DIVISION 2.

PAPUAN LANGUAGES

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PART 2.1.

HISTORY OF RESEARCH IN PAPUAN LANGUAGES
2.1.1. A HUNDRED YEARS OF PAPUAN LINGUISTIC RESEARCH:
EASTERN NEW GUINEA AREA

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2.1.1.1. INTRODUCTION

In a book entitled Wanderings in the Interior of New Guinea, published just on one hundred years ago, the author, a certain Captain J.A. Lawson, summed up the language situation of the island as follows:

But one language appears to be spoken on the island, and of that, many of the words are, without doubt, derived from the Malay, Hindoostance, Chinese, and other tongues. It is easily learned, or, at least I found no difficulty in mastering it, and is a pleasant-sounding language, especially as it is spoken with a clear, distinct pronunciation, without any unpleasant guttural twang. (Lawson 1875).

Unfortunately, the book was a hoax, written by someone who in all probability had seen nothing of New Guinea but its coastline, if that;\(^1\) and the statements on language are as unreliable as the statements on natural history, which presented a picture of New Guinea teeming with bison, hares, goats, apes and 'Papuan tigers'.

The fact, however, that such a book could have been published at all, and for a while taken seriously, is an indication of the state of knowledge of the island of New Guinea, in all its aspects, just a century ago. As such it makes a convenient starting point for a survey of linguistic research in western New Guinea for the last hundred years, although a few earlier sources will need to be mentioned.

2.1.1.2. GENERAL SOURCES

The history of research in Papuan languages has already been described, up to about 1970, by Laycock and Voorhoeve (1971); but the spate of publication from the early 1970's means that the present article is much
more than just an updating of that work. A brief history of New Guinea linguistics in general is provided by Hooley (1965), who deals with Austronesian (AN) languages as well as Non-Austronesian (NAN), i.e. Papuan, languages. The motives for studying the languages of Papua New Guinea at all are considered by Laycock (1969f). A number of surveys of the languages of New Guinea have been published, and these, while now somewhat outdated as far as the linguistic classification is concerned, often provide valuable historical information, and a guide to older material; principal among these are Capell (1954, 1962a, 1969a), and for western New Guinea, Anceaux (1953a, 1953b) and Cowan (1959a, 1959b). Surveys for individual areas are discussed in the relevant sections, but Hooley (1969) has an interesting account of the making of surveys in general. The most modern, and probably most readable, account of the history of New Guinea in general is probably Souter (1963), though Biskup et al. (1968) is also very useful; for the period prior to the twentieth century, there is much to be found in Wichmann (1909–1912: early exploration), in Neuhaus (1911) and Zöller (1891) (both for the former German New Guinea), and in Murray (1912) (Papua). The bibliographies of Klieneberg (1957) and Taylor (1965), and the ethnographic bibliography of the Australian National University (1968) are still useful starting points for older material; but all works of significance to NAN linguistics have been included in the bibliography to this chapter.

The names of languages cited in this article follow what I consider to be the best and most established name in the scientific literature; opinions on this may vary, and occasionally languages are given alternative names. A statement on the types of names that have been typically given to Papuan languages can be found in Laycock and Voorhoeve (1971), and a statement of the principles on which I have coined new names can be found in Laycock (1973).

2.1.1.3. EARLY RECORDING OF PAPUAN LANGUAGES

New Guinea was not quite as unknown in the nineteenth century as Lawson's book suggests. New Guinea had been sighted by European explorers as early as the first few decades of the sixteenth century, and wordlists from some of the languages encountered began to be collected not long after. The first languages recorded were, however, Austronesian (AN); non-Austronesian (NAN, 'Papuan') languages were not recorded for two to three centuries more. The main reasons for this would seem to be that the ships of the early explorers reached only the coast and offshore islands, typically the habitat of speakers of AN languages; also, the AN-speakers possessed sea-going canoes with which they could establish contact with the vessels of the visitors. Few explorers were hardy enough to
venture much upon the mainland of New Guinea itself, let alone penetrate into the interior, where the majority of the NAN languages were spoken. As it happened, however, the very first recording known to have been made of a NAN language was of a language spoken on an island: the language of Miriam, in Torres Straits, which was taken down in 1822 — but the copy has not survived (Ray 1907). Miriam was not to be recorded again until 1836 (King, P. 1837); in the meantime, the credit for producing the first extant recording of a Papuan language had gone to a crew member and a passenger on the Dutch Government vessel Taiton, who in 1828 collected a short Kamoro vocabulary at Utanata (Mimika coast, West Irian; Modera 1830, Müller 1857).

The pace of recording during the remainder of the nineteenth century was slow, and had to wait, essentially, for annexation of the various parts of New Guinea and its surrounding areas by the European powers (Papua by Britain, and the north — Kaiser-Wilhelmsland — by Germany, in 1884). Prior to this period we have only further wordlists of Miriam (Jukes 1847, reprinted in Gabelentz and Meyer 1882 and Stone 1880); also MacGillivray 1852). D’Albertis (1880) includes a few short vocabularies from Papua, as does Lawes (1879). Extensive wordlists were collected in the pre-colonial period by the Russian biologist and explorer N.N. Miklukho-Maklaï, who spent the years 1871-1872 and 1876-1877 on the Rai Coast; but only a few brief wordlists were published approximately contemporaneously (Miklukho-Maklaï 1874, 1876; also some lists (mainly AN) in Gabelentz and Meyer (1882)), the remainder not appearing until the issuing of his complete words (Miklukho-Maklaï 1950-54).

After annexation, interest in New Guinea increased, and a number of vocabularies, and first grammatical sketches, were published in the last decades of the century. The first extensive comparative lists made their appearance shortly afterwards; Zöller published lists from twenty-four languages (most of the NAN languages coming from the Madang area) in 1890, and the following year added many more languages, including the lists collected on the voyage of the M.V. Ottlie up the Sepik River in 1886. In this period also Flierl produced (in Grube 1895) the first detailed material on Kâte, a language which was to become increasingly important in the Morobe area. In Papua, missionaries such as James Chalmers (1887, 1897) and S. MacFarlane (Chalmers and MacFarlane 1888) began to produce the first materials in NAN languages of mainland New Guinea.

