the theatres, the garden	May 2, 1793	2	PAH, 1, I, 1860
	Probably a shop between No. 10 and 15	May 13, 1795	2	PAH, 1, II, 1860
	Near cistern of the great theatre	May 12, 1796	3 (1 woman and 1 child)	PAH, 1, I, 1860; De Jorio, 1836;
	Triangular forum, arcade	June 5, 1813	1	PAH, 1, III, 1860; Bonucci, 1827; Vinci, 1830; De Jorio, 1836

Appendix B (Continued).

Regio and Insula	Location	Data of recovery	No. of corpses	References
Road between Insulae 4 and 7	On the road	November 21, 1812	1	PAH, 1, III, 1860; De Clarac, 1813; Mazois, 1824; Beulé, 1872; Thédénat, 1906
Alley between Insulae 5 and 6	Near Acceptus and Euhodia's house	January 24, 1882	2 (1 woman and 1 child)	NSc 1882; Magaldi, 1930
<i>Regio IX</i>				
Insula 1	M. Epidus Rufus' house	February 23–24, 1866	2	Arch. Napoli, VIII, A2
	M. Epidus Rufus' house	March 2, 1866	1	Arch. Napoli, VIII, A2
	M. Epidus Sabinus' house	June 8, 1866	3	Arch. Napoli, GS 1866
Insula 3	Shops between No. 6 and 8	September 17, 1846	1 (woman)	PAH, 2, V, 1862
Insula 4	Eastern side of the insula	June 1877	4 (2 women)	NSc 1877
Insula 12	Casti Amanti house	1987	3 (1 child, 1 woman, 1 man)	Varone, 1993
	North of Casti Amanti house (posticum)	November 4, 1997	3 (1 child)	Unpublished
Insula 13	C. Julyus Polybius' house, room hh	June 26–July 4, 1975	7 (1 woman, 1 child, 2 boys)	Arch. Pompei, GS, 1975; Castiglione Morelli Del Franco, 1982
	C. Julyus Polybius' house, room gg	July 17–18, 1975	4	Arch. Pompei, GS, 1975; Castiglione Morelli Del Franco, 1982
Insula 14	M. Obellius Firmus' house, ambulatory near the peristyle	March 6, 1911	1	NSc 1911
	M. Obellius Firmus' house, upper floor	April 30, 1911	7	NSc 1911
	M. Obellius Firmus' house, room to the right of the atrium	May 23, 1911	1	NSc 1911
	M. Obellius Firmus' house, at the entrance	October 1911	6 (2 boys and 1 woman)	NSc 1911; Magaldi, 1930
Via Stabiana	Sidewalk in front of shops No. 3/4 of Insula 1	August 13/14 and September 16, 1852	4	PAH, 2, VI, 1862
Alley between Insulae 3 and 4	In the alley	March 4, 1871	1	G.d.S., II, 1870
Alley between Insulae 11 and 12	Near the Casti Amanti house	October 26, 1995	2 (women)	Varone, Marturano, 1997
Unknown location	Near the entrance of a building of Via dei teatri	April 24, 1819	1	PAH, 2, VI, 1862
	Via stabiana	September 2, 1851	2	PAH, 2, IV, 1862
	Western part of forum	February 15, 1859	1	PAH, 2, VI, 1862
	Labirinto Alley	August 1, 1864	2	Arch. Napoli, VIII, A2
	Unknown location	Unknown	1 (boy)	Fiorelli, 1898
	Unknown location	Unknown	1 (man)	Fiorelli, 1898
	Probably Insula 2, regio VIII	Unknown	1	Arch. Fotog. Pompei 1905
<i>Indeterminate finds</i>	Underground room near the northern part of the city wall	October 12, 1818	Human skulls	PAH, 1, III, 1860
	Shop I	January 8, 1847	Some bones	PAH, 2, V, 1862
	Via stabiana, near the crossroads of theatres	April 17, 1848	Some human bones	PAH, 2, V, 1862
	Via stabiana, near the baths	February 26, 1853	Few human bones	PAH, 2, VI, 1862
	Near the farmhouse	March 17, 1853	Few human bones	PAH, 2, VI, 1862
	Skeletons alley	February 7, 1863	Few bones	Arch. Napoli, GS 1863
	M. Popius Rufus' house	March 3, 1897	Human bones	NSc 1897

Appendix B (Continued).

