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Douglas Sutton (ed.), *Saying So Doesn't Make It So: Essays in Honour of
B. Foss Leach***



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SAYING SO DOESN'T MAKE IT SO

PAPERS IN HONOUR OF B. FOSS LEACH

**Edited by
Douglas G. Sutton**

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The Pacific Stone Adze Studies of H. D. Skinner and Roger Duff: an Historical Survey

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In many parts of the world, pottery has been the principal archaeological material used for comparative artefact studies. In Polynesia, where until recently no pottery was known to have been made, stone adzes have been the implements subjected to the greatest number of typological analyses. While such typological studies have been undertaken in Samoa, in Hawaii and in the Marquesas, the major impetus in the study of the classification of stone adzes in the Pacific came from the work of two New Zealand museum directors.

THE ADZE CLASSIFICATIONS OF H. D. SKINNER

H. D. Skinner was the first scholar in Polynesia to apply a typological approach to Pacific material culture, and in particular to stone adzes. In his 1923 study of the material culture of the Moriori people of the Chatham Islands, he wrote:

In the section which deals with axes, adzes, and chisels, what is believed to be a new method has been followed. The implements have been classified into groups or types and it happens that no type has been erected that does not also exist in some other part of the Pacific. For each type a "type specimen" has been named, and wherever possible its front, side, and back views have been given, as well as the cross-section . . . Type specimens are shown at a uniform scale of 1 : 2 . . . It is believed that by this method students will be able to obtain a much more accurate knowledge of the form and relative size of these implements than has been possible by any other method previously used. (Skinner 1923: 5)

The method adopted by Skinner in analysing stone adzes, and the criteria he employed in deriving his types have been followed in varying degree by all later scholars.

There are only two characteristics which belong to all adzes—poll and cutting edge. The type to which an adze belongs is determined in the following classification by the shape of the implement between these two extremities and this in turn is determined by the cross-section of the adze. The shape of the cross-section has therefore been taken as the basis of the classification that follows, but another characteristic has been made use of—namely, outline. Outline is a difficult feature to define, but its use is made necessary by the fact that the cross-section may vary in shape at different points in the same adze. Subsidiary characters which help in determining to which type an implement belongs are presence or absence of grip, nature of bevel, and relative length of cutting edge. (Skinner 1923: 89)

In *Morioris of the Chatham Islands*, Skinner demarcated ten adze types, of which he believed the first four were fundamental, while the remaining six were possibly derivative forms (Skinner 1923: 92). The textual descriptions of the types are poor, the main definitions being given as captions to the plates figuring the type specimens, and other examples of each type. For most specimens he gives four measurements (length, width of cutting edge, width at poll, thickness) and describes any unusual features the adze may have, e.g., 'knobs' at the poll. He occasionally gives the weight of the example, and the raw material used. In many cases, Skinner was reliant on descriptions furnished by curators of museum collections, and did not gather the data himself, which may explain the somewhat uneven nature of his descriptions.

Although his monograph dealt primarily with Moriori material culture, Skinner did not restrict himself to adzes from the Chatham Islands. He continually referred to examples from elsewhere in the Pacific, especially New Zealand, being the area he knew best, and the one which he believed had the closest relationships with Chathams material. Several of his types were represented by only one Moriori example, an approach which he justified by stating that these types were more numerous elsewhere. Thus the classification of adzes he provided was not simply a device to describe the Chathams evidence; it was a means of comparing the material culture of different areas in the Pacific.

In 1928, the Bernice P. Bishop Museum published a revised edition of Skinner's Moriori study, in conjunction with an ethnographic account of the life and customs of the Moriori (Skinner and Baucke 1928). There was no major revision of the adze typology, though Skinner did consider the problem of the status of some of the types:

Types V–VIII are on a somewhat different footing: they appear to be established variants of Type I. Hence it may be argued that the term "type" should not be used to cover them all. It has been retained here after careful consideration, even though in future work the descriptive terminology of adzes may be modified. (Skinner and Baucke 1928: 350)

Between 1923 and 1928, Skinner tested his typology on "some hundreds of Polynesian implements", and found that the first four types were "objective realities" (p. 349–50). Just what Skinner meant by this phrase is unclear.

In 1930, the Director of the Bishop Museum, Dr Gregory, suggested that Skinner might undertake a field study of stone tools in Polynesia, to be completed at the Bishop Museum (Gregory to Skinner: 12 February 1930). Skinner accepted the idea with enthusiasm, commenting "I have a large amount of material in hand for that research, and would like nothing better than to carry it through" (Skinner to Gregory: 9 March 1930). However, because of the staffing situation at Otago Museum Skinner was unable to spend as long in the Pacific as was originally suggested. He did have some time in Tahiti in the summer of 1930 (Skinner to Gregory: 22 August 1930), presumably at the expense of Bishop Museum. This placed Skinner under an obligation to the Bishop Museum, which resulted in a long correspondence between Skinner and Gregory:

I am pleased to learn that your trip to Tahiti furnished material for your 'Stone Cutting Tools of Polynesia', which I hope to see in the Manuscript form before many months have passed. (Gregory to Skinner: 31 January 1931)

Gregory was to be disappointed:

I am especially eager to know what has become of your manuscript on Polynesian stone tools. I wish you could give somewhat in detail the present state of that manuscript.

Possibly we could devise some scheme for bringing it to completion. The Museum Treasurer, the Trustees, and Ethnologists who need your paper are making life miserable for me. (Gregory to Skinner: 3 October 1934)

H. D. Skinner replied:

Your letter smote my conscience, I have let publication of my paper on Maori amulets precede publication of the adze memoir . . . The drawings of New Zealand adzes are virtually complete . . . I undertake to begin work on these [Pacific sections] and on the accompanying manuscript in February 1935, and to have them finished by the end of May, and posted to you early in June. I hope you will give your permission to exhibit the drawings at our Science Congress here in May. I enclose with this a draft scheme of the memoir, giving plan of the New Zealand section. The other two sections will follow this generally, though they will omit some sections. (Skinner to Gregory: 24 December 1934)

The schema given by Skinner is divided into three parts: New Zealand, the Chatham Islands, and the Cook Islands. The detailed synopsis of the New Zealand section makes it clear that what Skinner had in mind was the New Zealand study which he eventually published in 1938 (Skinner 1938). The text was to include nine types of adzes, with a number of varieties in some of the types. It was then to continue with a discussion of adzes with lateral helve, axes, chisels, and the various types of adzes in greenstone.

Whilst Gregory was apparently quite pleased with Skinner's outline, obviously he had in mind a more elaborate treatment than Skinner proposed:

The outline you submit is, I presume, a sample of the description of shape and materials and intended to give the range of variation throughout Polynesia. I am assuming therefore that the adzes from all parts of Polynesia will be figured and discussed, except those already well described and that comparison may be readily made between different parts of Polynesia, and also between the 'Polynesian adzes' and adzes of other parts of the world. (Gregory to Skinner: 30 January 1935)

Skinner replied:

I am sorry that it will not be possible for me to figure adzes from all parts of Polynesia. To begin with I have not at hand adequate material from the Samoan and Tongan groups or from the Society, Marquesas, or Hawaiian Islands. I ought also to add Pitcairn, the Tuamotus, and Australs. I therefore propose to deal with New Zealand, the Chatham Islands, the Cooks, and possibly Easter Island pretty fully. I propose to deal with the other areas mentioned only incidentally. (Skinner to Gregory: 14 March 1935)

Progress was however slow. In October 1935 Skinner wrote:

Again I have to confess delay in the matter of the classification of adzes. I delivered papers before our section of the Science Congress on my classification as applied to the adzes of southern New Zealand, of the Chatham Islands, and of the Cooks, with demonstrations from our actual collections. Classification was accepted as fitting the adzes of all three areas. In the meantime I had entrusted the drawings to my assistant Miss Daff. She has done such a series as has never been done before—front, back, side, cutting edge and sections—with detail so treated as to distinguish crust, flaking and pecking. Some 37 have been completed showing fully the typology for Southern New Zealand when "ordinary rocks" are used. Some 32 adzes have been drawn to illustrate typology when "greenstone" is used. (I now want to do a series on greywacke

because it is so distinctive). Later, a much briefer memoir on Northern New Zealand adzes will be sent, with, I hope, similar memoirs on the typology of the Chathams and the Cooks—the material has already been worked over but the drawings must inevitably take a considerable time. (Skinner to Gregory: 7 October 1935)

The manuscript for the first section was eventually completed at the end of 1935, shortly before Skinner left for Europe on a study tour:

Before leaving Dunedin I finished the text to the first part of the classification of New Zealand adzes. I am sorry that the text of the two additional sections—adzes in greenstone and adzes in greywacke—was not completed; they should not take long to finish after my return.

The classification is based on a great amount of study spread over a number of years, and I am confident it will prove useful to everyone who is working on adzes in any Polynesian group . . . I have cut down description and comment to a minimum. The drawings are much the best that have been made of Polynesian adzes.