The distinction between AN and NAN languages was becoming clearer, although it was by no means clear-cut. Müller (1876-1888) had labelled the languages of Numfoor (Irian Jaya) and Nengone (Loyalty Islands) as 'Papuan', more on the basis of racial characteristics than on linguistic grounds, while both the Gabelentzes, and Meyer (Gabelentz 1861-1879);
Gabelentz and Meyer 1882) included among 'Melanesian' languages NAN languages such as Savosavo - as also does Codrington (1885). The real differences between the two types of languages were first formalised by Ray (1893) - whose work leads us abruptly into the twentieth-century phase of Papuan linguistic research, although two other collections of wordlists (Ray 1894, 1895) still fall into the nineteenth century. From this time on, however, the amount of data available increases so rapidly that it becomes necessary to survey research with major subdivisions between the historical - but often overlapping - areas of Papua and New Guinea, and 'Island Melanesia'. Since self-government in December 1973, such divisions (with the exception of the border between Papua New Guinea and the British Solomon Islands Protectorate) may have become administratively less significant.

2.1.1.4. AREA STUDIES
2.1.1.4.1. PAPUA [BRITISH NEW GUINEA]

The early years of research into all the accessible languages of the south-eastern section of the island of New Guinea were dominated by Ray, who published a considerable amount of material (1911, 1912a, 1912b, 1914, 1929, 1933, 1938, 1939) on AN and NAN languages alike. His work is characterised by a quest for accurate data and a considerable insight into the significant features of the languages he wrote on; unfortunately much of his material is vitiated by the fact that he did not collect it personally, but used the not always satisfactory recordings of missionaries in various areas. Some of these missionaries also published their own material - people such as J. Chalmers, J.H. Holmes, W.G. Lawes, V.M. Egidii, E.B. Riley, and W.M. Strong (bibliography, various dates) - but most of their material has now been superseded, and is of interest (as also are the wordlists of languages in the British New Guinea (Papua) Annual Reports, from 1890 on) only to these wishing to document the history of a particular language. As is detailed elsewhere in this volume (Chapters 1.0., 2.5., 2.6.1., 2.6.2., 2.7., 2.9.) most of the NAN languages of Papua (apart from the isolates) belong to the Trans-New Guinea Phylum, though the number of stocks - let alone families - is quite large. Realisation of these relationships came slowly, however, and is almost entirely a product of research in the sixties. Prior to this, only the usual short vocabularies exist. In the Western District, for example, we have - apart from a grammar and extensive vocabularies by Ray (1907) of the relatively well-studied Miriam (and short grammars, notes and numerous vocabularies by him in the same volume) - only some lengthy wordlists of the Fly Delta, Trans-Fly and Gogodala areas (Riley (and Ray) 1930-31), a wordlist of Suki
in the *Annual Report* for 1919-20, and some additional words in Williams (1936), together with some items in the wide-ranging vocabularies of Ray (e.g. 1912c), a general survey of the languages of the area with notes and vocabularies in Ray 1923, and a Kiwai grammar (also by Ray: 1933), to represent the period before World War II; to these we should perhaps add a Gogodala ethnography by Wirz (1934) for the background information it contains. The first attempt at any kind of overall classification of the languages of the area was Wurm's (1951) study on the Kiwai languages; new classifications can be found in Wurm (1971a, 1973). Subsequently, the entry of the Un-evangelized Fields Mission, with an interest in linguistic work, made more data available, in languages such as Awin, Ninggerum, Pare, Suki, Boazi, and Zimakan; Bible translations have been made in two Kiwai languages, and Suki and Gogodala. Two languages of the area, Ninggerum and Yonggom, were placed by A. Healey into his Ok Family (1964), but the major subsequent progress in our knowledge of Western District languages has been due to Voorhoeve (1968, 1970a, 1970b), who still has unpublished data on languages of the Nomad subdistrict. The Summer Institute of Linguistics (S.I.L.) has one team working in Samo and Kubo, and a tentative classification of these and other languages of the Mt. Bosavi region has been published in Franklin, ed. 1973 (Shaw 1973).

The situation is similar in the Gulf District. Early material includes wordlists by Bevan (1890), Holmes (1903; 1913 - Koriki grammar), and Ray (1895); a map, notes and wordlists in Ray (1907) summarise knowledge to that date, and more detailed information is given by Ray (1914). Some lists appear in the Papua *Annual Reports*: 1914-15 Elema, 1916-17 Mamuro, 1917-18 Kibiri, Urana, 1920-21 Elema, Pepeha, 1921-22 Ro, Sau, 1926-27 Foi, Karima; but in spite of detailed ethnographic information by Williams (1924, 1940, 1940-41), the situation did not begin to become clear until Franklin's preliminary survey (1968a). Since then, a more detailed study of the Gulf District languages has appeared (Franklin 1973a; also 1973b, 1973c), with contributions, in Franklin, ed. 1973, on families and adjoining areas by Brown (1973: Eleman Family), Lloyd (1973: Angan Family), MacDonald (1973: Teberan Family), Wurm (1973: Kiwaian Family), Dutton (1973b: cultural items; also vocabularies in Dutton and Pawley 1975a), and Franklin and Voorhoeve (1973: languages on the border of the district). The MacDonal ds published on Dadibi (1974), and an extensive pedagogical grammar of Kapeu (an Angan language) has appeared (Oates and Oates 1968), as well as a Toaripi dictionary (Brown 1968). The phonology of Baruya, one of the Angan (Kukukuku) languages just over the border of the Eastern Highlands District, has been described by Lloyd and Healey (1968), and the gender system by Lloyd (1969). Angaataha and Wofokeso, Angan languages in the Morobe District, are the subjects of papers by Roberta Huisman
(1973) and Ronald Huismann (1973), and by D. West (1973) and D. and E. West (1974), respectively. Trefry worked in Pawaian (1965, 1972).

In the Central District, the coastal languages in the west are AN, and outside the scope of this paper. The Goilala languages in the north have been surveyed by Steinkraus and Pence (1964); they list mission translations into Fuyuge, Tuaude, and Kunimaipa, which includes not only the early listings by Ray (1929) and the Fuyuge and Afoa (=Tuaude) data by Ray and Strong in the appendixes to Williamson (1912), but also more recent articles on Kunimaipa (which overlaps into the Northern District). Such articles, including later publications, are mainly the results of Pence's work on the language (Pence 1964, 1965, 1966, 1968, 1971; Pence et al. 1970) and of the Duberts' in Biangai (Duberts 1974). The coastal areas east of Fort Moresby are now fairly well known; Dutton has surveyed the Rigo area (1970) and has provided a very full listing, with historical data, for all the known languages of central and south-east Papua (1973a). The Mulaha language, reported by Ray (1929) is confirmed as extinct by Dutton, as a result of absorption by Motu speakers, but its family relationships (Kwela) have been determined. Dutton has also surveyed separately (1971a) the languages of south-east Papua, spanning the Abau subdistrict of the Central District, the Baniara subdistrict of the Milne Bay District, and part of the Northern District; he has also written a transformational grammar of Koiali (1969a) and has edited further studies on the area (Dutton, ed. 1975 containing contributions by himself (Dutton 1975: Koita), the Garlands (1975: Mountain Koiali), Olson (1975: Barai), Austing and Upia (1975: Õmie), Thomson (1975a: Magi (=Mailu)), the Weimers (1975: Yareba), the Pairs (1975: Korafe) and Richert (1975: Guhu-Samane) on languages of the area under discussion), as well as providing data lists (Dutton and Pawley 1975b).

