ANATOMY OF A DECIPHERMENT

Alan D. Corré
University of Wisconsin–Milwaukee

Outstanding research in the humanities too often goes unrecognized. For this reason in 1965 the Wisconsin Academy of Sciences, Arts and Letters established a program of annual cash awards for authors of meritorious papers in the humanities.

Since its founding in 1870, the Wisconsin Academy has sought to encourage the diverse research interests of its members. Philology, the broad field we now label language and literature, was singled out from the start as worthy of support. Consequently the Academy Committee for Recognition of Research in the Humanities is pleased to make its first award in the field of linguistic scholarship.

The First Place Academy Award in the Humanities goes to Dr. Alan D. Corré for his fine essay “The Anatomy of a Decipherment.” Dr. Corré is Associate Professor and Chairman of the Department of Hebrew Studies, University of Wisconsin–Milwaukee. As experts and lay readers alike will discover, the following essay contains much of interest and value.

Should readers of the Transactions wish to learn more about the humanities prizes, they may write to the Chairman of the Academy Awards Committee: Professor Goodwin F. Berquist, University of Wisconsin–Milwaukee, Department of Speech, Milwaukee, Wisconsin 53201.

INTRODUCTION

“Lecturer Learns Ugaritic”
From our Correspondent
Johannesburg

Mrs. Leah Bronner, of Johannesburg, a lecturer in Hebrew at Witwatersrand University, has learned to speak Ugaritic, the language of the Canaanites in 1400 B.C.

She learnt the language and Aramaic in order to write a thesis for a doctorate. Mrs. Bronner, a mother of three children, will be the first woman to receive a doctorate in Semitic literature at Pretoria University.

With all due respects to the distinguished newspaper1 which published this item, one might differ with it on two counts. First, it is doubtful if anyone can learn to speak Ugaritic. The Ugari-
tians, like certain other peoples in the Near East, unfortunately did not indicate their vowels unequivocally, so that we cannot be sure what the vowels were. Scholars reconstruct these vowels with apparent certainty, but could we invent a time machine and chat with the Ugaritians, we should doubtless be in for some shocks.\(^2\) Many factors of which we can have no knowledge may have been in operation to make the vocalic structure of the language very different from what we think it was. Second, it is rather surprising that learning Ugaritic is any longer considered newsworthy. Admittedly, Ugaritic shows no signs of becoming what political jargon terms a “critical” language; yet Ugaritic is now well established as a member of the Semitic group of languages, having been readmitted some 35 years ago when its sleep of 3,000 years was first disturbed by a peasant on the Syrian coast right across from the island of Cyprus, who found some small pieces of pottery at Minet-el-Beida. The Archeological service in Beirut heard about it and sent a man to investigate. He decided that the peasant had run across a Mycenean tomb similar to ones found in Cyprus dating from the thirteenth or twelfth pre-Christian centuries. Just half a mile from this spot lies the mound of Ras Shamra, one of the many heaps of earth in this part of the world that signal the existence of a long dead city. Ras Shamra turned out to be the site of the ancient city of Ugarit, already known from references in ancient sources, whose location had previously been entirely lost. The decipherment of the tablets discovered there in a previously unknown cuneiform script presents a case history in decipherment of lasting interest.

WHO DECIPHERED UGARITIC?

It is generally agreed that the decipherment of Ugaritic was “one of the shortest cases of decipherment on record.”\(^3\) The tablets bearing the hitherto unknown cuneiform script were unearthed by C. F-A. Schaeffer and G. Chenet about May 14, 1929. The first announcement of their partial decipherment was published just a year later, on June 4, 1930, by which time the tablets had been exhibited locally, shipped to Paris, cleaned, transcribed and published. By 1931 the decipherment was virtually complete. This stands in contrast to the decipherment of such languages as Egyptian and Akkadian which took long years of patient toil before they yielded their secrets; but of course the difficulty of their scripts

---

\(2\) One could not guess from written records that the vowels of merry/marry/Mary have fallen together in mid-western American English. We are in no better shape for Ugaritic, which in general does not indicate vowels. While Ugaritic has archaic features, it may have been highly innovating in others. The difficulties of bringing the distribution of the “three ales” into any order is an indication of how little we really know about the vowel phonemes of this language.

was far greater than that of Ugaritic, with its small number of signs. No bi- or tri-lingual text was available for Ugaritic, unlike Egyptian, which was deciphered only after the discovery of the Rosetta stone with its parallel Greek and Egyptian inscriptions. Akkadian too had to depend on multi-lingual texts for its decipherment (the Achaemenid inscriptions), although the other scripts in the inscriptions were also previously undeciphered.