I have worked through the classification of the adzes of the Chatham Islands and the Cooks and have made the sketches for both, but text and finished drawings have still to be done. (Skinner to Gregory: 28 December 1935)

However, the finished manuscript certainly did not reach Gregory's expectations, and he returned it with the following comments:

The Manuscript 'Maori adzes, axes, chisels and gouges from the Murihiku region' . . . contains plenty of careful descriptive detail to which reference can be made in working out a comparative study of Polynesian stone tools. It seems however too detailed for a chapter in that work. Furthermore, as it relates strictly to New Zealand the "Gentlemen's Agreement" suggests that it be published by the Maori Board or Polynesian Society. The manuscript has therefore been returned. (Gregory to Skinner: 25 February 1936)

The exact nature of the "Gentleman's Agreement" does not appear to be documented, but Skinner explained in 1971 that it meant that journal publishers in New Zealand and Hawaii had agreed to specialise in the publication of material relating to their areas, and not "poach" on each others' territories.

At the beginning of 1936, Te Rangi Hiroa (Dr P. H. Buck) was appointed Director of the Bishop Museum to succeed Gregory. While there was considerable correspondence between Buck and Skinner, the proposed study of adzes was never mentioned. It seems that Buck was unaware of Skinner's obligation to the Bishop Museum, which accordingly lapsed. Skinner acknowledged the support of the Bishop Museum in his 1938 Singapore paper (see below), and used the New Zealand material in his next three papers on adzes (Skinner 1938, 1943a, 1943b). The material relating to the rest of Polynesia seems never to have been published. It is unfortunate that what could have proved to be a most interesting document was never completed, due to pressure of work caused by Skinner's situation at Otago Museum, of which he became Director in 1937.

In 1938, at the Third Congress of Prehistorians of the Far East in Singapore, H. D. Skinner gave a paper entitled "Maori adzes, axes, chisels and gouges from the Murihiku region, New Zealand." In fact the paper as published in the conference proceedings treated only adzes. A cyclostyled addendum to the copy in Auckland Museum notes:

This paper is cut out of a much larger paper which I originally hoped to publish in full. It included sections on chisels and gouges, as well as separate illustrated sections on

implements made from nephrite and greywacke. In cutting down the paper the old full title was inadvertently retained, as well as one or two phrases that do not accurately fit the present context.

H. D. Skinner further annotated the Otago Museum's copy: "This article is part of a larger memoir, and incidentally shows evidence of its origin". It is not clear whether the full version of the paper was read at the Congress, but it was never published in full. Skinner did include some axes and chisels in his consideration of greywacke and nephrite adzes published in 1943 (Skinner 1943b). Manuscript notes for the full study exist in Skinner's papers in the Otago Museum and the Hocken Library of the University of Otago, but they are unfortunately not complete.

In his 1938 classification, Skinner delineated 15 adze forms, divided into ten types. Type One has five varieties, Type Two has two, the others have only one. Most of the types do not correspond with the forms described in his earlier works on the Moriori material. All the type specimens designated were chosen from Murihiku examples in the collections of the Otago Museum, which were in Skinner's charge. He reported that he had tested the typology on greywacke examples from Canterbury, on nephrite adzes from Murihiku, from the Chatham Islands and the Lower Cooks. He commented: "In all cases the typology works well, though in each case some of the varieties present in Murihiku appear to be absent." (Skinner 1938: 148).

In the introduction to the paper Skinner described the work which had led to the development of the typology:

Under the terms of a Rockefeller Travelling Fellowship held between November 1926 and January 1928 I had the opportunity of studying Polynesian stone implements in the museums of London, Oxford, Cambridge, Washington and Honolulu . . . On the basis of many hundreds of specimens from every part of Polynesia thus catalogued, weighed and drawn that the present typology of Murihiku implements was worked out. When this stage in the research had been reached the Trustees of the Bishop Museum generously afforded me the opportunity of visiting the Society Islands . . . (Skinner 1938: 142)

Thus although the classification was a typology of Murihiku adzes, it was based on study of adzes from all Polynesia, and was part of a study which aimed to present a typology for the adzes of Polynesia.

COLLABORATION AND COMPETITION: H. D. SKINNER AND ROGER DUFF

Roger S. Duff was a student at Otago University under Skinner, taking Anthropology in 1932. Their relationship seems to have been close, especially in academic matters. In 1935, Duff undertook a two year cadetship in the office for Native Affairs in Samoa, with a view to carrying out a social anthropological study of Samoa. Pressure of work and conditions in Samoa prevented his doing this. It was with relief that he returned to New Zealand in 1938 to take up an appointment as Ethnologist at Canterbury Museum, where he was later to become Director, a position he held until his death in 1978. H. D. Skinner and Roger Duff were regular correspondents after Duff's student days, but they communicated more frequently and on a more academic basis once Duff took up his appointment at Canterbury. (For correspondence between them concerning Duff's experiences in Samoa, see letters in Skinner's papers in the Hocken Library).

H. D. Skinner was in the process of working out his adze typology while Roger Duff was a student at Otago in 1932; it seems very likely that there would have been discussion of the typology during lectures. Whether this is the case or not, Duff evinced an early interest in adzes, and in particular their typology (Duff 1940). This developed into a lifetime interest with the discoveries at Wairau Bar, but clearly predates them (Duff 1942: 1). Duff wrote 'A cache of adzes from Motukarara' (Duff 1940) early in 1940, well over a year after the publication of Skinner's paper (1938), yet he had not read a copy until Skinner sent him one in January 1940 (Correspondence between Skinner and Duff: 27 January 1940, 30 January 1940, 5 February 1940, 14 February 1940).

This perhaps accounts for the strange structure of the Motukarara paper (Duff 1940). Duff introduced it as a purely descriptive paper on a recent accession of the Canterbury Museum, a cache of adzes found on Banks Peninsula, and after discussing the history of adze typologies in the Pacific, states: "In the description which ensues, the writer will follow Skinner's types". He then proceeds to the 'description', which is in fact largely a discussion of the validity of various of Skinner's types to the Motukarara examples. The paper closes with a section in which:

The writer would like to suggest a tentative typology for New Zealand adzes based on Skinner's series, but reducing the types from ten to four. (Duff 1940: 293)

An explanation for this may be found in the letters between the two men at this time. Roger Duff wrote:

I have not laboured the point too much in my paper as it is largely irrelevant, but I would like to hear your reactions to this suggested modification of your scheme . . . Throughout I described the adzes of the cache in terms of your types, and from so doing, and much thinking over earlier attempts at adze classification it suddenly occurred to me that some of your separate types were really subtypes and vice-versa. (Duff to Skinner: 14 February 1940)

Roger Duff then outlined to Skinner essentially the same alterations which he had made in the paper he had submitted for publication, which had not yet appeared (Duff 1940: 293). He discussed the rationale behind the revision, which was to appear in print as being:

based less on the presence or absence of any type or sub-type in a related Polynesian culture, than on the possibility of describing adze types in the most general terms . . . Each of the four types is isolated and described in terms of three criteria—tang, cross-section, and width of cutting edge. (Duff 1940: 293)

It is true that Duff's schema is simpler and more descriptive than Skinner's, but we can see that Duff's revision was not based purely on descriptive criteria, but definitely included the distributional notions which were to become central to his later considerations of adze typology:

Hawaii specialises in I, Tahiti and the Cooks in III, Samoa and Tonga in II. The Marquesas seem to include I, II, ?III, and IV, as does New Zealand (II typical of the North Island, I, III, and IV of the South), and the Chathams include I and II commonly, III rarely, IV as a specialised variant. . . your Type IX is more logically a variety of IV which becomes common in the Marquesas. (Duff to Skinner: 14 February 1940)

H. D. Skinner replied to Duff, accepting some of what he had said:

I was much interested in your criticism of my adze typology . . . This series of modifications is, I am inclined to think, an improvement. But what about Types V, VI, VII, and VIII? I am not, at present, prepared to reduce these to the status of varieties, except that V might be classed as a variant of IE . . .

You will see from this that I regard your criticism as important, and as leading to important modifications in my typology. I would be glad if . . . you would publish your criticisms in detail in the J.P.S. [*Journal of the Polynesian Society*], I could then reply on the lines indicated . . . I hope I may publish the amended typology in New Zealand, together with the classification of greenstone and greywacke adzes, to be followed by classifications of the adzes of the Chathams and the Cooks. (Skinner to Duff: 23 February 1940)

Later correspondence reiterates the idea of having Skinner publish a critique of Duff's revision of his typology in the *Journal of the Polynesian Society* (Correspondence between Skinner and Duff: 1 March 1940, 4 March 1940, 29 April 1940, 2 May 1940, 21 October 1941). However, Skinner became less enthusiastic about the project, presumably as he was undertaking preparation of his 1943 paper (Skinner 1943a, 1943b). There was little correspondence between the two men during 1942, some of which year Duff spent in military service.

In June of 1943, H. D. Skinner published the first part of a paper entitled "The Classification of Greywacke and Nephrite Adzes from Murihiku, New Zealand". Skinner's principal interest in this paper was the influence the different rocks available in New Zealand would have had on the adze-maker; do the same types of adzes occur in different raw materials? He prefaced this discussion with a brief synopsis of his 1938 paper (Skinner 1938), which was not widely available to New Zealand readers. He figured one of each variety of adze from the earlier paper, with a simple description. It is interesting that although he restricted himself overall to figuring only one example of each type or variety, he shows two examples of type IA, the second being a new one not previously figured. Duff was subsequently to make this second example a variety in its own right.

