

## MORE ABOUT ANCIENT METAL RELIEFS

Miss Richter has called my attention to the mistake in my article "Ancient Metal Reliefs," *Hesperia*, XII, 1943, p. 97, of referring to her and to Miss Milne the discovery "that the repoussé technique was invented by Pheidias and Polykleitos in the fifth century B.C." Their papers claimed merely that Pheidias and Polykleitos had "enlarged the possibilities of the art of embossing."<sup>1</sup> Pliny's statements, *Phidias . . . primusque artem toreuticen aperuisse atque demonstrasse merito iudicatur*, and *Polyclitus . . . iudicatur et erudisse ut Phidias aperuisse*, they translate, "Pheidias is deservedly considered to have opened up and shown the possibilities of the toreutic art," and "Polykleitos is considered to have perfected the toreutic art which Pheidias opened up."

I am sincerely sorry to have attributed to others a view which, it now develops, is my own. Except for my unguarded use of the word invent without some qualifying adjective or adverb or at least a question mark, exclamation point, or quotation marks, the statement which I made, in my opinion, is correct and is based on good evidence. I must, however, expand this thesis, since I may not call it a fact previously established by Miss Richter and Miss Milne.

The distinction between the techniques for making relief, hammered, repoussé and cast, is old. Blümner carefully differentiated them, calling the first two *Treiben über einem Modell* (with subdivisions) and *Treiben aus freier Hand*.<sup>2</sup> He did not give any dates for the period of use of the various techniques, and this I attempted several years ago to do. My results are embodied in the article in *Hesperia*.

Of a repoussé relief, one made entirely free hand, the distinguishing characteristics are: thin fabric, close correspondence of back to front, and undercutting. Hunting for these characteristics on metal reliefs, I have not found them except on pieces which must on stylistic or other grounds be dated after the middle of the fifth century B.C. The method is empirical, and it may have failed. The material for study is limited, that at my command more limited still. The tests, moreover, are not conclusive. Any repoussé may lack the undercutting. Many do lack it. But the fact that no early relief has this feature, which is inherent in the technique, makes me think that the dividing line comes at about the middle of the century. Apparently all earlier reliefs were made by hammering over, into, or between forms of hard material.<sup>3</sup> The

<sup>1</sup> G. M. A. Richter, "A Greek Silver Phiale in the Metropolitan Museum," *A.J.A.*, XLV, 1941, pp. 363-389; M. J. Milne, "The Use of ΤΟΠΕΥΩ and Related Words," *ibid.*, pp. 390-397.

<sup>2</sup> H. Blümner, *Technologie und Terminologie der Gewerbe und Künste bei Griechen und Römern*, IV, pp. 237 ff.

<sup>3</sup> I do not insist that there was a complete matrix for every relief object made before this time. Probably each worker had a series of matrices for the decorative elements. The very large relief

word *repoussé* is used for earlier works by some archaeologists, but in most cases, I think, merely to signify embossed reliefs. As far as I can judge, few if any apply this term to an early relief meaning that it was made altogether free hand, with no mechanical aid whatsoever.<sup>4</sup> This is the sense in which I am using the word *repoussé*, Blümner's *Treiben aus freier Hand*. If there are cases of this at an earlier date I hope they will be reported.

My researches had reached this point when Miss Richter and Miss Milne published their work on the silver bowl in the Metropolitan Museum. This bowl was hammered into a matrix. Miss Richter differentiates the three techniques, hammering, *repoussé*, and casting, all in use in the latter part of the fifth century; she mentions the sudden up-swing, qualitative and quantitative, in metal embossing in the latter part of the century; and she contrasts these new reliefs with their differentiated surface with the archaic ones worked in large, simplified planes; she says that the change accompanied a much more developed technique; and that the leading artists of the time, Pheidias and Polykleitos, pointed the way for this improvement. She connects this improvement with the statement by Pliny, which I quoted above, attributing great technical progress in metal embossing to Pheidias first, Polykleitos second. Miss Milne follows the article with a discussion of the word *ροπέω* and related words, which she finds usually apply to gold and silver embossed reliefs.

I thought that Miss Richter believed, as I do, that the more developed technique with which Pheidias and Polykleitos labored was that of *repoussé*, and that this was a new technique. For the contrast in effects between the earlier and later pieces is exactly what would happen upon the introduction of the free-hand technique. Give an artist a chance to work a soft, thin, sheet of metal back and forth, in and out, and he will create something plastic with differentiated planes. If he has to continue merely to carve matrices in solid material he will not do this. The new technique fits the style of the period, but the style can find its fruition only when the medium can be used adequately. Probably all artists of the late fifth century wanted to create something as plastic as these new bronzes; but few sculptors and no gem-cutter succeeded.

Once the new technique was developed, its results could be copied in the other technique—the technique of the matrix, so useful for commercial reproduction. The silver bowl in the Metropolitan Museum was hammered, but it looks so much like

surfaces of some early works may have been raised by bending over something as simple as the anvil, or the corner of the work bench, or a series of large and small rods. On these great plain surfaces all detail was rendered by cold tooling, really by incising. The small, delicate and oft repeated of the early works must have had complete matrices, e. g., the early Corinthian mirror handles, H. Payne, *Necrocorinthia*, p. 224.

<sup>4</sup> I myself used the term "pseudo-*repoussé*" in *Studi Etruschi*, XII, 1938, pp. 271 ff., referring to a relief (not of early date) which was made in a matrix but looks like *repoussé*. In the same article I used *repoussé* of embossed work generally. I do not commend this terminology.

repoussé that it at first deceived Miss Richter's practiced eye.<sup>5</sup> But the improvement must have been made with the new technique, then copied in the older.<sup>6</sup> Similarly, a century earlier the invention of the red-figured technique of vase painting led to a sudden improvement in the naturalness of drawing. But black-figured vases continued to be made, and artists copied in black-figure as well as they could the new drawing which the new technique had made possible.

I accept Miss Richter's and Miss Milne's translation of Pliny's statement, "Polykleitos is considered to have perfected the toreutic art which Pheidias opened up." I take their warning, and resist the temptation, the very great temptation, to translate, "Polykleitos is considered to have perfected the repoussé technique which Pheidias had invented." But how does one open up new possibilities in an age-old craft except by the discovery of some new technical process? And the great, the all important, new technique of the age of Pheidias and Polykleitos was the repoussé technique. It is with this technique that the names of the great artists must be linked.

That Pheidias invented repoussé and Polykleitos developed it, is certainly what Pliny meant. But it is not precisely what he said. Therefore, and since the assignation of inventions to famous artists is frequently a mistake, when we credit them personally we should do so with reservations, many reservations. On p. 102 of my article I put *inventor* within quotation marks, quoting, as it now appears, nobody but myself, but thereby expressing my doubts of its exactitude. To the crime of omitting quotation marks on p. 97, as well as to that of attributing my ideas to Miss Richter and Miss Milne, I humbly plead guilty.

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<sup>5</sup> *B.M.M.A.*, XXV, 1940, p. 8.

<sup>6</sup> There were, admittedly, other technical advances. If the model for the silver bowl was of iron, as Miss Richter suggests, *loc. cit.*, p. 376, this was a distinct improvement, but not as important an improvement as the invention of repoussé.