Regio and Insula	Location	Data of recovery	No. of corpses	References
	Regio II, Insula 5	January 18, 1936	Human bones	Arch. Pompei, GS, 1936
	Regio II, Insula 7, near the eastern arcade of the great gymnasium	November 18, 1952	Bones of fugitives	Arch. Pompei, GS, 1952
	Outside Nocera gate	Autumn 1956	Numerous fugitives	D'Ambrosio and De Caro, 1983
	Regio I, alley between Insulae 14 and 15	April 1957	Group of skeletons	Arch. Pompei, GS, 1957
	Regio I, Insula 15	May 26, 1961	Human bones	Arch. Pompei, GS, 1961
	Ma. Castricius' house	September 8, 1962	Skeletons	Arch. Pompei, GS, 1962

Data collected from the papers listed in the references and from the following archives (abbreviations in parentheses): *Bullettino Archeologico Napoletano* (Bull. Arch. Nap.); *Bullettino degli annali dell'Istituto di Corrispondenza Archeologica* (Bull. Ist.); *Notizie degli Scavi di Antichità* (NSc); *Soprintendenza Archeologica di Napoli – Archivio Storico* (Arch. Napoli, GS); *Soprintendenza Archeologica di Pompei – Archivio Fotografico*, *Soprintendenza Archeologica di Pompei – Archivio Ufficio Scavi di Pompei*, *Giornali di Scavo* (Arch. Pompei, GS); *Soprintendenza Archeologica di Pompei – Archivio Ufficio Scavi di Pompei*, *Libretta di Scavo* (Arch. Pompei, LS); *Giornale degli scavi di Pompei* (G.d.S.); G. Fiorelli, *Pompeianorum Antiquitatum Historia* (PAH).

References

- Archaeologie und Seismologie, 1995. Colloquium Boscoreale 26, 27/11/1993, Munchen.
- Avena, A., 1939. Giuseppe Fiorelli: Appunti autobiografici. Roma, pp. 27–28.
- Barberi, F., Cioni, R., Santacroce, R., Sbrana, A., Vecchi, R., 1989. Magmatic and phreatomagmatic phases in explosive eruptions of Vesuvius as deduced by grain size and component analysis of pyroclastic deposits. *J. Volcanol. Geotherm. Res.* 38, 287–307.
- Baxter, P.J., 1990. Medical effects of volcanic eruptions. *Bull. Volcanol.* 52, 532–544.
- Beulé, M., 1872. *Le drame du Vesuve*. Paris, 366 pp.
- Blong, R.J., 1984. *Volcanic Hazards*. Academic Press, New York, 411 pp.
- Bonucci, C., 1827. *Pompei descritta*. Napoli, 236 pp.
- Breton, E., 1855. *Pompeia*. Paris, 352 pp.
- Brion, M., 1962. *Pompei ed Ercolano: Grandezza e morte*. Novara, 242 pp.
- Brunn, H., 1863. *Scavi di Pompei*. Bull. Ist., 88–90.
- Capasso, L., Capasso, L., Caramiello, S., D'anastasio, R., Di Domenicantonio, L., Di Fabrizio, A., Di Nardo, F., La Verghetta, M., 2000. Paleobiologia della popolazione di Ercolano (79 d.C.). *Recenti Progress. Med.* 91, 288–296.
- Carey, S., Sigurdsson, H., 1987. Temporal variations in column height and magma discharge rate during the 79 A.D. eruption of Vesuvius. *Geol. Soc. Am. Bull.* 99, 303–314.
- Castiglione Morelli Del Franco, N., 1982. Le orficerie della casa di C. Giulio Polibio. *La Regione sotterrata dal Vesuvio*. Atti del Convegno Internazionale, 11–15 Novembre 1979, Napoli, pp. 789–808.
