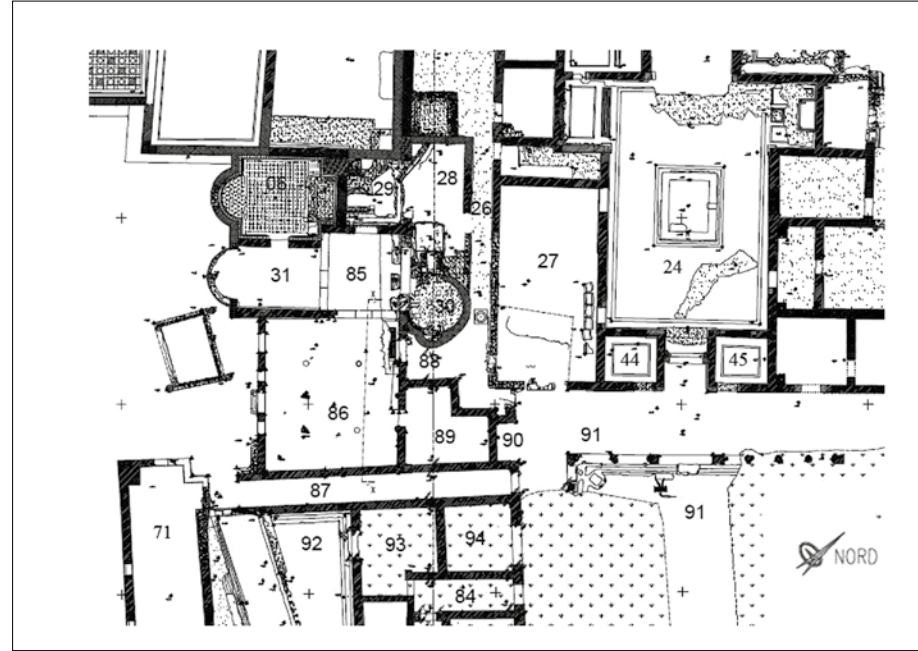


**PARETI DIPINTE
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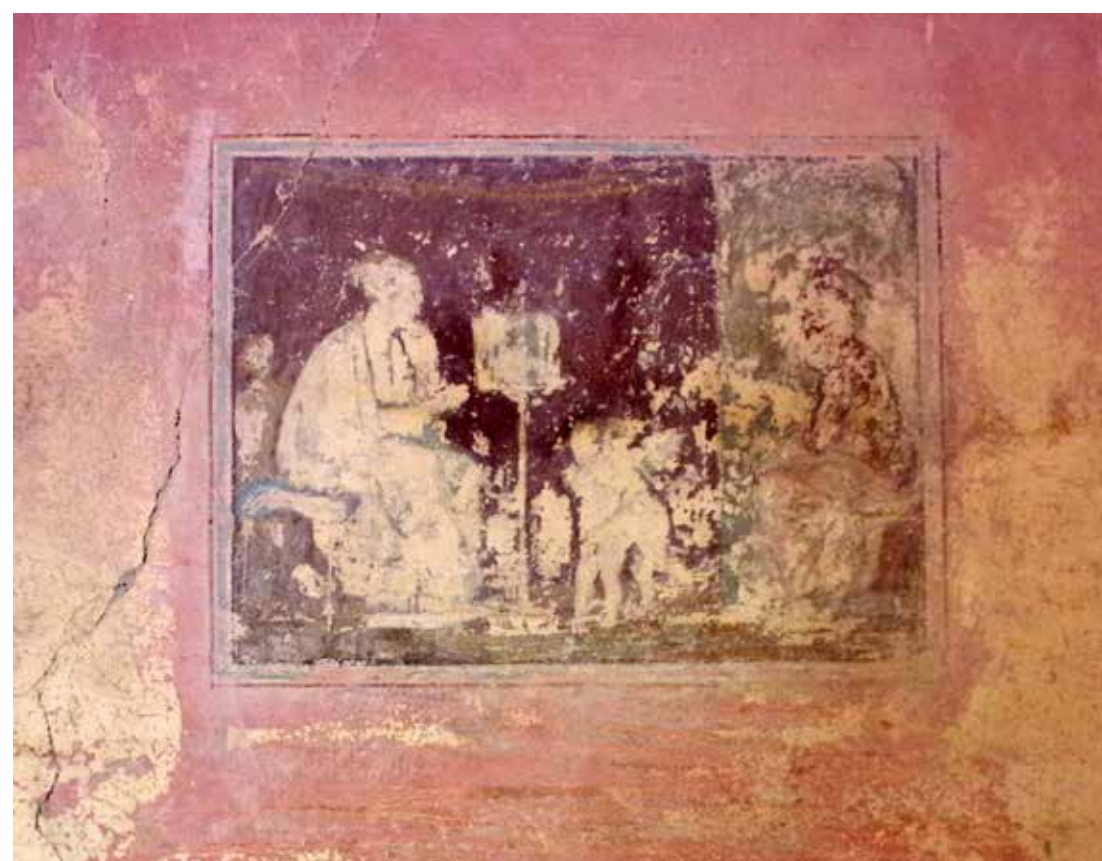
Connecting divided: the problems of studying frescoes from the area *thermae* of The Villa Arianna