The language of Daga in the Milne Bay District has a grammar and phonological study as first documentation (Murane 1974; Murane and Murane 1972); otherwise, there is little specific information to be found on languages of this region, apart from that provided by Ray (1938) and Capell (1943) - the latter work dealing mainly, but not exclusively, with the AN languages, which predominate in this region. More recently, Capell has shown (1973) that the controversial (AN or NAN?) language of Maisin (for which see Strong 1911a, Ray 1911) is NAN with strong AN influence (see also (II) 4.5.1.); conversely, Dutton (1971b) has established the equally controversial Magori (see (II) 4.5.2.) as an AN language heavily influenced by the neighbouring NAN language of Mailu (grammar by Saville 1912, dictionary by Lanyon-Orgill 1944 and Saville 1935a,b; see also Malinowski 1915 and a recent contribution by Thomson (1975a,b)).
The situation is very different in the Northern District of Papua, an area which is also partly covered by the Dutton and Franklin surveys. S.I.L. teams are working in a number of languages of the district, and have published on Yareba (Weimer 1972; Weimer and Weimer 1970, 1972, 1975), Managalasi (Parlier 1964), Ōmie (Austing 1974; Austing and Upia 1975) and Orokaiva (Healey et al. 1969). Also being studied are the Kolarian language of Barai (Olson 1973, 1975) and the Binanderean languages Ewage and Korafe. The Binanderean languages, which overlap into the Morobe District, have been described as a whole by D. Wilson (1969a), who has also written two papers (1969b, 1969c) on Suena, a Binanderean language located in the Morobe District, as well as a grammar of it (Wilson 1974). Earlier, but still valuable, descriptions of Binandere were written by King (1901, 1926), and Capell (1969c) has added a paper on the Binandere verb. Korafe, also of the Binanderean Family, has been studied by the Farris (1974, 1975).

The remaining languages of Papua, on the islands to the east of the tail of Papua, are almost all AN; the one exception, Yele, will be dealt with under Island Melanesia. The languages of the Southern Highlands will be treated below in 2.1.1.4.2.

2.1.1.4.2. NEW GUINEA (KAISER-WILHELMSLAND)

Continuing anti-clockwise around eastern New Guinea, we reach, next after the Northern District, the Morobe District, where the total linguistic situation has only recently become clear (Glaassen and McElhanon 1970, and Hooley and McElhanon 1970) – papers which largely supersede both Hooley 1964 and McElhanon 1970a (see also 2.8.1. in this volume). As the authors point out, the area is divided linguistically by the Markham River valley, throughout most of which AN languages are spoken. To the south and south-east of the Markham are found Angan (formerly called Kukukuku), Binanderean, Kunimaipan languages already discussed in the previous section, and one or two members of the East New Guinea Highlands Stock, discussed below. Guhu-Samane, a language showing stock-level relationship to the Binanderean languages, has been studied by an S.I.L. team (Richert 1965a, 1965b, 1975; Richert and Richert 1972; Richert and Healey 1974). North of the Markham the linguistic position of the area is more complex, a fact which has led to considerable confusion in the literature of the area, as McElhanon (1970f) points out in a history of linguistic research of the Huon Gulf, in more detail than we can provide here. McElhanon also has a detailed study of Finisterre-Huon linguistic typology (1973). The first published classification of NAN languages of the area (apart from the already-mentioned vocabularies of Züiler (1890, 1891) were those of Schmidt (1900-01) and Ray (1902), but these – as well
as the later summaries of Schmidt (1926) - suffer from being based only on short wordlists, and in failing to sort out adequately the NAN languages from the AN. (Confusion between the AN and NAN languages of the Morobe District continued until very late; Hooley (1964) cites the Awara dialect of the NAN Wantoat as AN, and the Sio language (AN) as NAN.) One of the reasons for the unsatisfactory state of knowledge of Huon Peninsula languages until the 1950's was the early decision of the Neuendettelsau Mission (established 1886; see history by Pilhofer (1961-63)) to simplify the language situation by the extensive use of two lingue franche, the AN Jabêm in coastal areas, and the NAN Kâte in inland areas around the Sattelberg - a decision which led to relative neglect of the other 'Kai' languages. Kâte itself has been extensively studied (Grube 1895; Dempwolf 1905, 1920, 1925; Pilhofer 1927a, 1927b, 1933, 1953; dictionary by Keysser 1925, Pilerl and Strauss, eds. 1976), and Pilhofer also wrote fairly extensively on neighbouring languages (1928, 1929); but most of our knowledge of the latter has come from more recent studies by members of the Summer Institute of Linguistics, principally on Selepet (McElhanon 1967b, 1968, 1970a, 1970b, 1970c, 1970d, 1970e, 1972, 1974; also the McElhanons 1970), Wantoat (Davis 1961, 1964a, 1964b, 1969, 1972, 1973), Weri (Boxwell 1967, Boxwells 1966, 1974), Komba (Southwell 1974a, 1974b; McElhanon 1969), Nabak (Fabian et al. 1971) and Urii (Webb 1974). A grammar of Ono by the missionary Wacke is also available (1931). Schmitz (1960b) includes language information in his Wantoat ethnography.