Some have reported that the decipherment of Ugaritic was achieved independently and almost simultaneously by Hans Bauer, E. Dhomme and Ch. Virolleaud. Others attribute priority to Bauer. Thus the discoverer of the tablets writes:

> It is to the credit of a German scholar, the late Professor Bauer of the University of Halle, that he was the first to recognize that this language was of Semitic origin, and that he tracked down certain words... working on the same lines, two French scholars in their turn unravelled the secret of the Ras Shamra alphabet...  

More recently Johannes Friedrich has also given first place to Bauer. W. F. Albright, however, credits Bauer and Dhomme jointly, while A. M. Honeymon ascribes the decipherment to H. Bauer, E. Dhomme “and other Semitists.”

Who was really the first to decipher Ugaritic? As we shall see, this question has no ready answer.

**Preliminary Studies**

On August 9, 1929, C. Schaeffer and G. Chenet brought before the French Académie des Inscriptions et Belles Lettres, meeting under President René Dussaud, the discoveries they had made three months previously at Ras Shamra. On September 20, 1929, the French scholar Charles Virolleaud, to whom Schaeffer had entrusted the tablets for study, presented to the Academy an assessment of the finds.

In his lecture he dealt briefly with the Akkadian tablets which had been discovered, and went on to the tablets in the hitherto

---


+Rowley. *The Old Testament and Modern Study*, p. 272: “Decipherment of this system is due to the efforts of H. Bauer, E. Dhomme, and other Semitists.”
+Charles Jean Gabriel Virolleaud was born July 2, 1879, at Barbésieux. He studied at the Ecole des Langues Orientales in Paris.
unknown script. Already he had taken some important steps toward decipherment. He recognized only 26 or 27 signs, which meant without any possible doubt that the script was alphabetic. He recognized too that the words were for the most part separated by vertical word-dividers; that the vowels were not represented, since the words were so short, rarely of more than five symbols; that although some signs were formally identical with some Akkadian signs, they would not have the same value, and in fact that the Akkadian script would have no value for the decipherment; and that there were different classes of texts. Virolleaud further observed that a number of adzes were inscribed with six signs, and that these same six signs were preceded at the beginning of one tablet by a seventh sign. He concluded that the six signs formed a name of two parts (since they were elsewhere divided into two) and that the seventh corresponded to the Akkadian ana denoting possession, on the assumption that the tablet was addressed to the owner of the adze. Another adze bore the same assumed name preceded by four signs, two of them already occurring in the name. He assumed that this was the word for adze. As it turned out, Virolleaud was correct in all of these assumptions, with only minor correction. However, his guess that the language of the tablets might be identical with the autochthonous language of Cyprus written in the Cypriot syllabary was incorrect.

The news of the Ras Shamra excavations reached a far wider public on October 12, 1929, when the French magazine L'Illustration published an article by Schaeffer and Chenet entitled “Des Tombeaux Royaux et un Palais du 2$^{e}$ Millénaire avant J-C.” The article refers to the finding of tablets written in alphabetic cuneiform, but as yet undecipherable.

In the Revue Biblique for January 1930 Edouard Dhorme drew attention in a brief note to the “sensational discoveries” in Syria, and looked forward to the publication of the texts. Publication came in April 1930 as a supplement to Virolleaud’s address to the
Academy on September 20, 1929, published in *Syria*. The texts were now available to the scholarly world in a clear and careful transcription.

**BAUER’S DECIPHERMENT**

On April 22, 1930, Virolleaud’s transcription reached Hans Bauer in Halle. Bauer immediately began decipherment and completed his tentative list five days later. The next day he communicated with René Dussaud of the French Academy, who passed on the word to the Academy on May 23 and published an announcement in *Syria*, according to which Bauer had identified some 20 letters. In the meantime (on May 15) Bauer had notified the Berlin newspaper *Die Vossische Zeitung* of his discovery, and the news was published in the supplement (*das Unterhaltungsblatt*) to the issue of June 4, 1930. Here Bauer claims to have identified 20 characters with certainty and four tentatively (27 Buchstaben, wovon 20 sicher, 4 mit Wahrscheinlichkeit bestimmt sind). He refers specifically only to $t$ and $‘$. He also claims to have read several words, among them those for god, three, priests, and ax (which he renders *garzen*). Thereby he demonstrated the Semitic nature of the language and refuted Virolleaud’s Cypriot hypothesis.