- Cerulli Irelli, M.G., 1975. *Notiziario*. In: *Cron. Pomp.*, I, pp. 246–247.
- Cioni, R., Marianelli, P., Sbrana, A. 1992. L'eruzione del 79 d.C.: Stratigrafia dei depositi ed impatto sugli insediamenti romani nel settore orientale e meridionale del Somma – Vesuvio. *R. St. Pomp.*, IV, pp. 179–198.
- Cioni, R., Sbrana, A., Gurioli, L., 1996. The deposits of AD 79 eruption. CEV-CMVD Workshop on Vesuvius decade volcano, pp. 17–23.
- Coticello, B., 1994. *Scienza, cultura e cronaca a Pompei nella prima metà del nostro secolo: Gli ultimi giorni di Pompei*. Napoli, pp. 15–25.
- Corti, E., 1957. *Ercolano e Pompei*. Torino, 243 pp.
- D'Alò, S., 1860. *Les ruines de Pompei*. Naples, 196 pp.
- D'Ambrosio, A., De Caro, S., 1983. *Un impegno per Pompei: Fotopiano e documentazione della necropoli di Porta Nocera*. Milano, pp. 23–32.
- D'Ambrosio, A., De Carolis, E., 1997. *I monili dall'area vesuviana*. Roma, 162 pp.
- D'Amore, C., Mallegni, F., Schiano Di Zenise, M., 1982. *Primi risultati degli studi sull'antropologia pompeiana del 79 d.C.* In: *La regione sotterrata dal Vesuvio*. Atti del Convegno Internazionale, 11–15 Novembre 1979, Napoli, pp. 927–943.
- Davenport, A.W.H., 1873. *The Buried Cities of Campania: Pompeii and Herculaneum*. London, 39 pp.
- De Caro, S., 1979. *Scavi nell'area fuori Porta Nola a Pompei*. In: *Cron. Pomp.*, V, pp. 61–101.
- De Caro, S., Guzzo, P.G., 1999. (A cura di) *Fiorelli Nel primo centenario della morte*. Atti Convegno Napoli, 1997. Napoli, 212 pp.
- De Carolis, E., 1990. *Gli sviluppi dell'archeologia pompeiana: 1748–1900*. In: *Fotografi a Pompei nell'800*. Firenze, pp. 11–19.
- De Carolis, E., 1997. *Testimonianze archeologiche in area vesuviana posteriori al 79 d.C.* In: *Archeologia Uomo Territorio*, 16, pp. 17–32.
- De Carolis, E., 1999. *Una città e la sua riscoperta*. In: *Homo Faber*. Milano, pp. 23–30.

- De Carolis, E., Patricelli, G., Ciarallo, A., 1998. Rinvenimenti di corpi umani nell'area urbana di Pompei. *Riv. di Studi Pompeiani*, IX, pp. 75–123.
- De Cesare, R., 1969. *La Fine di un Regno*. Milano, pp. 580–593.
- De Clarac, F., 1813. Fonille faite à Pompei en présence de S.M. la Reine des Deux Siciles le 18 Mars 1813. In: *Journal francais de Naples*, 4–7 Avril, pp. 20–21.
- De Jorio, A., 1827. *Plan de Pompei*.
- De Jorio, A., 1836. *Guida di Pompei con appendici*. Napoli, 176 pp.
- Della Corte, M., 1930. *Pompei: I Nuovi Scavi e Z'Anfiteatro*. Pompei, 100 pp.
- Delle Chiaje, S., 1853. Cenno anatomico-patologico sulle ossa umane scavate in Pompei, in *Filiatre-Sabazio*, XLVIII, p. 3.
- Descoudres, J. P., 1993. Did some Pompeians return to their city after the eruption of Mt. Vesuvius in A.D. 79? Observations in the House of the Coloured Capitals. In: *Ercolano 1738–1988, 250 anni di ricerca archeologica*. Roma, pp. 165–178.
- De Simone, A., 1995. I terremoti precedenti l'eruzione. Nuove attestazioni da recenti scavi. In: *Archaologie und Sismologie. Colloquium Boscoreale, 26–27/11/1993*, Munchen, pp. 37–43.