1. Villa Arianna at Stabiae. Place of excavations 2010-2016.



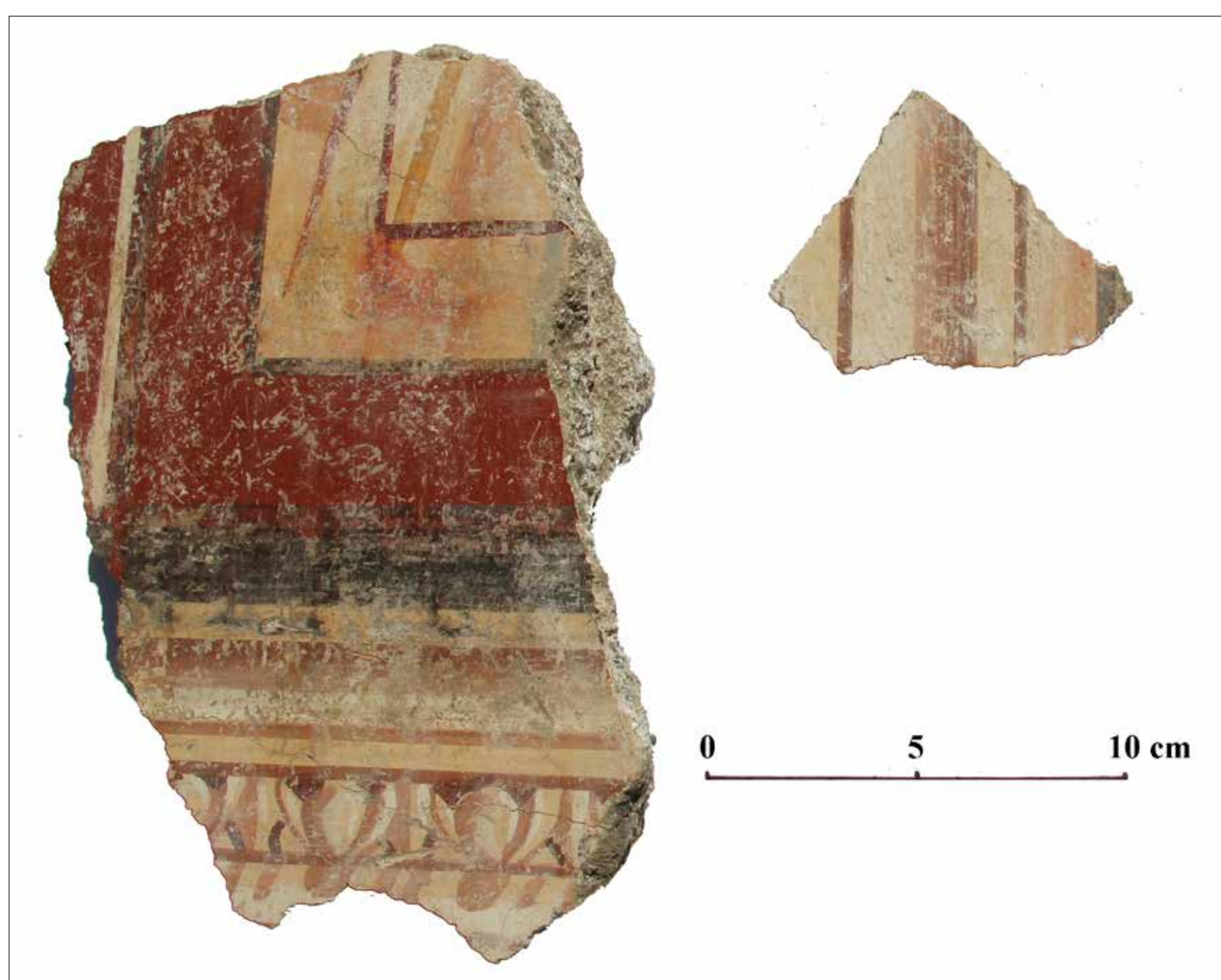
2. General view of the *cubiculum* 89.