The linguistic history of the Madang District resembles that of the Morobe District, in that virtually all early linguistic research was carried out by missionaries; it differs, however, in that no lingua franca was found for the area except for the AN Gedaged (or Bel) language used in a limited coastal region (with a corresponding emphasis on the value of Pidgin - see Höltker 1945), and also in that the missionaries were not Protestants, but Roman Catholics, of the Order of the Divine Word (SVD). This had important consequences for the quality of their research, for the SVD Order laid stress on training its members in the collecting of ethnographic and linguistic data, and provided an outlet for publications in the journal *Anthropos* (founded 1906), as well as a forum for discussion with missionaries all over the world through the associated Anthropos-Institut (founded 1932). (The work on the Anthropos-Institut is reviewed in these volumes in (III) 7.9.8., by Z'gragg; of the many hundreds of publications of its members relating to New Guinea, only those of major linguistic interest are singled out for mention here.) Much of the data was collected together from the work of individual missionary-priests by the already-mentioned W. Schmidt, who himself never went anywhere near the Pacific. The languages which received most attention in the early
period were those adjacent to the settlement at Alexishafen, namely, Bongu and Bogadjim (which were also the languages studied by Mikluhko-Maklaj wordlists in Mikluhko-Maklaj: 1950-54, Vol.3 and comments by Loukotka (1953)), but almost the only extant published work from this period is a Bongu grammar by Hanke (1909). Further west, at Bogia, the Monumbo language received early attention (P8ch 1908, Vormann and Scharfenberger 1914; also Hülker 1964) - a fact which gave a false picture of the 'unrelatedness' of Papuan languages, since all the languages related to Monumbo (and the adjacent Lilau) lie well to the west, in the Sepik region.7 A small amount of mission literature was printed in Lilau (formerly called Ngalmbon), Nobonob, and Amele, but only short wordlists (e.g. Hanke 1905; Schebesta 1908, 1938, 1940; Tranel 1952; Loukotka 1958) and small-scale surveys (Kaspruś 1945, 1949) are available as data on the other languages before the 1960's - with the notable exception of a Bogia area survey by Capell (1952a). The inland languages, especially those along the Ramu, were virtually unknown; a short wordlist of Giri, by Hülker (1961) is almost the only counter-example. However, the work of Pawley (1966, 1969, 1970) and Biggs (1963) has provided fairly good coverage of Kalam, and the S.I.L. has been working in four languages (Rawa, Sirol, Kalam and the neighbouring Kobon just over the District border), with publications beginning on these languages (Dawsons 1974). Z'graggen (also an Anthropos member) has published on Saker (1965), but has done even more valuable work in surveying the entire Madang District, and classifying the languages therein, in a series of articles of increasing detail (1968, 1970, 1971, 1975, and also in this volume - see 2.8.2.).

SVD missionary-linguists were also very active in the Sepik area (now the East and West Sepik Districts), after the establishment of the mission at Tumleo (near Aitape, formerly Berlinhafen) in 1886, and that at Marienberg, on the Sepik River, not long after. The same progress of the Anthropos-inspired research is seen as in the Madang District; early enthusiasm, and documentation of the languages in the neighbourhood of the mission, followed - after the cessation of German administrative control in 1914 - by growing disillusionment, and increasing reliance on Pidgin, once the complexity of the linguistic situation had been realised. Certain dedicated researchers continued working on languages and ethnography during the interbellum period - important names for the Sepik region being Frs. Hülker, Kirschbaum, J. Schmidt, Erdweg, Gehberger, Gerstner, Laumann, Klafll, Vormann, Spölgen, and Becker (bibliography, various dates) - but disillusionment, retirement, the activities of the Japanese during World War II, and death finally stemmed the flow of their publications, and most of the New Guinea material that has appeared since the last war has been archival data from the still extensive files of the Anthropos-
Institut. Some potentially useful grammars (e.g. Kirschbaum's grammar of Buna, and Fastenrath's grammar of Warapu) were destroyed or confiscated by the Japanese; other material seems to have succumbed to the ever-present tropical dangers of insects, rot, or loss in transit. Major contributions of SVD members include the extensive data on languages of the Aitape area (mostly, however, AN) by Klaffl and Vormann (1905; edited by W. Schmidt), grammars of Valman (Schmidt and Vormann 1900; Spölgen and Schmidt 1901; Murik (Schmidt, J. 1953; also 1924–26, 1933) and Mountain Arapesh (Gerstner 1963), and the preliminary establishment or perception of relationships by Kirschbaum (1922: Ndu Family) and Laumann (1951, 1952, 1954: Nor-Pondo Stock). Höltker (1938) provides the only published data on Gapun, although Laycock has unpublished field notes.

Up to World War II, the Sepik region was a favourite area for ethnographic research, and ethnographers such as Roesicke, Reche, Schlaginhaufen, Thurwald, and Schultz (during German administration: bibliography, various dates) and their interbellum successors such as Mead, Fortune, Kaberry, Bateson, and Whiting (bibliography, various dates) added considerably to our knowledge of Sepik populations, though the linguistic data provided by them was in most cases slight. The two notable exceptions are the highly accurate linguistic mapping of the middle and lower Sepik by the geographer Behrmann (1924, also 1922), and Fortune's grammar of Mountain Arapesh (1924). (Laycock (1973b) correlates anthropological and linguistic research in the Sepik area, and shows that both have been confined to a relatively small area.) Manuscript notes on Sepik languages (mainly Banaro, Kambot, and Angoram) by Thurwald are held by Laycock, and will ultimately be edited for publication in Pacific Linguistics.

Since the 1960's there has been a gradual increase of interest in the Sepik region. Laycock (1965a) documented the languages of the Ndu family extensively, and established the Torricelli Phylum (1968) and preliminary phonologies of three languages of the Upper Sepik Stock (1965b); a more recent work (1973) documents all the known languages of the East and West Sepik Districts. Details of individual languages have mostly been provided by S.I.L. linguists, notably for Iatmul (Staalsen 1966, 1969, 1972), Manambu (Allen and Hurd 1972, Farnsworth 1974), Mayo (Foreman 1974; Foreman and Marten 1973), Iwam (Conrad 1971, 1972), Kwoma (Washkuk) (Kooyers 1974; Kooyers and Bee 1971), Sanio-Hiowe (R. Lewis 1972; S. Lewis 1972), Anggor (R. Litteral 1972, 1973; S. Litteral 1972), Hewa (Cochran 1968), Telefol (A. Healey 1962, 1964a, 1964c; P. Healey 1964, 1965a, 1965b, 1965c, 1965d, 1966), Tifal (Steinkraus 1969; Healey, P. and Steinkraus 1974) and Oksapmin (Lawrence 1971, 1972a, 1972b); work is also progressing in Au (Scorza 1973), Amanab, Mianmin (Smith and Weston 1973a, 1974b), Bahinemo, Ama, Alambalak (Bruce 1975), Abelam (Wilson, P. 1973), Boiken (the Freudenburgs
1974), Sawos (Gaikunti), and Mountain Arapesh. Pike (1964) wrote on the three-vowel system of the Ndau family, described also (independently) by Laycock in his 1962 dissertation (published as Laycock 1965a). Further materials on Bahinemo and Oksapmin appear in Longacre (1972). S.I.L. members have also carried out a number of valuable surveys in the Sepik region, namely Glasgow and Loving (1964: Maprik subdistrict), Loving and Bass (1964: Amanab subdistrict), Dye and Townsends (1969: Sepik Hill languages), and Conrad and Dye (1975: Upper Sepik and May River area).