H. D. Skinner was able to show that while the rock had an influence on the final shape of the adze, his typology was still flexible enough to be able to describe adzes made from a range of rock types. It was probably this fact which led him to state:

An attempt has been made to formulate the adze-typology which guided the ancient Polynesian adze-maker in completing this side of his timber-working tool-kit. (Skinner 1943b: 161)

In his original classification of adzes, Skinner had noted that:

Another classification might have been made, based on use. Unfortunately, however, we have so little information under this head that any classification based on it would be almost entirely conjectural. (Skinner 1923: 90)

This concern with a functional classification recurs in the latest of Skinner's works on adzes (Skinner n.d.), which is discussed more fully below. In it he notes:

A functional classification would undoubtedly have been more satisfactory, but it is now too late to attempt one, since the last Polynesian familiar with the functions of every variety of adze used in his area was probably already dead a hundred years ago . . . Adze taxonomy must now be based on somatic characters. (Skinner n.d.)

In his conclusion to the paper, Skinner made a comment which highlights the high degree of intellectual cross-fertilisation which has occurred between the prehistorians of the Pacific and Southeast Asia:

I believe that the shapes of these different types of Polynesian adzes were originally worked out in coastal south-east Asia, or perhaps in the Philippines or in the eastern islands of Indonesia, though decisive evidence on this point is not yet available. (Skinner 1943a: 161)

It is impossible to determine who influenced whom, but it is certain that the idea Skinner expresses here is a point of view held by most other students of Pacific adzes. The ideas have been most strongly expressed in Roger Duff's monograph on the adzes of Southeast Asia (Duff 1970).

Another section of the conclusion is of interest in the light of the emphasis placed by Green and others on the influence of the 'andesite line' on the development of the Polynesian adze kit. The 'andesite line' is a geological term referring to the fundamental difference in the range of rocks which occur in the Eastern and Western sectors of the Pacific. The Eastern sector, which encompasses most of Polynesia, has a very restricted range of rock types, while the Western area, which includes Melanesia and New Zealand, has a much wider range. This allowed the adze-maker in New Zealand and Melanesia a much greater range of usable rock types than was available in most of Polynesia.

It is clear that in Polynesia itself over a long period the shapes were expressed in basalt which alone is available as adze material in the high islands. In New Zealand new materials with qualities very different from those of basalt were accessible to the adze-maker ... It has been seen that though the adze-maker showed himself capable of imposing the old shapes on both of these new media [greywacke and nephrite], both of them imposed limitations on him which would ultimately prove far-reaching. A full tool-kit of greywacke or of nephrite would ultimately have been appreciably less varied than the ancient tool-kit of basalt adzes. Given a sufficient length of time it seems certain that greywacke would have moved the Polynesian adze-typology in the general direction of the adzes of Melanesia. (Skinner 1943b: 161)

H. D. Skinner appears to have overlooked the utilisation of argillite, of which so many of his types in the earlier papers were made. Argillite was a superb material for stone-working, and from it have been made some of the finest and most elaborate adzes found in New Zealand. It only occurs west of the andesite line, and so was not available to Polynesians until they arrived in New Zealand.

The most interesting feature in this 1943 paper is its silence on the question of Duff's proposed revisions of the typology, which Skinner had known about for two years, and some of which he had agreed were sound. It is strange that a man such as Skinner who was always open and receptive to constructive criticism should have acted in this way. One possible explanation is that the matter slipped his mind during Duff's period of service, when correspondence between the two was not regular.

Whatever the case, Skinner's published position on adze typology remained unchanged, a situation which began to concern Duff. Beginning in April 1942 Duff had become involved in the excavation of artefacts at the Wairau Bar moa-hunter site (Duff 1950: 38). Among the most numerous and spectacular of the finds was a wide variety of stone adzes. Duff began to think of writing a doctoral thesis on the Wairau discoveries, an important part of which would have to deal with the adzes. Early in 1943 he wrote to Skinner about problems he was having in getting published a paper on the Wairau material:

I am wondering whether it might not be preferable to expand and enlarge the whole subject of Maori culture of the Moa-hunter period to the scope of a formal thesis or monograph. Would you feel that this would be cutting in on your field, or do you consider the subject large enough to warrant preparation of a monograph? I would be grateful for your judgment on the matter ... Would publication in the J.P.S. immediately prejudice ultimate disposal of the thesis? (Duff to Skinner: 22 January 1943)

Skinner replied to Duff: "I think the idea is excellent and would be very glad to help you in any way", and assured him that prior publication would not jeopardise any eventual thesis (Skinner to Duff: 26 January 1943). It seems that in spite of this advice Duff decided not to go ahead with the preliminary paper on Wairau, but to proceed with his thesis. However, during 1944, he decided it would be useful to have in print a revised typology of adzes (Duff 1945) which he could refer to in his thesis. Accordingly in May he wrote to Skinner:

Regarding the thesis I have of course been pushing steadily on with it and must finish it at all costs within the next few months as I am under some threat of overseas service.

Re your adze typology, I would like you to consider a joint revision, so that in the thesis they could be described in terms of a mutually satisfactory category. The general lines of my revision have been forecast in the Motukarara and Wairau papers [Duff 1940, 1942], and the major points involved are: transferring type III to a subdivision of II, thus leaving type III free to include all adzes of triangular or sub-triangular section, namely IC, VIII(?), and your 'coffin-shaped'. This has the great advantage I think of having your categories I, II, III, IV, cover the fundamental Polynesian adze types: I, tanged quadrangular, II, quadrangular without tang, III, triangular, IV, ditto reversed. I did not of course attack your varieties as such and I must confess I have never yet seen any adze to justify setting up a variety which you have not covered! The paper could be illustrated from the Hurunui cache ... If I submitted my typescript to you before publication we could decide by correspondence what final system was agreed upon, and publish the result as a revision. (Duff to Skinner: 22 January 1943)

In August 1944, Duff forwarded to Skinner a copy of the paper he had written "unilaterally" asking Skinner to alter it where he thought necessary. Skinner wrote back to him:

Your classification is an improvement on mine in that it is based on cross-section which is the simplest test that can be applied to any adze in determining its place in a system of classification. But you have omitted the adzes of circular section. They are important and widely spread in Polynesia itself and in Guam and presumably elsewhere in south-east and eastern Asia ... I therefore suggest that you add this circular sectioned type to your types, though at present it is unrepresented at the Wairau Bar.

There is another point which I think is important. Your criticism of my scheme is so trenchant that most readers will at first regard it as hostile. This impression would be avoided if you were to insert in your first paragraph a sentence or so such as this: 'I believe Skinner has established the validity of all the varieties he figures, but I think his scheme is too complicated to commend itself to the student in the field. The present typology is based on the nature of the cross section of the adze and so distinguishes four types—rectangular, triangular, inverted triangular and circular'. I have marked with a caret the place in your first paragraph where I suggest something of the kind might be inserted. (Skinner to Duff: 31 October 1944)

It is interesting to see how closely Duff followed Skinner's instructions in this respect, with the notable exception of the circular type. The later proliferation of types in Duff's schema has made it clear that the scheme's being "too complicated to commend itself to

the student in the field” was not a prime consideration to him; it is therefore not surprising that the phrase was not his, but Skinner’s. It is not clear just what Skinner meant. It is possible that “the field” was the field or subject of adze typology, but it seems more likely that Skinner was referring to scholars and students undertaking archaeological fieldwork, as Duff had been doing. In making that suggestion, Skinner would have been preserving for himself the opportunity to retain and develop his own classification as a more elaborate schema for detailed typological study, as distinct from Duff’s simplified version for use “in the field”.

By July 1946 Duff had completed the manuscript and illustrations of the “Moa-Hunter Bulletin” (Duff to Skinner: 23 July 1946). The difficulties of having a book of its size published in New Zealand were resolved in 1950, when *The Moa-Hunter Period of Maori Culture* was published as Canterbury Museum Bulletin No. 1 (Duff 1950). The following year, Duff was awarded a Doctorate of Science from Canterbury University, in recognition of the importance of this work.

In his foreword to the book, Skinner stresses the importance of the typological contribution which Duff makes:

The author’s strength lies in his treatment of typological problems; and typology plays a central part in all research on Polynesian material culture . . . the plentiful grave goods are made the basis of the typological studies—work for which the author is excellently equipped.

For a long time it has been evident that whoever works on the history of Polynesian material culture should have as part of his preliminary equipment a knowledge of New Zealand archaeology and typology. (Skinner in Duff 1950: v)

In view of the fact that the book was written not long after Duff’s revised adze typology, it is not surprising that the two are very similar in principle. In 1945, there were designated 5 types and 16 varieties; in 1950 there are 5 types and 20 varieties. However, Duff’s introduction to the chapter ‘Determination of Adze Culture’ contains theoretical considerations not previously given by him (Duff 1950: 138–46).

Initially, Duff’s interest is stated to be the analysis of the finds from Wairau Bar, as a means of showing the nature of the early cultural period in New Zealand (hence the title of the chapter).