- De Simone, A., 1997. La Terra del Vesuvio: I dati archeologici e la cultura dell'Antico. In: *Mons Vesuvius* (a cura di G. Luongo). Napoli, pp. 27–42.
- De Spagnolis, M., Conticello, B., 1994. *Pons Sarni di Sciaati e la via Nuceria Pompeios*. Roma, 112 pp.
- De Vos, A.M., 1982. *Pompei Ercolano Stabia*. Bari, 380 pp.
- Dyer, T., 1883. *Pompeii: Its History, Buildings and Antiquities*. London, 579 pp.
- Etienne, R., 1973. *La vita Quotidiana a Pompei*. Milano, 487 pp.
- Fiorelli, G., 1860, 1862, 1864. *Pompeianarum Antiquitatum Historia*, 1, 2, 3. Napoli.
- Fiorelli, G., 1873. Gli scavi di Pompei dal 1861 al 1872. Napoli, pp. 12–14.
- Fiorelli, G., 1875. *Descrizione di Pompei*. Napoli, 461 pp.
- Fiorelli, G., 1898. *Guida di Pompei*. Napoli, pp. 92–93.
- Francis, P., 1976. *Volcanoes*. Penguin, Harmondsworth.
- Garcia, L., Garcia, Y., 1995. Pompei: Disordini e abusi. La relazione di Raffaele d'Ambra del 1848. In: *I Beni Culturali, Tutela e valorizzazione*, III, 6, 37–39; IV, 1, 1996, pp. 12–18.
- Gauthier, Th., Marcella, A., 1984. *Giornale degli Scavi di Pompei*, I, II, III (1868, 1870, 1874).
- Gell, W., 1832. *The Topography, Edifices and Ornaments of Pompeii, The Result of Excavations Since 1819*. Pompeiana I, London, 273 pp.
- Genovese, R.A., 1992. Fiorelli G. La tutela dei beni culturali dopo l'Unità d'Italia. Napoli, 146 pp.
- Grant, M., 1985. *Le città sepolte dal Vesuvio*. Vicenza, pp. 39–48.
- Guadagno, G., 1996. Il viaggio di Plinio il Vecchio verso la morte (PLIN., Ep., VI, 16). In: *R. St. Pomp.*, VI, pp. 63–76.
- Gusman, P., 1900. *Pompei, the City, its Life and Art*. London, 476 pp.
- Henneberg, M., Henneberg, R.J., 1999. Primi risultati di uno studio ad ampio raggio e ancora in corso sul materiale scheletrico umano di Pompei. *Catalogo della mostra Homo Faber, Electa Ed.*, 51–53.
- Ivanoff, S., 1859. Varie specie di soglie in Pompei ed indagini sul vero sito della fauce. In: *Annali dell'Istituto*, 105 pp.
- Kent, D.V., Ninkovich, D., Pescatore, T., Sparks, R.S.J., 1981. Palaeomagnetic determination of emplacement temperature of Vesuvius AD 79 pyroclastic deposits. *Nature* 290, 393–396.
- La Torre, G.F., 1988. Gli impianti commerciali ed artigianali nel tessuto urbano di Pompei. In: *Pompei L'informatica al servizio di una città antica*. Roma, pp. 73–102.
- Latapie, F., 1776. *Description des fouilles de Pompèii*. Introduzione di Pierre Barriere e note di Amedeo Maiuri. In: *Rend. Nap.*, XXVIII, pp. 1–28.
- Lazer, E., 1997. Pompeii AD 79: A population in flux. In: *Sequence and Space in Pompeii*. Oxford, pp. 102–120.
- Lippi, C., 1816. Fu l'acqua o il fuoco che distrusse Pompei e Ercolano? Napoli, 384 pp.
- Lirer, L., Pescatore, T., Booth, B., Walker, G.P.L., 1973. Two Plinian pumice-fall deposits from Somma-Vesuvius, Italy. *Geol. Soc. Am. Bull.* 84, 759–772.