Further ethnographic research undertaken in the 60's and 70's (for which see Laycock 1975a) can be expected to fill out the linguistic picture, but there is little of direct linguistic data except Haberland (1966). Juillerat (1972) includes a list of Amanab plant names, and a note on phonology.

Some of the languages mentioned above, especially Oksapmin and the Ok languages of the Telefomin area, are more 'Highlands' in type than strictly Sepik. In the Highlands proper — taking the three Highlands Districts (Eastern, Western and Southern Highlands) as a unit, linguistic research has been proceeding at a pace that is difficult even to document] There is, however, little to report on the history of linguistic research, as the first extensive reporting of Highlands languages dates only from the survey of Capell (1949a), although some missionaries had been working on languages before that date — noteworthy among them being the extensive work on all aspects of the Mbowamb (Medipa-speaking) culture by Vicedom and Tischner 1948 (and, also, Strauss and Tischner 1962), and the Gende and Wahgi publications of Aufenanger (1938, 1940, 1952, 1953a, 1953b). Other important contributions have been made by researchers of varying affiliation, namely, Berndt (1954), B. Blowers (1970), B. and R. Blowers (1970), Crotty (1951), Haiman (1972), Hamp (1959), R. Lang (1970), A. Lang (1971, 1973, 1975), Luzbetak (1954, 1956), McVinney and Luzbetak (1964), Milles 1944, 1951, 1969), Renck (1967, 1975, 1976), Rule (1965), Salisbury (1956a, 1956b), and Schäfer (1953); but most of the detailed work on individual languages has been carried out by members of the Summer Institute of Linguistics, whose base at Ukarumpa in the Eastern Highlands is ideally situated for the study of these languages. Approximately thirty Highlands languages are being studied; some of these, on the borders of other districts, or not forming part of the East New Guinea Highlands Stock, have already been dealt with. Specific work in other languages includes: Agarabi (Goddard 1967, 1974; Bee et al. 1973), Asaro (G. Strange 1965; D. Strange 1973), Auyana (McKaughan 1973b; McKaughan and Marks 1973), Awa (R. Loving 1966, 1973a, 1973b; R. and A. Loving 1961, 1962, 1975; A. Loving and McKaughan 1964; R. Loving and McKaughan 1964; McKaughan 1973b; McKaughan and Loving 1973), Benabena (Robert Young 1964, 1971; the Youngs

Works involving a number of Highlands languages include Young Rosemary (1962: Kanite, Kamano, Benabena, Gahuku), Bee (1965a), Kerr (1973b), Longacre (1970, 1972), McKaughan (1964), McKaughan, ed. (1973), Peck (1972), and Trefry (1965), as well as the various linguistic surveys (Deibler and Trefry 1963: Chimbu subdistrict; Bunn and Scott 1962: Mount Hagen subdistrict), and three collections of papers: S.I.L. (1961), Elson, ed. (1964), and McKaughan, ed. (1973) - in which last can be found reprinted many of the papers cited above.

The initial detailed description and classification of Highlands languages was the work of Wurm, in a series of articles of increasing detail (1961a, 1961b, 1961c, 1961d, 1962, 1964a, 1964b, 1964c, 1965, 1971c); but there have been many modifications since these initial descriptions and the current situation is reported by Wurm in this volume (see 2.7.).

2.1.1.4.3. ISLAND MELANESIA

Island Melanesia - by which we mean the islands off Eastern New Guinea, and the island chains extending to Fiji, the New Hebrides, and New Caledonia - is taken separately from mainland New Guinea for two reasons: firstly, because most of the languages are AN, and the few known NAN languages all belong to a single phylum; and secondly, because it is necessary to deal with areas under varying administrations, and with varying linguistic histories.

In the south-east Papuan island area, there occurs only one NAN language: that of Yele (Yeletnye), on Rossel Island. An S.I.L. team is working
2.1.1. PAPUAN LINGUISTIC RESEARCH: EAST NEW GUINEA AREA

on it (Henderson 1975; the Hendersons 1975) and the language is interesting
because of the unusual nature of its phonology (labio-velar articulation
of nasals) already reported briefly by Ray (1907, 1929). The only other
data on Yele is a Rossel Island ethnography by Armstrong (1928), which
contains very little linguistic information.

On New Britain, the identifying of languages in AN or NAN has been
subject to dispute until very recently; Chowning (1968) summarises the
areas of disagreement, and rejects the possibility of languages that are
not either AN or NAN ('Semi' AN - Loukotka (1962), Capell (1962b)). The
NAN languages are Taulli (Lauffer 1950; Futscher 1959), Butam (Lauffer 1950),
Baining and its probable dialects Makolkol and Gaktal (Rascher 1904; Bley
1906; Lauffer 1946-49, the Parkers 1974), Sulka (Müller, H. 1916; Schneider
1962; Lauffer 1955), Kol (Kole) (O'Neill 1961), Wasì (Ata, PelaSata), and
Anem (Karaiai). (See also Burger 1913.) Bileki, shown as NAN on a map
by Capell (1962a), is established by Chowning as AN. The languages
of the Cape Hoskins area (all AN with the exception of Kol) were surveyed
by Allen and Hurd (1963). Some additional information on Baining and
Sulka can also be found in Parkinson (1907) and Schmidt (1904, 1905), and
further unpublished wordlists in various languages exist in the possession
of various linguists (e.g. Capell, Wurm); but much more work obviously
needs to be done on them. The same applies to New Ireland - where, how-
ever, only one8 NAN language occurs. This is Kuot, according to the
survey of Lithgow and Claassen (1968) and Beaumont (1972); older litera-
ture refers to it by the name of one of the villages, Panaras. First
listed by Friederici (1921), the affiliations of the language remained
obscure until 1972, when it was classified by Wurm (1972a; Wurm and
Laycock 1974) as a stock-level isolate in the East Papuan Phylum. There
are still no published data, except a few kinship terms in Chinnery (1930).