The Wairau adzes then, serve as type material with which to compare previous adze discoveries on Moa-Hunter sites, and also to include certain caches found with no human association, but clearly of Moa-Hunter type. (Duff 1950: 140)

However, it becomes obvious that Duff did not confine his interest solely to New Zealand, but believed that a study of adzes from this peripheral part of the Pacific would assist in the study of culture in island Polynesia:

If Moa-Hunter New Zealand inherited in total, types which are variously scattered round marginal Polynesian outposts . . . the explanation of the pattern seems more in terms of the nature and number of types in vogue at the original dispersal points, and the times and directions in which the migrations travelled. (Duff 1950: 143)

It is necessary then to describe the Moa-Hunter adze types with some precision, and in simple categories or types (with sub-varieties) into which the adzes of both the later culture in New Zealand and those of the other Polynesian groups can fit and be compared. To do this I propose to modify the excellent classification developed by

Skinner (1938 and 1943), by accepting all his varieties but regrouping them into five instead of ten types (see Duff, 1945). (Duff 1950: 144)

I have endeavoured . . . to provide a typology not only covering the major types of New Zealand, but also intended to apply to the adzes of Polynesia as a whole. (Duff 1950: 145)

Roger Duff's interest in Polynesian adze types is reflected in the illustrations of his types, many of which show non-New Zealand examples, and in the addition of type 4F, a Samoan form, which does not appear in the "Revised Typology" (Duff 1945). It is interesting to note that this form was retained in the second edition of this work, but deleted from later papers (Duff 1959, 1970; see Table 1).

TABLE 1
ADZE TYPES AND VARIETIES IN THE WORKS OF ROGER DUFF

	1	2	3	4	5	6	7	8	9	10
1945	A-D	A-C	A-D	A	-	-	-	-	-	-
1950	A-F	A-C	A-E	A-F	A-C	-	-	-	-	-
1956	A-F	A-C	A-E	A-C,E-F	A-B	A-B	-	-	-	-
1959	A(2)-F	A-D	A-G	A-E	A-C	A-B	-	-	-	-
1970	A(4)-G	A(2)-D(2)-H	A-G	A-E,G-H	A-F	A-D	A-E	A-J	A	A
1977	A-F	A-C	A-E	A-C,E-F	A-B	A-B	-	-	-	-

There exists a final work by H. D. Skinner, entitled 'Polynesian Adzes' (Skinner n.d.). Unfortunately, it is only fragmentary, and is undated. However, because it cites Duff 1950, but not Duff 1956, it can be placed with some certainty in the period between the publication of these two editions of Duff's work. In 1946 Skinner had written to Duff:

Thanks very much for the copy of your paper on a revised typology of adzes. Your criticism of my typology is sound in respect of it being too involved and also too subjective . . . I would like to try my hand at a final version in which the verbal side would be reduced to a minimum the key being almost entirely graphic. Whether I shall have time to do this seems rather more than doubtful. (Skinner to Duff: 10 January 1946)

This tendency in Skinner's works to reduce verbal description to a minimum and to rely heavily on illustrations can be seen to increase in his works through the years; it is no doubt the mark of a scholar so familiar with his subject that he is unaware of the need on the part of others for written descriptions of the objects being discussed. It is interesting that in discussing the ethnological work of Elsdon Best with me in 1970, H. D. Skinner mentioned that Best had once described himself as having no visual imagination. For Skinner, this explained all Best's shortcomings in artefact classification. In this respect, Gathercole's description of Skinner is perfectly valid:

When one walks round a museum collection with him, one is impressed by his visual attitude to the material. It is the eye, assisted by the fingers, and an acute 'visual' memory, that gives depth to the examination of the artefact. (Gathercole 1974: 16)

The tendency towards minimal descriptions must be regretted in this particular case, since it appears that what has survived of this 'final version' is simply the introduction; the

figures and their captions, the most valuable part of the work from Skinner's point of view, cannot be traced, and may indeed never have been created.

H. D. Skinner clearly felt that the need still existed for a definitive study of the typology of Polynesian adzes:

After much discussion, in which the contributions of Buck and Duff have been of the greatest value, a classification is here advanced which is thought to meet satisfactorily the present needs of research. (Skinner n.d.)

He obviously did not accept that Duff's typology was the final solution to the question. It is of interest that he continued to hold that view. He wrote a note to Peter Gathercole following the appearance of comments in an article by Suggs (1961) about Duff's typology:

I think Duff's type 2, variety A, is unsatisfactory. It includes two forms which should be placed elsewhere. In fact it would be better to dispense with variety A as Duff conceives it, and replace the two pieces he figures (Fig. 35) by those he shows in Fig. 36.

It is not clear to which of the adzes of Duff's Fig. 35 Suggs is referring; perhaps left specimen, lower row. But in my opinion this is a variety of Type 1. Duff's Type 2 Variety C seems to me questionable also. I would break it up.

I think the wholesale acceptance of Duff's classification is regrettable.

This note was written to Gathercole on the reverse of a printed card reading "With the compliments of the Government Printer, Lambton Quay, Wellington". This suggests the card was originally in Skinner's complimentary copy of the second edition of *The Moa-Hunter Period of Maori Culture* (Duff 1956), which Skinner would have consulted to check Suggs' point.

The classification proposed by Skinner is clearly heavily influenced by the approach of Buck, and more especially that of Duff. Skinner acknowledged the 'subjective' nature of his earlier works, and accepted as more objective the use of cross-section as a diagnostic feature, as "the work of Buck and Duff demonstrated" (Skinner n.d.). The resultant typology appears as an extension of Duff's schema to include some forms described earlier by Skinner, which do not fit readily as Duff types:

<i>Type I</i>	Adzes with rectangular cross-section grip present.
<i>Type II</i>	As above, but without grip.
<i>Type III</i>	Trapezoidal cross-section, shorter parallel side upward.
<i>Type IV</i>	Triangular cross-section, apex downward.
<i>Type V</i>	Triangular cross-section, apex upward.
<i>Type VI</i>	Circular cross-section.
<i>Type VII</i>	Cross-section a segment of a circle.
<i>Type VIII</i>	Lenticular cross-section.
<i>Type IX</i>	Laterally hafted adzes.

(Skinner n.d.)

H. D. Skinner acknowledged the "important help" of Andrew Scott in the illustration of the classification. When this was discussed with Skinner in October 1971, he was unfortunately unable to recall the circumstances surrounding the preparation of the paper, but Scott supplied some information about it:

I worked with him on this for some time . . . This paper was to be read at (I think the 5th S.P. Congress) but H.D.S. deferred this because of Roger Duff's new classification . . . This would be about 1955. (A. Scott to G. S. Park: 12 November 1971)

Scott maintained his interest in this paper, and prepared a revision of the work, which he unsuccessfully endeavoured to have published, in view of the "considerable dissatisfaction" with Duff's work:

The paper is a simple, consistent, comprehensive typology which I hope will 'unlock' all the 'mute' adzes in public and private collections, and which will be supplemented by 'talking' adzes from scientifically excavated sites . . . My classification will need to win universal acceptance first. I am sure it will and it is already being taught by me at Massey [University Extension classes], used for adze classification in Rarotonga and the Manawatu Museum (Palmerston North). (A. Scott to G. S. Park: 12 November 1971)

In view of the widespread use of Duff's typology as a descriptive medium for the discussion of adzes, it would seem unlikely that any new typology could win 'universal acceptance'. Even Davidson's excellent descriptive method has been largely ignored (Davidson 1961; cf. Palmer 1963). The use of Scott's new typology would only have led to more confusion than already existed on the subject of adzes. Predictably, the proposed new classification has not achieved any permanent acceptance.

As a rather less than serious footnote, it is intriguing to note that the academic controversies over adze typologies made some impact in more popular 'historical' literature. Figure 1 is reproduced from Part Two of *The Centennial History of Barnego Flat* (Dadds 1966). It depicts the Dadds Adze, which purports to have been found in the nineteenth century at a township of that name in South Canterbury which was later washed away by a flood, removing all demonstrable traces of the settlement's existence. The rather curiously named authors tell us that the adze is:

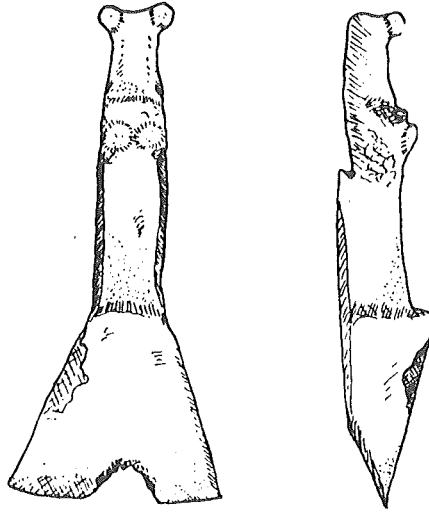
a variant of the widely distributed hog-backed moahunter adze, in which broad grouping it has been further expertly classified as a rare expanding-bladed, double-horned quadrangular two-tanged type. (Wakefield and Lands 1966: 176)

THE LATER ADZE STUDIES OF ROGER DUFF

In 1956, a second edition was published of *The Moa-Hunter Period of Maori Culture*. The principal alterations made were to include more recent data which supported, or in some cases, modified the earlier conclusions (Duff 1956: xi-xii).