3. Fresco similar to "Cupid Seller", opened in the *cubiculum* 89.

Box	US	Arch	Par	Material	Color	Pantone Number	Background	Strip	Painting Trace	Cornice	Corner	Relief	Location	Number	Comment
31	31			Plaster	Red	7509	Yes						Wall	1	Vertical painting
31	31			Plaster	White	7509	Yes						Wall	2	Thin strip
31	31			Plaster	Red	7509	Yes	Yes					Wall	3	Thin strip
31	31			Plaster	Black	7509	Yes	Yes	Yes				Wall	4	Thin strip
31	31			Plaster	Brown	7536	Yes	Yes					Wall	5	Thin strip
31	31			Plaster	Red	7500	Yes	Yes					Wall	6	Thin strip
31	31			Plaster	White	7500	Yes	Yes					Wall	7	Thin strip
31	31			Plaster	Red	7500	Yes	Yes					Wall	8	Thin strip
31	31			Plaster	Blue	7500	Yes	Yes					Wall	9	Thin strip
31	31			Plaster	White	7500	Yes	Yes					Wall	10	Thin strip
31	31			Plaster	Red	7509	Yes	Yes					Wall	11	Thin strip
31	31			Plaster	White	7500	Yes	Yes					Wall	12	Thin strip
31	31			Plaster	Red	7500	Yes	Yes					Wall	13	Thin strip
31	31			Plaster	White	7500	Yes	Yes					Wall	14	Thin strip
31	31			Plaster	Red	7500	Yes	Yes					Wall	15	Thin strip
31	31			Plaster	Yellow	442	Yes	Yes					Wall	16	Thin strip
31	31			Plaster	Green	447	Yes	Yes					Wall	17	Thin strip
31	31			Plaster	Red	7500	Yes	Yes					Wall	18	Thin strip
31	31			Plaster	Yellow	442	Yes	Yes					Wall	19	Thin strip
31	31			Plaster	White	7500	Yes	Yes					Wall	20	Thin strip
31	31			Plaster	Red	7509	Yes	Yes					Wall	21	Thin strip
31	31			Plaster	Blue	7535	Yes	Yes					Wall	22	Thin strip

4. An example of a fresco base spreadsheet.



5. Second Style fresco fragments, found during excavations in the thermal complex. From *cubiculum* 44.



6. *Cryptoporticus* 71. General view in 2019.

In 2010-2016, the Hermitage Museum expedition excavated the bath complex of Villa Arianna at Stabiae (Gardelli *et al.* 2011 and 2013) (fig. 1). The villa was actively explored in the 18th century, when excavations were carried out using galleries and wells, after which they were covered with earth. In the second half of the 20th century excavations resumed, but the bath complex was only partially explored (*praefurnia* 28-29, *calidarium* 05 and *laconicum* 30, as well as the upper part of the walls of *tepidarium* 31 and *frigidaria* 85). As a result of archaeological work, they were investigated, and a completely adjacent courtyard with the garden 86, the *cubiculum* 89, two corridors 88 and 87, as well as a corner of the small peristyle 90-91 were excavated. The main part of the excavated material consists of numerous fragments of frescoes. The peculiarity of the situation was that a significant number of fresco fragments were displaced both during the destruction of the walls during the eruption of 79 AD, and, first of all, during excavations of the 18th century, when they could be moved over considerable distances and substantially mixed. In addition, the most interesting and well-preserved painting elements were removed during the Bourbon excavations and transferred to the collection of the Herculaneum Museum.