- Lirer, L., Munno, R., Petrosino, P., Vinci, A., 1993. Tephrostratigraphy of the AD 79 pyroclastic deposits in perivolcanic areas of Mt. Vesuvio (Italy). *J. Volcanol. Geotherm. Res.* 58, 133–149.
- Luongo, G., Perrotta, A., Scarpati, C., 2003. Impact of 79 AD explosive eruption on Pompeii I: Relations amongst the depositional mechanisms of the pyroclastic products, the framework of the buildings and the associated destructive events. *J. Volcanol. Geotherm. Res.* (in press).
- Magaldi, E., 1930. *Pompei e il suo dolore*. Napoli, 119 pp.
- Maggi, G., 1974. *Archeologia magica di Amedeo Maiuri*. Napoli, pp. 113–114.
- Maiuri, A., 1931. *La Villa dei Misteri*. Roma, 138 pp.
- Maiuri, A., 1932. *La Casa del Menandro e il suo tesoro di argenterie*. Roma, 514 pp.
- Maiuri, A., 1948. *L'Antiquarium*. In: *Bicentenario degli Scavi di Pompei*. Napoli, pp. 9–30.
- Maiuri, A., 1950. Gli Scavi di Pompei dal 1879 al 1948. In: *Pompeiana*. Napoli, pp. 2–7.
- Maiuri, A., 1983. *Pompei ed Ercolano fra case e abitanti*. Firenze, pp. 34–38.
- Maiuri, A., 1986. *Pompei*. Roma, 156 pp.
- Mastrolorenzo, G., Petrone, P., Pagano, P., Incoronato, A., Baxter, P.J., Canzanella, A., Fattore L., 2001. Herculaneum victims of Vesuvius in AD 79. *Nature*, 769.
- Mau, A., 1899. *Pompeii its Life and Art*. London, p. 23.
- Mazois, F., 1824–1838. *Les ruines de Pompèii*. Paris, 335 pp.
- Minervini, G., 1855. Ossa e scheletri disseppelliti in Pompei. In: *Bull. Arch. Nap.*, nuova serie, 3, pp. 1–3.
- Nappo, S.C., 1992. Rinvenimento delle vittime dell'eruzione del 79 d.C. nella Regio 1, Ins 22. In: *Hyria* 63, XIX, Dicembre 1991–Marzo 1992, Nola, pp. 16–18.
- Nicolucci, G., 1882. *Crania Pompeiana*. In: *Atti della Reale*

- Accademia delle Scienze Fisiche e Matematiche, IX, 10, pp. 1–26.
- Palumbo, A., 1913. Catalogo ragionato delle pubblicazioni archeologiche e politiche di Giuseppe Fiorelli. Città di Castello, pp. 65–81.
- Parslow, C.C., 1988. Documents illustrating the excavations of the Praedia of Julia Felix in Pompeii. In: *R. St. Pomp.*, II, pp. 37–48.
- Parslow, C.C., 1995. Rediscovering Antiquity. Karl Weber and the Excavation of Herculaneum, Pompeii, and Stabiae. Cambridge, 420 pp.
- Patricelli, G., De Carolis, E., 2001. L'eruzione del Vesuvio del 79 d.C.: le vittime dell'antica Pompei. In: *Pompei tra Sorrento e il Sarno. Atti del III e IV ciclo di conferenze di geologia, storia e archeologia*, a cura di F. Senatore. Roma, pp. 111–146.
- Pescatore, T., Senatore, M.R., 1999. Le conoscenze geografiche. In: *Homo Faber, natura scienza e tecnica nell'antica Pompeii*, pp. 43–45.
- Pescatore, T., Sigurdsson, H., 1993. L'eruzione del Vesuvio del 79 d.C. In: *Ercolano 1738–1988, 250 anni di ricerca archeologica*. Roma, pp. 449–458.
- Pompei, Pitture e Mosaici, 1990–1999, I–IX. Roma.
- Pompei e gli architetti francesi dell'Ottocento, 1981. Napoli.
- Pozzi Paolini, E., 1977. Il Museo Archeologico Nazionale di Napoli in due secoli di vita. In: *Da Palazzo degli Studi a Museo Archeologico*. Napoli, pp. 1–28.