However, two important modifications were made to Duff's adze typology. Adzes of circular section, which were classed as Variety D of Type Four in the first edition, were here grouped as a separate type, Type Six. In making this alteration, Duff bowed to the opinion of Skinner, expressed as long ago as 1944 (see above) that this group of adzes was a separate type (Duff 1956: 192). It is interesting that the claim Duff made for the existence of this type was not based on the 'objective' criteria of cross-section and grip he claimed to be employing, but rather on the usefulness of the type to describe pan-Pacific adzes:

I now accept his [Skinner's] opinion that the evidence of related forms in the Chathams, Pitcairn, Mauke, Aitutaki, and, beyond Polynesia, in Guam and Indonesia, renders it unlikely that the New Zealand forms could have a local and independent origin . . . circular gouges are sufficiently widespread to justify setting up a separate type as Skinner has suggested. (Duff 1956: 191-2)



E. Dadds del.

THE DADDS ADZE

(Length: 499 mm; Cutting edge: 227 mm;
Weight: 13 lb 13 oz.)

Figure 1: The Dadds Adze (from Dadds 1966).

Roger Duff's extra-New Zealand interests were further shown by the establishment of two varieties of Type Six, a New Zealand and a Pitcairn form.

The second major change to the adze section of the book concerned the distribution of the 'type-fossil' of early Polynesian culture, the sub-variety of Type 1A which has lugs on the poll. In describing the distribution of this adze type, Duff said in his first edition:

Thus it is found on a tortuous route winding north-west through the atolls of Manihiki, Rakahanga, through Nassau and far to the west in Uvea, probably travelling via the Tokelau Islands. (Duff 1950: 149)

and later in the work:

Two important localities, so far not mentioned, disturb the regular and clear-cut nature of this division. The first is a single example of Variety A proper, recorded by Macgregor from the Tokelau atolls ... the second the presence of two small examples of 1A (one 'horned') from Uvea. (Duff 1950: 156)

Roger Duff suggested two possible explanations for these occurrences: firstly that they represented an extension of the distribution from the Northern Cooks; secondly that they were a marginal survival from a secondary dispersal centre in Samoa.

In the second edition, Duff wrote:

Since this book was first published, the distribution of the type has acquired a sharper focus from the elimination of the Uvea record in Western Polynesia and from the first

authenticated record of the horned adze from its hypothetical dispersal centre, the Society Islands

Hand examination . . . eliminated Burrows' published record (1937) from Uvea. A glance at the original made it clear that it was not a characteristic example of the horned adze, but rather a type with only incipient lugs. (Duff 1956: 149)

According to Burrows (1938), there are a number of records of tanged (Duff Type 1A?) adzes from Western Polynesia (Uvea) and Intermediate Polynesia (Ellice, Tokelaus, Rakahanga, Nassau). These adzes are often of rather indeterminate shape, uncertain locality, and non-indigenous rock. It seems therefore that we can agree with McGregor that the "logical explanation is that . . . these adzes were brought from the East" (Macgregor 1937: 173; cf. Skinner 1940). However, it is important to note that it is not on these grounds that Duff excludes these adzes from consideration. Rather he decided at a glance that the Uvea example was not characteristic, and could therefore be dismissed. In the light of this, Burrows' original description of the adze is of interest:

On the front of the tang, next the poll, are two pronounced lugs about $\frac{1}{8}$ inch high and $\frac{1}{4}$ inch in diameter at the base. (Burrows 1937: 46)

This description, together with the drawing of the adze in Duff's book (Duff 1950, 1956, 1977: Figure 30) would suggest that the lugs are more pronounced than Duff's phrase "incipient lugs" would indicate. This is a clear example of the subjective nature of adze classifications such as Duff's, in which relationships can be established by "a glance" (Duff 1956: 149). Curiously, the Uvea adze is still figured in both the second and the third editions of *The Moa-Hunter Period* (Duff 1956: 147, 1977: 147).

It is further of interest to note Duff's treatment of other Western Polynesian tanged adzes (Figure 2). In his distribution map (Duff 1950: 155, 1956: 153) the Uvea link was omitted in the second edition, but the occurrence in the Tokelaus was still maintained. However, a later version of the map, on display in Canterbury Museum and reproduced in 1969 in *No Sort of Iron* (Duff 1969: 13), showed a complete break between West and East Polynesia, without any mention of the Tokelau evidence, or the reason for its omission. The third edition of *The Moa-Hunter Period* (Duff 1977) is substantially a photo-reprint of the second edition (with additional material by M. M. Trotter). Significantly, however, the version of the map (Figure 32) is the later version, modified to omit the Tokelau link. In 1956, Duff wrote

Beyond New Zealand, the type is recorded from the Chathams, Rarotonga, Tokelau, Pitcairn, Marquesas and Hawaii (Fig. 31). It is rare at Rarotonga and Tokelau, but numerous at Pitcairn and Marquesas. . . (Duff 1956: 155)

In the third edition, the sentence is modified to read:

Beyond New Zealand, the type is recorded from the Chathams, Rarotonga, Tokelau, Pitcairn, Marquesas and Hawaii (Fig. 31). It is rare at Rarotonga, but numerous at Pitcairn and Marquesas . . . (Duff 1977: 155)

No explanation is given for the removal from the record of the Tokelau occurrence. Both editions carry the paragraph

One locality disturbs the regular and clear-cut nature of this division of Polynesia on the basis of adze types. This is the presence of a single example of variety A, without lugs, recorded by Macgregor from the Tokelau atolls, due north of Samoa. As the

other Western Polynesian record, previously established, from Uvea, has proved on examination to be from the Society Islands and post-European, one can similarly accept the Tokelau record with reserve. (Duff 1956: 156, 1977: 156)

In Appendix 1, Figure 32 is described as including both the Uvea and Tokelau examples in the second edition (Duff 1956: 358), but only the Uvea example in the later edition (Duff 1977: 388).

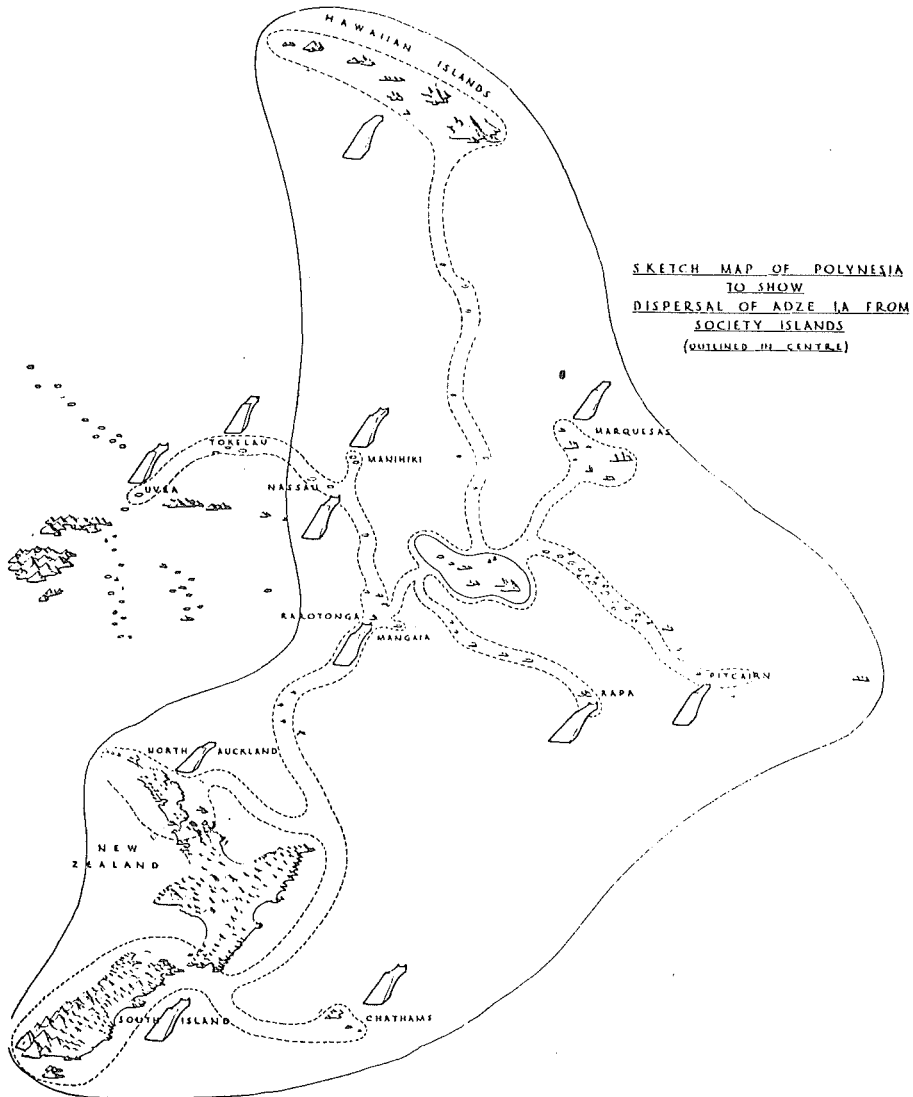


Figure 2: The distribution of the tanged 1A adze (from Duff 1950).

Roger Duff's reservations in 1956 presumably led to the removal of the record from the maps in the two later publications (Duff 1969; Duff 1977), even though the reference to the Tokelau occurrence remains. It is to be regretted that Duff did not explain his reasons for this alteration.