Further details were given in *Forschungen und Fortschritte* for August 20, 1930. He had used as his starting point the assumption that the language was Semitic, then the fact that west Semitic has a limited number of consonants which are used as prefixes and suffixes. He recognized that Virolleaud had already given the clue to the prefix $l$ denoting possession. Bauer then sought common words such as *mlk* (“king”) and *b‘l* (“Baal”). He also interpreted a number of phrases, and promised to publish shortly a full scale work on the texts, which appeared in due course under the title *Die Entzifferung der Keilinschrifttafel von Ras Shamra* (Halle, 1930), incorporating his erroneous interpretation of half a dozen characters. He even became the first in three millennia to write something in the Ugaritic script, concluding this book with an

---

16 See note 11.
17 Hans Bauer was born at Grassmansdorf, Bavaria, January 15, 1878. He died at Halle in 1937, where he had been professor ordinarius.
20 In point of fact, Bauer had not read the word for priests. The word at issue is in 2.10 (Gordon, *Ugaritic Manual*, p. 129) and is to be transliterated *mah*. By pure coincidence Bauer’s errors made this read *khm* (cf. *Die Entzifferung*, p. 13). The rendering *garzen* was also incorrect, the true form being closer to the Akkadian cognate. It is doubtless a loanword, and it is entirely possible that the Hebrew *qdm*, which also means a tool, is a doublet of this word which came via a different route and acquired a different meaning.
21 Bauer erroneously read *slm* (tablet 1, line 8) as *mlk* and *slm* (tablet 3, line 52) as *mlkk*, thereby introducing a confusion from which he never recovered until he was helped by Dhorme.
attempt to write in Ugaritic—or, more accurately, in Hebrew with Ugaritic characters—"Blessed art Thou, O Lord our God. Amen and Amen." It would probably be true to say that a Ugaritian scribe would have had more difficulty in understanding what Bauer wrote than vice versa.

Let us now examine Bauer's decipherment. In the Vossische Zeitung he claimed to have interpreted 20 signs with certainty and four tentatively. Two months later in Forschungen und Fortschritte, he published the values of eighteen signs, although he again affirmed that 20 could be read with certainty. Of these, ten have withstood the test of time fully (b, d, h, h, w, l, n, ‘, r, t). In the two alefs (now transcribed a and i) Bauer did not reach the whole truth, although he came very close. Hence Friedrich's statement that Bauer had interpreted 17 characters correctly by April 1930 needs this much emendation. Six signs were incorrectly interpreted—g (which should be h), another w (for k), k (for m), z (for s), m (for s) and t (for t). In the Entzifferung he adds two further correct interpretations—g, which he writes g because he already had another incorrect g and y—and five further incorrect interpretations—g (for q), q (for p), h (for u), p (for s) and p (for s). In view of the fact that Bauer, between publication of Forschungen und Fortschritte and the Entzifferung, had added five new incorrect interpretations, compared with two new correct ones, one may be permitted to wonder whether he would ever have achieved a full decipherment, i.e. one permitting the reading of connected texts, without the help he was to receive from Dhorme, because several of his errors were in letters of high frequency, and he had transcribed the entire corpus of texts then available without sensing the basic errors in his proposed decipherment. However, this help from Dhorme was forthcoming even before the Entzifferung left the press.

**Dhorme's Decipherment**

Dhorme began his research about the same time as Bauer. When Bauer's article appeared in the Vossische Zeitung, he had already independently identified b'l, but had confused n and t, an error which Bauer's article corrected for him. Since, however, Bauer only hinted at his full decipherment, Dhorme continued his researches, fortunately, since he was not so advanced as Bauer by June, and might possibly have accepted Bauer's erroneous decipher-

---

22 Not surprisingly, since the whole truth still eludes us. Cf. J. Reif, "The Loss of consonantale aleph in Ugaritic," Journal of Semitic Studies 4.1 (January 1959), pp. 16-20. There is no doubt that this problem must be solved by observing the actual distribution of these alefs in Ugaritic, and not trying to fit them in to preconceived notions as to the nature of proto-Semitic.

ment if it had been published at that time. As it turned out, he achieved a much better result than Bauer. In the *Rivue Biblique* for October 1930 he published an article in which he deciphered correctly 18 characters (b, d, h, w, h [which he transcribes h], t, y, k, l, m, n, s, ' p, q, r, s, t) and six incorrectly (s [for the correct u], ' [for g], g [for h], z [for s], s [for d] and s [for t]). Additionally, like Bauer, he had come close to the truth in two of the alefs. This decipherment enabled Dhorme to read the inscription on the adzes as meaning “the chief of the priests” (which Virolleaud had suggested must be a name) and much more besides.