The first task was to accurately determine the previous position of the frescoes from the collection of the National Archaeological Museum of Naples, where they are now. Excavation journals indicate those murals that should have been located in the excavated rooms. It was immediately discovered that errors were contained here. For example, those frescoes that were supposed to be placed in a *cubiculum* were placed in a neighboring courtyard with a garden 86. As a result, the errors of 18th century journals were corrected. However, it was not possible to indicate the location of all the frescoes from the *cubiculum* 89 (fig. 2). The *cubiculum* has two differently colored (yellow and white) alcoves for installing a bad. Relatively easy to distribute those murals, the background of which corresponded to the background of the room – yellow and white. In the yellow alcove was a fresco similar to the famous "Cupid Seller", but preserved much worse (fig. 3). A similar mural in white alcove was not found. It is very likely that it was here that the "Cupid Seller" could have been carved from the wall during the Bourbon time, and the indication of its opening in another room is erroneous. A final clarification of this situation could be the study of the edge of the fresco "Cupid Seller", where traces of the background could be preserved outside the frame.

The second, no less difficult, task was to study fragments of frescoes and determine their initial location (Butyagin 2015). Due to the fact that the fragments of the frescoes were mixed, the standard method of collecting them on the walls of the room did not give results. To achieve this goal, special spreadsheets were developed in Microsoft Excel, which allowed us to study the problem statistically. The table took into account the following factors (fig. 4):

- the location of the mural on the ceilings or on the wall;
- background;
- background borders;
- various bands;
- availability of painting;
- flat mural, cornice or relief.

A particular problem was setting the color of the frescoes. Usually, a visual definition of a specialist is used for this. However, for statistical processing of the fresco, this seems insufficient, especially when it comes to shades of color, or colors close to the visual perception, for example, blue and light green. It was originally intended to use the A.H. Munsell color system, adopted in many archaeological projects, for this purpose. Unfortunately, it was found out that Munsell's large color album is inconvenient for field use, and its electronic counterpart does not exist. The paper fans of the PANTONE system turned out to be more convenient for use in the field. After the colors of the frescoes were determined using paper fans, an attempt was made to verify the results using a PANTONE Capsure (color measurement laser device). Despite the fact that the device was designed to determine the colors of walls and fabrics, its use to determine the color of fragments of frescoes gave mixed results. Since the color pigment is distributed unevenly on the surface of the mural, the PANTONE Capsure, when used on different parts of the mural, determined the colors as different, often with a significant gap. Thus, paper-based color fans are more convenient for determining the color of the mural.

The result was a complete digital database of open fragments. On its basis, a comparison was made between fragments of frescoes and fresco paintings of various rooms. Immediately, it was possible to identify the murals that belonged to the Second Pompeian Style and came from the area outside the excavation – from the *cubiculum* 44 near the entrance to the *atrium* 24 (fig. 5). Also, based on the analysis of the data obtained, preliminary conclusions were drawn about the painting of the ceilings of the visits and the upper part of their walls. In general, statistical data on the borders of colors and the lines passing through them make it possible to draw up a general pattern of painting, restoration of artistic elements is possible only by visual method.

In 2017-2019 the expedition began to study the *cryptoporticus* 71 of the villa, in which many fragments of frescoes from other rooms were found (fig. 6). It is assumed that the application of the technique developed during the excavation of the bath complex will help to understand the source of these fragments. Initially, it was assumed that they got there during the works of the 18th century, however, new data suggest that some or all of these fragments were in *cryptoporticus* during repair work after the earthquake of 62 AD.

Gardelli P., Butyagin A., Chistov D. 2011. *Relazione preliminare sulle due campagne di scavo, restauro e rilievo 2010 e 2011 promosse dal Museo Statale Ermitage/Fondazione RAS presso il sito di Villa Arianna a Stabiae*, in "Rivista di Studi Pompeiani" XXII, 209-215.
Gardelli P., Butyagin A., Stabiae 2013, *Villa Arianna. Relazione sulle due campagne di scavo e restauro 2012/2013 condotte dal Museo Statale Ermitage/Fondazione RAS*, in "Rivista di Studi Pompeiani" XXIV, 135-139.
Butyagin A. 2015. *Fresco Fragments from Villa Arianna Excavated by Expedition of the State 31 Hermitage: Art as a Mass Archeological Material* (Фрагменты фресок виллы Ариадны в раскопках экспедиции Государственного Эрмитажа: памятники искусства как массовый материал), in "Actual problems of the theory and history of art (Актуальные проблемы теории и истории искусства)" 5, Moscow, 158-166.