In 1959, in a festschrift volume presented to H. D. Skinner, Duff published 'Neolithic Adzes of Eastern Polynesia'. Duff had presented an earlier version of this paper at the Eighth Pacific Science Congress in Manila in 1953 (Solheim (ed.) 1968: iii). [At that same Congress, H. D. Skinner presented a paper which described the adzes of Polynesia, Southeast Asia, coastal, eastern and northeast Asia and parts of North America as being similar to each other in respect of the reduction of the lashing grip, and hence different from those of the rest of the world (Skinner 1968)]. It is a curious feature of many of Duff's works that each foreshadows the next. Thus much of *The Moa-Hunter Period of Maori Culture* was devoted to material, and especially adzes, which were not Maori, but island Polynesian. Fully one quarter of the 1959 paper is allocated to a discussion of the adzes of Southeast Asia and Indonesia, which Duff was to treat in full eleven years later (Duff 1970).

In the Skinner Festschrift, Duff presented "an amended typological classification (six types instead of five)" (Duff 1959: 122), though as mentioned above he had already established six types in the second edition of *The Moa-Hunter Period* (Duff 1956). He acknowledged Skinner's role in recognising the "neolithic adze as the most important 'cultural fossil' of Polynesia, and, indeed, Oceania" (Duff 1959: 122).

Roger Duff's use of distributional data in this paper demands further comment. In both editions of *The Moa-Hunter Period* Duff stated that Type 2 Variety A was "essentially an offshoot of Variety A Type I" (Duff 1950: 162, 1956: 161). In his own copy of the first edition, Skinner made the marginal note "No! Reverse is the case". There is no written evidence that Skinner ever communicated this idea to Duff, but by 1959 Duff had come round to Skinner's point of view, that the IA was developed from the 2A. The principal reason was that the 2A corresponded with the 'Vierkantbeil' of Southeast Asia, postulated by Heine-Geldern to be an early and widespread form:

As Type 2 has strong typological claims to represent a direct carry-over from Indonesia it can further be assumed to be an old form. (Duff 1959: 143)

Duff considered Type 1 to be related to the stepped adze of Indonesia, and probably a direct diffusion from there.

From its wide distribution, this is second only to Type 2, Variety A, in age and extent of dispersal in Eastern Polynesia. (Duff 1959: 143)

The reasons Duff gave as proof of the new idea do not appear convincing. Type 1A, with and without lugs, (Figure 3) is found according to Duff in the Chathams, North and South Islands of New Zealand, Northern and Southern Cooks, Society Islands, Tuamotu, Rapa, Ra'ivavae, Flint (Line Group), Pitcairn, the Marquesas, Hawaii and possibly the Tokelaus (Duff 1959: 129). The 2A is found at the Chathams, North and South Islands, Pitcairn, Marquesas, Hawaii, Mangareva and Easter.

Although the units in which distribution is measured in Duff's Figure 9 (Duff 1959: 142) are not clearly explained, it is to be expected that a widespread (and therefore early) form would rate higher than a later one. However, if the totals for Types 1 and 2 are calculated on the unit basis shown in the work, Type 1 has 54 units, while Type 2 has only 45. Duff

POLYNESIA
VARIETIES OF TYPE I

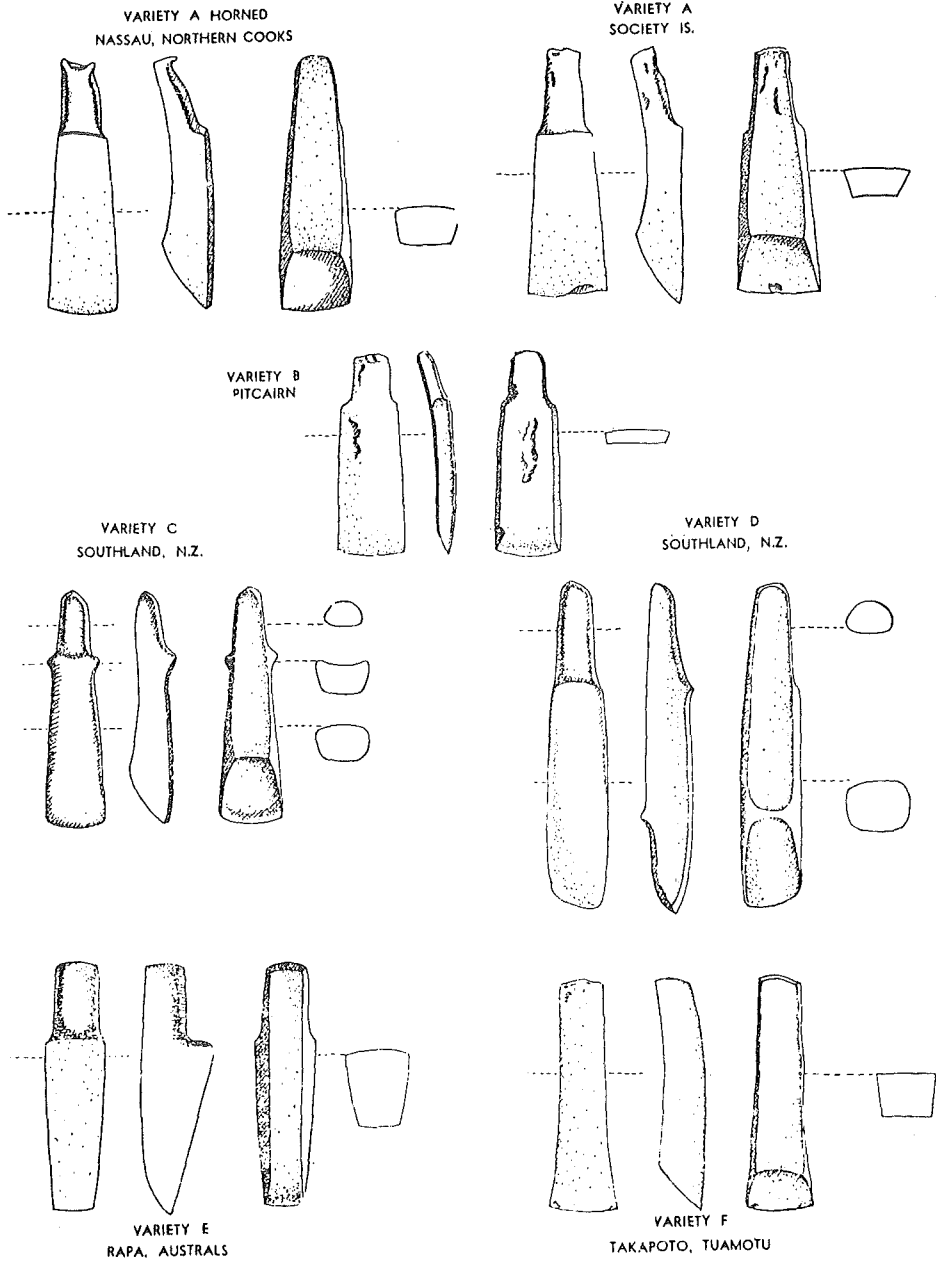


Figure 3: Adzes of Duff's Type 1.

was entitled to make a subjective claim about the age and distribution of adzes, but he did not prove objectively the claims he made, even though that is what appears to be the case at first sight.

Roger Duff reiterated the theoretical basis for his study:

In accordance with the age-and-area theory of geographical distribution, it will be assumed that the oldest forms are those with the widest geographical range, the latest those with a restricted range. Therefore in the distribution lists which follow each type description the islands will be arranged in order of distance from the Society group, which is the geographic centre of Eastern Polynesia.

To the objection that such theorizing is untenable without establishing by archaeology the relative age of the respective types in the various groups, the point can be made that archaeology might never establish a better time sequence of Polynesian adze types than can be deduced from distribution. (Duff 1959: 127)

It seems that Duff had already encountered some criticism of this theory. His critics would have included the overseas trained archaeologists who had recently taken up university appointments in New Zealand. These people, including Peter Gathercole, Jack Golson and Roger Green, would have been aware of the complete disregard in which the age-area theory was held in the United States, where it had originated. Golson wrote, in his paper 'Culture Change in Prehistoric New Zealand' in the same *Festschrift* for Skinner:

Little attention has been paid to theoretical issues in New Zealand archaeology, though theoretical concepts are employed by New Zealand archaeologists. The development of archaeology in New Zealand requires that attention be directed to the methodology of the subject, before the multiplication of *ad hoc* formulations sows the seeds of confusion. This review of New Zealand archaeology will suggest modifications of existing terminology where it is felt such confusion already exists. (Golson 1959: 30)

Later, of course, Roger Green turned Duff's opposition between archaeology and distributional studies (Duff 1959: 127) on its head. He wrote:

the reply might now be: distribution studies can never establish better time sequences than archaeology and they must be used cautiously when carried out in advance of or without reference to archaeologically dated materials. (Green 1971: 38)

ROGER DUFF IN ASIA

In 1961, Duff was awarded a SEATO Fellowship for study in Asia, the purpose of which was to endeavour to establish:

- (a) The origin of Maori adze techniques within Polynesia, and
- (b) possible pre-historic connections between Polynesia and South-east Asia during the Austronesian phase of the Neolithic. (Duff 1962a: 32)

During the tenure of this fellowship, he examined museum collections of adzes throughout the area:

In general, the collections studied represented adzes found on the surface and without any archaeological demonstration of the particular period of the Neolithic from which they derived. In this situation the method was to classify the collections into designated types and to draw conclusions as to age and order of succession from plotted distribution

The main recording method was a tedious one of making measured pencil drawings ... of each selected adze ... Photography proved useful as a supplement, (but not a substitute) as the fine distinctions between types were easier to bring out in the selective emphasis which diagrammatic treatment makes possible. (Duff 1962a: 33)

In several publications which draw on the data collected on this study tour, Duff extended the use of his adze typology further (Duff 1962a, 1962b, 1967a, 1967b, 1968, 1970). Adzes had now become a tool for the writing of culture history, in that from studying them Duff was able to decipher the prehistoric patterns of settlement, and migration routes in South-east Asia and the Pacific:

One might suggest as an alternative an origin in Japan, where the type is common, by an island-hopping route via the Bonin and Marianas Islands, which by-passed the Asian mainland and off-shore islands. (Duff 1962: 34)

The ancestors of the West Polynesians migrated from some point of South-east Asia where the lashing grip had not been developed and arrived in their present area to perpetuate this fashion through the sheer conservatism of tradition. The fashion of the lashing grip reached East Polynesia by a separate and later series of migrations in original contact with an Austronesian area, such as the Philippines, where the grip had been invented. The lashing grip of East Polynesia was an independent invention within East Polynesia itself and not a carry-over from northern South-east Asia. (Duff 1967a: 23)

The tradition was carried far into the Pacific by migrant groups leaving from the south-eastern coast of the Philippines, or from the Celebes area of Indonesia. These coasts are well-placed for an island-hopping migration by way of the Carolines, or Marianas, thence via the Marshall Islands to Polynesia ...