This study was completed on August 15, 1930. A month later, Dhorme, alerted by René Dussaud, read Bauer’s article in *Forschungen und Fortschritte*, which he found to his surprise differed basically from his decipherment. He thereupon added a postscript to his article in which he commented that “it will be interesting to see which of us is right,” and sent the proofs to Bauer. At this time Bauer had just completed his *Entzifferung*; Dhorme’s communication obliged him to add a *Wichtiger Nachtrag* in which he accepted Dhorme’s interpretation as more fruitful in explaining enigmatic passages. On October 3 he wrote to Dhorme accepting his findings, and on October 5 he communicated to Dhorme a revised decipherment representing the combined efforts of both scholars which was published by Dhorme the next year.

This list was quite good enough for all practical purposes. Of the 27 letters they recognized at the time, 23 were correct—b, g, d, h, w, z, h, h, t, y, k, l, m, n, s, s, (which they wrote sa), ' p, s, q, r, s, t. The interpretation of the two alefs remained the same; the third alef was transcribed h, and d was transcribed s. Thus, about a year after the publication of the texts, a decipherment was available which was substantially correct.

**VIROLLEAUD’S DECIPHERMENT**

Virolleaud had also been working on the decipherment. About the same time as Bauer was publishing his results in *Forschungen und Fortschritte*, Virolleaud had received a new set of tablets found by Schaeffer in 1930. These took about a month to clean, and

---


25 There is a nondescript sign for this in his list, which is probably a transcriber’s error, since Bauer had not succeeded in identifying this sign, but it appears later in the joint Bauer–Dhorme list.


27 In Dhorme’s transcription the sign for z is omitted, doubtless an error.
a few days later Virolleaud had confirmed his previous suppositions with regard to the decipherment, which seemingly he was unwilling to publish until confirmation was forthcoming. On October 3, 1930 (the very day on which Bauer wrote to Dhorme accepting his corrections), Virolleaud's communication was read to the French Academy, and three weeks later he himself presented his results.\textsuperscript{28} Like the others, Virolleaud used the \textit{l} as his point of departure. He then searched for the frequent words containing the \textit{l}, \textit{milk}, \textit{b\'l}. A set of signs in which the first and last were identical and the middle was \textit{l} furnished a word cognate with Hebrew \textit{sls} (three). These findings were confirmed by a text containing several of the numerals.\textsuperscript{29} Virolleaud also recognized that Ugaritic possessed three signs for the alef (only two had been recognized previously) and that one of them contained the vowel \textit{a}. Virolleaud does not point out specifically the value of some common signs (such as \textit{d}, \textit{h}, \textit{y} [which he transliterates \textit{i}], \textit{n}, \textit{r}) although he certainly had them, because he correctly translates words containing them.\textsuperscript{30} In addition to these five he had 17 other signs correctly deciphered (\textit{a}, \textit{i} [written as \textit{e}, which this sign may often represent], \textit{b}, \textit{g}, \textit{z}, \textit{h}, \textit{h}, \textit{t}, \textit{k}, \textit{l}, \textit{m}, \textit{s} [which he transliterates \textit{s}], \textit{t}, \textit{p}, \textit{s}, \textit{q}, \textit{t}). His incorrect decipherments are \textit{u} (which he transliterates \textit{\epsilon}), \textit{z} (which he transliterates \textit{f}), \textit{g} (of which he is uncertain, but suggests may be another \textit{h}), \textit{s} (which he transliterates \textit{s}), and \textit{t} (which he transliterates \textit{s}). For some reason he fails to mention \textit{w} altogether, although he probably knew its value. Virolleaud's treatment of the subject indicates that his purpose was first to get to the meaning of the texts and not secure a decipherment only.

This presentation was treated by the French newspapers\textsuperscript{31} as the first decipherment of this "mysterious alphabet", whose enthusiastic reports received a tart rebuttal from Dhorme. "Our readers will know," he declared, "what reliance can be placed on these statements."\textsuperscript{32}

\textsuperscript{28} Cf. C. Virolleaud, "Le Déchiffrement des Tablettes Alphabetiques de Ras-Shamra," \textit{Syria} XII (1931), pp. 15-23.

\textsuperscript{29} This text (which was not available to Bauer and Dhorme) was published in \textit{Syria} XV (1934), p. 249.

\textsuperscript{30} Virolleaud admits (\textit{La Légende Phénicienne de Danel}, Paris, 1938, p. 71) that he obtained the value of the \textit{d} from Bauer, presumably from the article in \textit{Forschungen und Fortschritte}.