The greatest concentration of NAN languages outside New Guinea proper
is found on the island of Bougainville - administratively part of Papua
New Guinea, but geographically part of the Solomon Islands chain. The
existence of a Bougainville Phylum (now the West and East Bougainville
Stocks) was first postulated by Allen and Hurd (1965), although the exis-
tence of a number of NAN languages in south Bougainville, and their
general relationship to each other, had been known since the times of
German administration (Schmidt 1909). Published material on the languages
includes Grisward 1910, Wheeler 1911, Thurnwald 1912, 1936a, 1942, Laycock
1969a, 1969c, 1969e, 1972b, 1972c, Griffin 1970, on Buin (Rugara, Telei);
Rausch 1912, C. and P. Hurd 1966, 1970 on Nasioi; Müller 1954 on Konua
(Konua); and I. Firchow 1970, 1971, I. and J. Firchow 1969, the Firchows
and AkoiTai 1973 on Rotokas. S.I.L. teams are working in Buin, Nasioi,
Nagovisi, and Rotokas, and have published - in addition to the above-
mentioned linguistic papers — preliminary literacy materials in these languages. Laycock has in preparation an extensive Buin dictionary, based partly on materials of the anthropologist R. Thurnwald, which will probably appear in 1976; a number of other works on Buin have already appeared (Laycock 1969a, 1969c, 1969e, 1972b, 1972c, 1975d). Perhaps here is also the place to point out a) that there is no evidence to suggest that Nasioi is tonal, as claimed by Rausch (1912) and followed by Wurm (1954b) and b) that Rotokas has appeared in the Guinness Book of Records as having the world's smallest phoneme inventory — only /p t k b f g a e i o u/ (I. and J. Firthow 1969).

Further south, in the Solomon Islands proper, the NAN languages have been largely overshadowed by the surrounding AN languages — with which they were early confused, by e.g. Codrington (1885), writing on Savosavo, and some appear to be extinct. The first survey of them was that by Ray (1928), and there is early material on Baniata (Waterhouse 1927) and Kazukuru (Waterhouse and Ray 1931); Capell (1969b) adds additional data, and compares Bilua, Baniata (Bañatá), Lavukaléve (Laumbe), and Savosavo. Lanyon-Orgill (1953) adds the names Gulilli (Galiguli, Guliguli) and Dororo, but no details. G.B. Milner has worked on Bilua, but has not published his data; Laycock also has a short vocabulary of Bilua from the fieldnotes of R. Thurnwald, which has not yet been analysed, as well as a vocabulary and grammatical indications on Baniata, from the fieldnotes of H. Scheffler. More recently, Evelyn Todd has carried out anthropological fieldwork on Savo, and has materials on Savosavo, Baniata, Bilua, and Lavukaléve (see 2.13.2. in this volume), some of which is intended for publication in the future.

The last-known NAN languages in this chain are those of the Santa Cruz Islands. They are so heavily overlaid with AN that they have often been classified as AN — for discussion, see Capell (1962b), Davenport (1962) — by, among others, Wurm (1963); but in a recent series of articles (1967, 1969, 1970b, 1972d) Wurm has presented evidence that the languages are basically NAN, and related to all other languages mentioned in this section, as part of the East Papuan Phylum (Wurm 1972a, 1977; Wurm and Laycock 1974).

No further NAN languages are known in Melanesia, but the possibility of a Papuan substratum has been mooted to account for supposedly 'aberrant' AN languages in the New Hebrides, the Loyalty Islands, and New Caledonia — mainly with reference to Nengone (Loyalty Is.) and Ambryn (New Hebrides). Evidence of such a substratum is at present lacking, but it is not beyond the bounds of credibility.
2.1.1. THEMES IN PAPUAN LINGUISTIC RESEARCH

2.1.1.5. CLASSIFICATION

Inevitably, the question of the genetic classification of the NAN languages of the New Guinea area, both internal (subgrouping) and external (relationship with languages outside the area) has been a major preoccupation of all writers of Papuan languages. Early attempts at classification were naive, and the NAN languages of New Guinea have been at times said to be related not only to AN languages, but also to Australian, and Tasmanian (by e.g. Latham 1847, 1860), and to Dravidian, Semitic, Bushman, and even Indo-European - possibilities which seem plausible only if we accept the ultimate relatality of all human languages (as does e.g. Trombetti 1905, 1927). To date, it can safely be said that there is no real evidence to link the NAN languages of New Guinea with any other linguistic group, though some slight indications of possibilities are discussed elsewhere in this volume (see 2.16.). In particular, Greenberg's 'Indo-Pacific hypothesis' (1971), which would interrelate 'the bulk of non-Austronesian languages of Oceania from the Andaman Islands on the west in the Bay of Bengal to Tasmania in the southeast' is not only far from proven, but also based on inadequate and insufficiently-analysed data (for example, comparisons are too frequently made only of items within large groups of languages - such as the Trans-New Guinea Phylum - that are already known to be related, so that there is little support for the wider relationships postulated).

Other attempts at classification can be divided into those by researchers (such as Ray, Capell, Friederici) with extensive personal experience of the New Guinea area, and those (such as Schmidt, Kluge, Loukotka, Salzner, Kleckers, Grace and the Voegelins) who based their conclusions (often with astonishing success, more often unsuccessfully) mainly on printed sources, or on material supplied by collectors in the field. Without exception, the classifications of writers in the latter category are rendered invalid by the random, and often inadequate, nature of the data available to them; they are also now extremely dated - even the latest of them, Voegelins (1965) and Grace (1968) - and as such are of value only as guides to the older literature. (The recent review by Leont'ev constitutes an exception.) The extensive work of W. Schmidt - bibliography by Bornemann (1954) - is assessed by Burgmann (1954), and also by Z'graggen in (III) 7.9.8.

On the other hand, the views of the researchers in the first category retain much of their validity - although even there, with notable exceptions, the material on AN languages remains more useful than that on NAN languages. A major exception is the work of A. Capell, whose personal experience of languages of the entire Oceanic and Australian area excels
that of any other linguist; nevertheless, even his most recent surveys of the New Guinea language scene (1962a, 1969a) were published before the detailed area surveys mentioned in previous sections, and must be read with this fact in mind. Capell's greatest achievement will, I believe, be seen to be in the areas of Australian and AN linguistics rather than in NAN linguistics — though there is no doubt of the value of his contribution there also. (For an assessment of Capell's work as a linguist, with full bibliography, see Wurm 1970a.)