The hypothesis also requires evidence of the Stepped Adze in transit in Micronesia. I think examples will be found, in the Marianas and Carolines, and their present absence is due primarily to a failure of records. (Duff 1967b:4-5)

Roger Duff had here abandoned the theoretical base of the Age-Area hypothesis, and traced these migrations by use of the 'type-fossil' approach, which has a considerable ancestry in archaeology. At the time he was writing, however, archaeological distributional studies employed a much more sophisticated approach than Duff used (see, for example, Bradley 1971; Clark 1965; Renfrew *et al.* 1966). Duff's approach to his data was too uncontrolled to allow uncritical acceptance of the migrations he postulated.

Stone Adzes of Southeast Asia was Roger Duff's last publication on adzes, apart from the third edition of *The Moa-Hunter Period*. In *Southeast Asia*, Duff presented an 'illustrated typology' for Southeast Asia. He adapted "to the Southeast Asian situation typological systems devised by a succession of Polynesian students" (Duff 1970: 7). Duff's interest in this area was not divorced from his previous work in Polynesia, and his next work was projected to be a typology of Polynesian adzes which drew on the information gained in the Asian study (Duff 1970: 9). The approach Duff intended to use in this projected study was most probably the type fossil method discussed above, as in the most recent of his studies of Polynesian adzes (Duff 1963, 1968). As far as is known, this work was never completed. Duff was much occupied in the years prior to his death with the Canterbury Museum and its development, especially the completion of the Roger Duff Wing (M. M. Trotter pers. comm.). His last publication on adzes was the third edition of *The Moa-Hunter Period* (Duff 1977), which, as discussed above, made very few changes to the position he had adopted in 1956.

OTHER ADZE STUDIES IN SOUTH-EAST ASIA

A number of studies of adzes in areas bordering the Pacific are of interest because of the interplay which has taken place between the study of adzes in both areas, the most recent manifestation of which is the monograph by Duff discussed above (Duff 1970).

The most important of these is the work of Heine-Geldern, which received its classic formulation in his 'Urheimat und fruhesten Wanderungen der Austronesier' (Heine-Geldern 1932). Portions of the German work have been translated into English by Finn (1958) and Skinner (1957), both of whom do not give sufficient idea of the substantial use which Heine-Geldern made of material other than adzes. However, it is the adze data which is of interest here, since this is the sphere in which the interplay of ideas with Pacific prehistorians has been the greatest. Skinner, Buck and Duff, as well as many others, have made extensive use of Heine-Geldern's theories in the formulation of their own. This borrowing of ideas was not however entirely one-sided, since Heine-Geldern makes extensive use of data and ideas published by Skinner and Buck in this and other works (see, for example, Heine-Geldern 1932: 578-85, 1949: 266). It remains true, however that Pacific scholars have borrowed heavily from Heine-Geldern's postulation of waves of people, moving through Southeast Asia and the Pacific, who are identifiable by the adze forms they left behind them. This influence is particularly strong in the most recent of Duff's work, as noted above (Duff 1970).

The second important Asian influence is H. O. Beyer (Beyer 1947, 1948; see also Skinner 1949—it is interesting that Skinner should have drawn the attention of members of the Polynesian Society to the works of both Beyer and Heine-Geldern). Beyer's work has been treated by Pacific scholars as being more precise than Heine-Geldern's because it was based on archaeological fieldwork which gave it some objective chronological framework (Skinner 1949), though Duff expressed caution at accepting uncritically Beyer's dates for his sequence.

In the absence of stratigraphic archaeology or any approach to absolute chronology such as Radio-carbon analysis the period assigned to each successive phase is naturally tentative. (Duff 1970: 126)

In general, however, Duff accepted the basic outlines of Beyer's schema (Duff 1970: 126-31). It seems surprising that Duff should have overlooked the growing evidence derived from 'stratigraphic archaeology' and radiocarbon analysis which seriously questioned not only the absolute dates, but also the general tenor of Beyer's argument (Evangelista 1960, 1963, 1969; Fox and Evangelista 1957; Fox 1959; Solheim 1964: 210-11, 1968: 21-62). These reports should have made Duff wary of using Beyer's data from the Philippines to support reconstructions of Pacific prehistory, as he did in his modification of Buck's model for the settlement of Oceania (Duff 1970: 12-13).

Roger Duff's schema for Pacific prehistory is unacceptable for two reasons. In the first place there is the dubious nature of the Philippines evidence referred to above. More serious than this, however, is the dubious nature of the taxonomic method he used to make the artefact comparisons which are the basis of his hypothesis (see also Green 1971).

THEORY AND PURPOSE IN ADZE TYPOLOGY

From the very beginnings of the study of prehistory, comparisons of different types of artefacts have been the basis of the subject. Between 1945 and 1960 archaeologists discussed

extensively the application of typology to archaeological data, and the usefulness or otherwise of such studies. The major issue discussed was the status of the types which a typologist designated. Were types inherent in the material and discovered by the archaeologist, or were types no more than an analytical super-structure imposed on the material? To a large extent this issue was settled to the satisfaction of the holders of both points of view:

Our attitude is that these opposing views are not completely antagonistic . . . The actual procedure of segregating types is therefore a more complex operation than is suggested simply by such words as 'design' or 'discovery', and is in effect a painstaking combination of both. (Willey and Phillips 1958: 13)

During the course of this debate, it became apparent that different scholars were using the same terms to denote different ideas. 'Classification', 'description', 'typology' and 'taxonomy', were treated by many writers as synonyms, while others endowed each word with a specific meaning. 'Classification' and 'typology' are synonymous. They describe the process whereby the archaeologist can break up the universe of objects with which he is confronted into more manageable units for the purpose of discussion and analysis. Thus, instead of writing that an archaeologist found "an asymmetrically bevelled, ground-edged stone implement, having all over surface polishing, with a quadrangular cross-section and no lashing grip" a New Zealand scholar can write that a 2B adze was found, and most of his readers will know quite clearly what he means. Typology is classification for descriptive ends.

More serious confusion, however, arose between the terms 'typology' and 'taxonomy'. There is a very important difference between them. Not only does the term '2B adze' convey a description of a particular artefact, it carries a greater connotation. It has been widely accepted in New Zealand that the 2B adze is associated with the 'Classic Maori', a term which has cultural and chronological meanings (Duff 1956: 163; Golson 1959: 48). The statement is no longer a typological description, but a taxonomic statement. Taxonomy is the study of the relationships between objects, between artefacts. Taxonomic studies are concerned with the cultural relationships of the typologically described 2B adze, both in time and space. What is its origin, how did its form develop, what is its distribution? These are all questions of a taxonomic nature.

In 1923, Skinner did not discuss why he should choose to emphasise comparative studies; at that time such studies were the foundation of anthropology, both social and cultural. Skinner had been exposed to such views both in Cambridge and in the United States, meeting several of the foremost anthropologists of the day. The following quotation is typical of his attitude to the subject:

One of the objects of the present research has been to determine the closeness of the relationship existing between the material culture of the Morioris and that of other parts of Polynesia, and as this can be indicated best by comparative examples, these have been supplied by line drawings in the text. (Skinner 1923: 5)

In his 1938 study, Skinner paid some attention to the question of what constituted a type:

The word type is here used to designate a group of adzes which exhibit a general somatic resemblance comparable to the somatic resemblance between members of a single biological species . . . Some of the adze types are further divided into varieties comparable with biological varieties within the species. (Skinner 1938: 147)

It is not easy to determine exactly what Skinner meant by this biological analogy. Freeman has noted, in this context that:

As Gordon Childe and others have noted, the notion of typology (the arrangement of artifacts into significant groupings on the grounds of morphology) was borrowed from evolutionary biology and palaeontology; the general assumption being that tools, like organisms, have "evolved by progressive modifications towards increasingly efficient forms". (Freeman 1959: 25)

It is interesting to recall that between 1919, when he was appointed to his joint position at the University of Otago and the Otago Museum, until he succeeded him as Director of the Museum in 1937, Skinner worked at Otago Museum in a rather uncomfortable professional relationship under the Museum's Curator, Professor William B. Benham. Benham was the eminent Professor of Biology at the University of Otago for forty years, and his teaching and research activities were conducted from the Museum premises. Skinner worked in a very biological milieu at the Otago Museum. Even after his retirement, Benham "continued his scientific work and haunted the museum till the end of his life . . . He died at the age of ninety in 1950." (Morrell 1969)

H. D. Skinner noted that there are basically two subdivisions within each type: large and small.

In some cases an adze type which had been worked out for the performance of a particular function might later be found suitable for the performance of another quite different function. Thus two groups, large and small, may be found within the type, differing not at all in shape, but differing decisively in size. (Skinner 1938: 147)

Roger Duff, like Skinner, paid little attention to the question of the purpose of classification. He had no doubt learnt from Skinner the attitude that typology was a normal part of the study of material culture, something to be taken as given, not queried. In addition he was faced with the same basic problems of the curation and display of museum material which have given rise to most of the typologies of material culture from the time of Thomsen to the present day, including, of course, Skinner.