\textsuperscript{31} For example, \textit{Le Figaro} for October 25, 1930, reported (p. 3):

\texttt{M. Virolleaud est parvenu à déchiffrer, par une méthode qu'il a exposé, a cette Compagnie, les tablettes cunéiformes trouvées par MM. Schoeffl et Chenet, à Ras-Shamra ... La découverte de M. Ch. Virolleaud ... ne souffre d'ailleurs ... aucune incertitude, et le déchiffrement admirable fait par M. Virolleaud est définitif.}

\textsuperscript{32} "Nos lecteurs savent à quoi s'en tenir sur la portée de ces affirmations," E. Dhorme, "Première traduction des textes phéniciens de Ras Shamra," \textit{Revue Biblique} XL (January 1931), p. 33.
Nor was this remark by Dhorme an end to the dispute. In 1936 Virolleaud indicated that the information which was read to the French Academy on October 3, 1930, had also been communicated to Bauer, who used it to correct his work, and it was later published under Dhorme’s name, as we have seen. This produced an indignant rebuttal from Bauer, who called Virolleaud’s assertion “eine glatte Unwahrheit.” He indicated that Virolleaud had indeed written to him, but did not communicate any usable information. Whatever may in fact have passed between the two men, it seems fairly clear that Bauer and Dhorme’s combined efforts were sufficient to produce the “alphabet of 5 October” without Virolleaud’s help.

CONCLUSIONS

What then was the contribution of each of these scholars to the decipherment? Unquestionably Bauer was the first to publish, on June 4, 1930, the correct decipherment of some signs. Although no cuneiform signs appear in the article in the Vossische Zeitung, Bauer’s comment

so bedeutet z.B. der einfache liegende Keil, der im Babylonischen asch zu lesen ist, in unserer Schrift t . . .

leaves no doubt that he had deciphered the t. Bauer’s incredibly rapid progress in the decipherment calls forth admiration, and one cannot doubt the brilliance of his initial efforts. But this admiration must be tempered by the fact that his later work was unsound, and one cannot avoid the impression that his urge to publish in haste entirely set aside the need to sift his findings.

Dhorme was the first to publish (in the Revue Biblique for October 1930) an alphabet sufficiently accurate to permit the reading of texts. Thus Dhorme was able to read the inscription of the adze, which according to the decipherment of Bauer’s third publication on the subject (die Entzifferung) was to be read rb whnk—which is meaningless. However, Dhorme had received some early help from Bauer, as we have seen.

It would seem therefore that Bauer and Dhorme should share the honors, as Albright suggests. What of Virolleaud? It is entirely possible that Virolleaud had achieved a partial, or perhaps almost complete, decipherment before the others ever started. Virolleaud’s exposition of October 24, 1930, shows such detailed understanding of

---


35 As of February 14, Virolleaud was still orienting his research to Cyprus, since he communicated thus to the Société Asiatique. Cf. H. Bauer, Das Alphabet von Ras Schamra (Halle, 1934), p. 41.
the contents of the tablets that it is clear that the decipherment was far behind him. Particularly his discovery of the statement “He pleads the case of the widow, he judges the suit of the orphan” was a strong, almost prophetic, hint of the importance that Ugaritic was to assume in the elucidation of the Hebrew Bible, and points to his grasp of the texts. He himself testifies that he was just about ready to publish his decipherment when Bauer communicated his finding to Dussaud. Should we therefore perhaps grant priority in the discovery to Virolleaud in spite of Bauer’s publications?

The answer may safely be left to the historian of the decipherment of Akkadian, Robert W. Rogers, who, in granting “an unassailable superiority in translating” to Sir Henry Rawlinson over Edward Hincks, remarks that in Hincks’ notes he shows great skill as a translator, but for some reason he did not publish. Rogers goes on:

The judgment must remain as it is, for the historian of the science must base his decision on the published work of the pioneers and not upon that which they left hidden in their notes.\footnote{Robert W. Rogers. History of Babylonia and Assyria (New York, 1915), I, pp. 239–240.}

Similarly, Bauer, joined perhaps by Dhorme, must remain the first decipherer, whatever may have lain on Virolleaud’s desk the day before the issue of Syria reached Halle.

But one must admire Virolleaud’s part in this whole story, for he displayed a remarkable scholarly altruism. He could easily have delayed publication of the tablets until he was sure of a decipherment, or despaired of achieving one. As it was, he published them immediately, knowing full well that another might thereby carry off the prize of elucidating them first, as in fact happened. It was no doubt the fact that Bauer had rushed into print—“un peu prématurément, peut-être” to quote Virolleaud—while Virolleaud was still working on a really sound decipherment that brought about the note to which Bauer objected so violently.

But if Bauer was the first decipherer, and Dhorme the first accurate decipherer, Virolleaud, by virtue of his great contributions then and later, is the true father of Ugaritic studies. As Rogers says: “To each man his own gifts and his own reward.”