In recent years the most far-reaching classifications of NAN languages have been undertaken by Wurm in a large number of publications (see particularly Wurm 1972a, 1977, and his contributions to the present volume) which draw upon his own researches, and those of the other investigators mentioned in this paper. It is still too early to assess the validity of his classifications, although they are in the main accepted by most Papuan linguistic specialists in the 1970's. With Wurm's publications, it became clear that lexical comparisons alone were insufficient to establish large-scale groupings, so that later classifications have in addition to lexical comparisons, been based also on highly-stable features such as verb morphology and overall typological features. It is still a moot question whether the classifications so obtained are truly 'genetic', or whether they represent the expansion of certain language types to the extent of obscuring the original languages spoken by some populations (languages which may still show their presence by substratum features).

The determination of such substratum elements will eventually emerge when detailed reconstructions of individual groups are undertaken; then it will be possible to say that we have a genuine 'Papuan comparative linguistics', as foreshadowed by Cowan (1955a, 1955b, 1957). The first steps in this direction have, for instance, been taken by A. Healey (1964a, 1970), Bee (1965a), McElhanon and Voorhoeve (1970), Franklin (see 2.4.2.), Kerr (see 2.4.3.) and Wurm (1976b, see also 2.4.1. in this volume), and this trend can be expected to continue. The relatively unsatisfactory nature of classification based solely on lexicostatistics has been pointed out by McElhanon (1970g, 1971) and the lists used have been criticised by Laycock (1970b). Other strategies are bound to develop; one promising area is the investigation of cultural loans in a large number of languages by Dutton (1973b).

Two additional themes in Papuan linguistic classification may be mentioned briefly here. One is the search for 'pygmy languages', as being in some way fundamentally different from other Papuan languages, as evidenced in papers by Aufenanger (1959), Gusinde (1958, 1959), Kirschbaum (1927), Meyer (1875), and Schmidt, W. (1914, 1945). This is now a dead issue; the languages spoken by short-statured peoples in New Guinea have
all been shown to be related to languages of their taller neighbours (though there may still be a distinct substratum in some, such as the Angan (Kukukuku) languages) - so that, whether pygmyism is a local variation, or evidence of a distinct racial stock, nothing can be deduced from the languages of pygmy groups as such.

The second theme is that of numeral systems, discussed by a number of writers (Galis 1960; Aufenanger 1938, 1959; Kirschbaum 1938; Schmidt, W. 1929; and - especially - Kluge 1938, 1941). Papuan languages show a wide variety of numeral systems (tabulated and discussed by Laycock in section 2.3.4.) but it is now realised that comparison of such systems does not lead far in the classification of Papuan languages, as closely related languages often have quite different systems, as a result of either divergent development or interlinguistic borrowings.

Two fringe publications must also be mentioned. Butinov (1962) attempts to reduce the number of languages in New Guinea on the basis of a priori probability; but the existence of approximately a thousand languages in the New Guinea area is now so well established that his work can be safely ignored. Similarly, an unfinished study by Dupeyrat (1962-65), based mainly on racial and cultural (rather than linguistic) features, does not tally with current linguistic knowledge, and remains of doubtful value until the discrepancies can be solved.

2.1.1.5.2. HISTORY AND PREHISTORY

Genetic classification necessarily implies a belief in a historical sequence, but this belief is not always explicit. However, the classificatory works of Wurm have usually contained statements on migrations implied by the classification (e.g. 1972a), and other works by him (1967, 1972b, 1976a) deal more explicitly with migrations and ancient linguistic contacts. Laycock (1965a) provides evidence of a northward migration of the Abelam and Boiken from the Sepik River, and (1973) conveys - much more tentatively - views on large-scale migrations within the Sepik region. A recent Sepik migration is reported by Staalsen (1965). Migration problems are touched upon by Vorhoeve (1969). A work that combines history and prehistory, with very detailed analyses, is Dutton's monograph on the peopling of Central Papua (1969b). But modern authors are far more cautious in their suggestions of migrations than those in the first half of the period we are studying; their main concern was the migration of speakers of AN languages, but speakers of NAN languages are also taken into account (in e.g. Priederici 1913). The relatively recent, and explicitly historical, work of Schmitz (1960a) creates more problems than it attempts to solve, in that it is out of touch with linguistic research
in the Morobe area, and does not tally well with current linguistic classification; nevertheless, it provides a great deal of information which could well be re-evaluated at this stage.

2.1.1.5.3. APPLIED LINGUISTICS

The establishment of the Summer Institute of Linguistics (S.I.L.) in Papua New Guinea (see accounts by Dean (1960), Hooley (1968), Pence (1962b), and Franklin in (III) 7.9.2.) has meant not only an increase in the data available on individual languages, but also an increase of interest in all areas of applied linguistics. Because of their commitment to Bible translation, S.I.L. workers have been actively engaged in the preparation of literacy materials (for which see the various S.I.L. bibliographies: Gammon (1969a, 1969b), Healey (1973a, 1973b), Messer (1966), and Wares (1968, 1971a, 1971b, 1972, 1974)), in issues of vernacular education (e.g. Gwyther-Jones 1971, Scott 1968b), and in questions of translation (e.g. Deibler 1966, 1968; Frantz 1964; Healey 1970a; Richert 1965a, 1965b; Shaw 1972b). Lexicography has begun to attract attention, in papers by Irwin (1970), Newell (1970), and Kilham (1971) — the last paper drawing more on Australian language experience than on New Guinea, but with comments which are equally applicable. Non-S.I.L. writings on lexicography (and related semantic studies) include Lang, A. (1971, 1973, 1975), Laycock (1975b), and Pawley (1970). S.I.L. writers have also added to the efficiency of linguistic research in a number of publications aimed at improving the linguist's eliciting and data handling ability (e.g. Bee (1961a), Bee and Pence (1962), Pence (1962), Healey (1964b), Franklin (1971b), and Loving (1961)). To these we may add a non-S.I.L. contribution by Laycock (1970b).

The interest of the newly self-governing Papua New Guinea administration in vernacular education is likely to mean an increase in activity in the sphere of applied linguistics, by linguists both within and without the Summer Institute of Linguistics.