However, Duff does appear to have been more aware than Skinner of the need for a theoretical base for his ideas. From his student days right through his career Duff used as his *raison d'être* the idea of the marginal survival of archaic forms. He placed great stress on the study of artefact types on the periphery of a supposed culture area, since, according to the theory, they represent the survival of forms long obsolete at the cultural centre. Duff consistently maintained this idea, in his studies of marginal areas—'Southern New Zealand adzes' and 'Eastern Polynesian adzes' (Duff 1945, 1959) are the two most explicit titles, but the idea is central to most of his major works.

Roger Duff wrote to Skinner from London in 1947 and 1948, describing the way in which the 'Functionalists' of the London School of Economics tried to persuade him that the idea was invalid. Raymond Firth had read Duff's paper in *Mankind* where he had stated "the prototype Eastern culture is best retained on the farthest margins of the great circle of its migration ripples" (Duff 1947: 282). Duff wrote that Firth:

grudgingly admitted it was the 'most plausible account of this nature he had yet read' but was obviously uneasy and suspicious of the whole thing. On his advice I have been reading the criticisms of the German Culture History School, and Diffusion studies generally. They convinced me 1. That the fundamental assumptions on which they

are based are still not abrogated. 2. That in New Zealand and Polynesia we have the opportunity to test them in ideal conditions, working from the basis of *known* earlier culture zone. (Duff to Skinner: 6 December 1947).

In the 1945 paper, Duff expounded the theory, and then used it to justify his attempt to make his typology fit all Polynesian adzes. Since New Zealand was the most marginal area in the Pacific, we find here not only:

the adze types characteristic of the earlier marginal Polynesian exodus, but also the incipient proto-types of the later patterns elaborated in such central areas as Samoa, the Cook Islands, and the Society Islands . . .

It follows then that the student of New Zealand adzes should attempt to provide in his typology a key simple enough, but at the same time elastic enough, to be readily employed by the student of any of these related adze cultures. (Duff 1945: 147)

This is a most important passage, in that Duff gives in it the rationale behind the whole series of his papers on adze typology. In none of his other works does he state so clearly the ideas which lead him to progress from southern New Zealand through the Pacific to Southeast Asia using basically the same typology, modified only slightly to accommodate new variants.

As Roger Green and Janet Davidson noted in their study of Samoan stone adzes:

Duff's classifications are intended to reveal the relationship between the early adzes from New Zealand and those of Eastern Polynesia, or between the various East Polynesian adze forms and their Pacific and Asian counterparts, and are not designed for describing the adzes of a single island group, with the possible exception of New Zealand. (Green and Davidson 1969: 22)

Roger Duff's major criticism of Skinner's types was not, then, that they lacked simplicity and were too elaborate to serve the student in the field. He was concerned rather that a student of adzes from parts of the Pacific outside New Zealand would find that what were clearly related types would be given unrelated type numbers. At first sight it appears that Duff merely rearranged the types of Skinner in a more orderly fashion. However, Duff in fact brought about a revolution in the study of the stone adze in the Pacific. By arranging his system around the criteria of 'usefulness' to a scholar trying to relate adzes of different groups, he abandoned the typological method and developed a taxonomy of adzes. His prime interest was no longer in the description of adzes but in the analysis of the cultural relationships between the peoples who made the adzes.

It is highly probable that this was also the aim of Skinner, and of Duff in his earlier study, but nowhere in print does Skinner cross this boundary between the establishment of a descriptive typology, and the application of the typology to taxonomic ends. Duff may not have been consciously aware that he had in fact made such a change in orientation, since this most important difference between his work and that of Skinner was not treated explicitly in the 'Revised Typology' paper (Duff 1945), or indeed in any of his later studies. He claimed to have done nothing more than reduce Skinner's original ten types to five "without any essential loss, and indeed with advantage" (Duff 1945: 148).

The grouping of types and varieties is shown in Table 2, where it is compared with the groupings used in the later versions of Duff's taxonomy.

The proliferation of types and varieties was caused in part by the broadened geographical horizons in some of his later papers, but much of it was to clarify essentially taxonomic

TABLE 2
THE PROLIFERATION OF ADZE TYPES AND VARIETIES IN THE WORKS OF H. D. SKINNER
AND ROGER DUFF

Author	Date	Types	Varieties	Area of Application
Skinner	1923	10	10	Chathams
Skinner	1928	10	10	Chathams
Skinner	1938	10	16	New Zealand
Duff	1945	5	16	New Zealand
Duff	1950	5	23	Polynesia
Duff	1956	6	23	Polynesia
Duff	1959	6	27	Polynesia
Duff	1970	10	55*	South-east Asia
Duff	1977	6	23	New Zealand

* 60 with South-east Asian sub-varieties

relationships. Even if Duff had intended in 1945 that his revision would make Skinner's classification less complicated (and I have shown above that this was not his motivation), this claim certainly cannot be sustained for later versions of the schema.

The basic problem is that Duff applied the methods of typology to his taxonomic studies. In typology, provided all scholars understand the symbols used to describe the types (e.g., '1A', 'hogback'), the objective existence of the types is not of great concern, since they are little more than a short and convenient method of describing artefacts.

In taxonomic studies, however, the case is very different. Taxonomists endeavour to demonstrate relationships between cultural groups by describing the similarities and differences between certain groups of artefacts. These are no longer descriptive symbols—they are objective realities, which existed in certain proportions at known places and at fixed points of time.

The problem then with Duff's taxonomy is one of subjectivity. Duff's types (and those of Skinner and others) may indeed be objective realities which do demonstrate the cultural relationships claimed for them, but there is no conceivable way of demonstrating the fact. Most of the taxonomies used in archaeology suffer from this same basic difficulty: much of the data and most of the methodology is internalised by the researcher, and as such is not amenable to proper scrutiny. It is therefore very difficult for any later worker to test the methods or results achieved without undergoing the same internalising process—a very lengthy, and perhaps in the final analysis impossible, task.

Concern over this subjectivity led archaeologists in the 1960s to attempt to achieve objectivity in taxonomic analysis, particularly using taxonomic methods borrowed from the natural sciences. One important aspect of this work was the application of electronic computers in numerical taxonomic studies of prehistoric artefacts. Foss Leach pioneered this work in New Zealand, in his master's thesis 'The Concept of Similarity in Prehistoric Studies' (Leach 1969). Experimentation with the use of factor analysis, under Leach's guidance, led the author to present as a thesis for the degree of Master of Arts a consideration of 'The Classification of Prehistoric Stone Implements by Factor Analysis' (Park 1972).

This paper has been developed from one section of that thesis, which used published material and manuscript sources, especially from the archives of the Otago Museum, to examine the history of typological studies of adzes in the Pacific, and the way they had been adapted to taxonomic ends. The thesis then used numerical factor analysis of 26

measured variables on a sample of 500 New Zealand stone adzes, to attempt to establish objective criteria for the taxonomic study of stone adzes. Some success was achieved, but the methods proved cumbersome to apply, and the results difficult to interpret.

Stone adze studies have developed considerably in recent years. Even though Skinner wrote that "an attempt has been made to formulate the adze-typology which guided the ancient Polynesian adze-maker in completing this side of his timber-working tool-kit" (Skinner 1943b: 161), his methods of analysis had little prospect of achieving that. Recent technological studies of Pacific adze manufacture, especially those of Foss and Helen Leach based on the excavated material from Riverton in Southern New Zealand, Helen Leach's work on Tataga-matau in American Samoa, and those of McCoy and Cleghorn from Mauna Kea on Hawaii, show much greater prospect of arriving at an understanding of what did guide the ancient Polynesian adze maker (Cleghorn 1982; Leach 1981; Leach and Leach 1980; Leach and Witter 1987; McCoy 1977). The works of Duff (1956, 1959) and Skinner (1938) for New Zealand and Eastern Polynesia and those of Buck (1930), and Green and Davidson (1974) for Samoa, offer the archaeologist typological tools for describing and for facilitating the analysis of the stone adzes of Polynesia.

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The correspondence, cited in this paper, between Dr H. D. Skinner and Dr Gregory of the B. P. Bishop Museum in Hawaii, between Dr Skinner and Dr Roger Duff of the Canterbury Museum in Christchurch and between the author and Mr A. Scott is held in the archives of the Otago Museum, Dunedin.

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