- Romanelli, D., 1811. Viaggio a Pompei a Pesto e di ritorno ad Ercolano. Napoli, pp. 25–29.
- Ruggiero, M., 1879. Della eruzione del Vesuvio nell'anno LXXIX in Pompei e la Regione Sotterrata dal Vesuvio. Napoli, pp. 1–32.
- Ruggiero, M., 1890. Impronte pompeiane. Napoli, pp. 1–3.
- Scatozza Horicht, L.A., 1987. Giuseppe Fiorelli: La cultura classica a Napoli nell'Ottocento. Napoli, pp. 865–880.
- Scatozza Horicht, L.A., 1991. Carlo Bonucci: La cultura classica a Napoli nell'Ottocento. Napoli, pp. 163–173.
- Scacchi, A., 1843. Osservazioni critiche sulla maniera come fu seppellita Pompei. In: *Bull. Arch. Nap.*, 1, pp. 41–45.
- Settembrini, L., 1889. Scritti vari di letteratura, politica ed arte, I. Napoli, pp. 253–257.
- Sheridan, M.F., Barberi, F., Rosi, M., Santacrose, R., 1981. A model for Plinian eruptions of Vesuvius. *Nature* 289, 282–285.
- Sigurdsson, H., Carey, S., Cornell, W., Pescatore, T., 1985. The eruption of Vesuvius in A.D. 79. *National Geographic Research*, I, pp. 332–387.
- Simkin, T., Fiske, R.S., 1983. *Krakatau: The volcanic eruption and its effects*. Smithsonian Institution Press, Washington, DC.
- Sogliano, A., 1925. Guida di Pompei. Milano, pp. 2–6.
- Sommella, P., 1994. Urbanistica pompeiana: Nuovi momenti di studio. In: *Neapolis – progetto sistema per la valorizzazione integrale delle risorse ambientali ed artistiche dell'area vesuviana*, II. Roma, pp. 163–218.
- Spinazzola, V., 1953. Pompei alla luce degli scavi nuovi di Via dell'Abbondanza (anni 1910–1923), I–III. Roma, 1110 pp.
- Stefani, G., 1993. *Le Immagini della Memoria (XII Mostra Europea del Turismo, Artigianato e delle Tradizioni Culturali)*. Roma, 66, 75 pp.
- Stefani, G., 1996. Contributo alla carta archeologica dell'ager pompeianus. In: *R. St. Pomp.*, VII, pp. 11–33.
- Tanguy, J.C., Ribière, C., Scarth, A., Tjetjep, W., 1998. Victims from volcanic eruptions: A revised database. *Bull. Volcanol.* 60, 137–144.
- Thédenat, H., 1906. *Pompei I–II*. Paris, pp. 162, 138.
- Thomas, R.M.E., Sparks, R.S.J., 1992. Cooling of tephra during fallout from eruption columns. *Bull. Volcanol.* 54, 542–553.
- Varone, A., 1993. Scavi recenti a Pompei lungo Via dell'Abbondanza (Regio IX Insl. 6–7). In: *Ercolano 1738–1988, 250 anni di ricerca archeologica*. Roma, pp. 617–640.
- Varone, A., Marturano, A., 1997. L'eruzione vesuviana del 24 Agosto del 79 d.C. attraverso le lettere di Plinio il Giovane e le nuove evidenze archeologiche. In: *R. St. Pomp.*, VIII, pp. 57–72.
- Vinci, G., 1830. *Descrizione delle ruine di Pompei*, 2nd ed. Napoli, 156 pp.
- Wallace-Hadrill, A., 1994. *House and Society in Pompeii and Herculaneum*. Princeton, pp. 92–103.
- Yokoyama, T., Marturano, A., 1997. Volcanic products of the Vesuvius eruption in AD. 79 at Pompei, Italy. In: *Opus. Pomp.*, VII, pp. 1–32.
- Zevi, F., 1981. *La storia degli scavi e della documentazione. In: Pompei 1748–1980. I tempi della documentazione*. Roma, pp. 11–21.