2.1.1.5.4. SOCIOLINGUISTICS AND ALLIED FIELDS

Linguistics in the New Guinea area has always been closely associated with anthropology, and, as has been seen above, many linguistic contributions have been made by anthropologists; however, until recently relatively few linguists have shown an interest in relating their linguistic studies to anthropological and social issues. Important exceptions are papers relating to social organisation by Franklin (1965b, 1967b) and McElhanon (1968, 1969), and on myth by Scorzzi (1972) and Shaw (1972b). The analysis of semantic domains is relevant to lexicographers and others,
and some papers have appeared on this: Franklin 1971c, Lang, A. 1971, Bulmer 1968, Newell 1970, Pawley 1970, and, indirectly, Laycock 1970a, 1970b. The questions of bi- and multi-lingualism have been discussed briefly by Schlesier (1961), Salisbury (1962), Lewis (1971), and Laycock (1966), and extensively by Sankoff (1968, 1972); other forms of language contact, specifically that between AN and NAN languages, have been treated by Capell (1973), Dutton (1971b), and Laycock (1974). Some mention of the influence of European languages on indigenous languages can be found in Phillips 1973 and Laycock 1971b. Various levels of linguistic usage - ritual, poetry, baby-talk, secret languages - have hardly been dealt with at all for the New Guinea area, but there are a few brief treatments: Franklin 1973d, 1973e, Thurnwald 1936a, 1942, Laycock 1969a, Aufenanger 1962, Auinger 1942-45, and Dempwolff 1909 - the last two works dealing with AN languages. Other areas related to linguistics - e.g. psycholinguistics - are unrepresented in the literature, though perhaps we should mention here a number of publications exemplifying a linguistic approach to ethnomusicology: Chenoweth 1966, 1968, 1969, 1972; Chenoweth and Bee 1968, 1971; James 1968 - and, for 'drum languages', Zemp and Kaufmann (1969).

It can be seen from the paucity of references, and from the paper on sociolinguistics in the New Guinea area by Taylor (1968), that sociolinguistics is virtually in its infancy in New Guinea, although it can be confidently predicted that interest in it will increase.

2.1.1.6. CONCLUSION

Most of the previous hundred years of Papuan linguistic research can be regarded as the slow fuse to a rocket which is only now, in the 1970's, beginning to take off. It is likely that the publications of the next decade will make all writings before about 1960 obsolete, except for historical documentation; the interest will be in the ascent of the rocket, and the direction in which it is going. And the flight of the rocket may well be watched by linguists whose areas of specialty are far from New Guinea - for, after all, one-seventh of the languages of the world can hardly be ignored.
NOTES

1. The true author of the book is not fully established, although Souter (1973), who devotes a few pages to this remarkable work, makes out a plausible case for it being written by a retired Royal Navy Lieutenant, Robert H. Armit, who tried - unsuccessfully - to go to New Guinea as the commander of a largely non-existent expeditionary force called 'The Royal New Guinea Volunteers'.

2. The first European to set foot on New Guinea soil seems to have been a Portuguese governor of the Moluccas, Jorge de Meneses, in 1526. He called it 'Ilhas dos Papuas' (Malay papan frizzy-haired); the name New Guinea ("Nueva Guinea") was given to the island in 1545 by Ynigo Ortiz de Retes (Souter 1963).

3. One typical early wordlist is that of the language spoken on one of the islands of the Kumamba group (probably Liki), recorded during the 1616 voyage of Le Maire and Schouten (wordlist in Dalrymple 1771, Meyer 1874, and Laycock 1972a).

4. Unfortunately, in the collected works, all papers have been translated into Russian, even though the majority of them were originally published in German or English. Although the collected works provide a complete list of Miklukho-Maklaï's words, a possibly more accessible list will be found in Fischer (1955), and a German translation of the diaries is also available (Miklukho-Maklaï, n.d.).

5. The history of the concept 'Papuan', as opposed to 'Melanesian', is surveyed by Schlesier (1970); race, geography, and language have all been confused under the term, but for the last few decades linguists at least have tended to agree that it is a convenient, if still occasionally
ambiguous, shorthand term for 'Non-Austronesian [languages] of the New Guinea area' - and as such it is used in this paper.

6. For example, Kirschbaum's (1935) eliciting pad for New Guinea languages contains perhaps the greatest number of items of any published New Guinea wordlist (1,085 numbered entries, including multi-clause sentences), and provides good instructions on the eliciting of kinship terms (272 items, or double that number when elicited, as instructed, as terms of address and reference).

7. W. Schmidt, in Klaffl and Vormann (1905), postulated the relationship of Monumbo to Valman, near Aitape - a conclusion which shows considerable linguistic insight, as the languages are not closely related, and belong to quite distinct stocks within the Torricelli Phylum. The suggestion was ignored by later researchers (after all, so many suggestions of relationship made by early workers had turned out to be totally wrong), and the relationship was forgotten until confirmed, independently, by Laycock (1968).

8. Capell (1967) discusses the possibility of a NAN language of New Ireland also named Butam; but here Friederici (1912) appears to be in error.

9. Taking the NAN languages of the New Guinea area to be about 750, and the number of world languages to be about 5,000. If the AN languages for all of Melanesia are added, we reach a total of about one-quarter of the world's languages (Laycock 1969d).
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Data available from this area is a translation of the four Gospels in the language spoken near Apmisibil (R.C. Mission 1970).

2.1.2.2.3. South Irian Jaya

Linguistic exploration in the southern lowlands of Irian Jaya began at the extremities, first in the west and later in the east. The western Mimika coast which was easily accessible to visitors from Indonesia, yielded the earliest recorded data in a Papuan language in West New Guinea. In 1828 Modera and Müller, during a visit to Utanata, collected wordlists of what now is called the Kamoro language (Modera 1830, Müller 1857); in 1876 Mikluhko-Maklaï published, amongst others, wordlists of Lakahia and Kiruru [now Kamoro]; in 1903, 1904, and 1905, members of expeditions of the Royal Dutch Geographical Society collected wordlists near Jamur lake (Anggadi, Nagramadu, Goreda) (Sande 1907) and on the Mimika and Kupera-pukwa rivers (Seijne Kok 1908); another wordlist of the Mimika language was collected by Dumas (1911). It had not escaped the investigators that the collected lists belonged to related languages. Sidney Ray in his notes on languages in the East of Netherlands New Guinea (Ray 1912a), using these wordlists, wrote some comparative and grammatical notes on what he called the Angadi-Mimika group of languages. In these, he traced some sound correspondences, and presented a number of lexical correspondences. From their grammatical features he concluded that the languages were Papuan (i.e. "non-Malayo-Polynesian"). He further compared their vocabulary with words in the languages of the Merauke and Trans-Fly areas, noting some lexical similarities, and thereby gave the first hint of genetic relationships to be established much later by Voorhoeve (1968).

In the east, linguistic research began after the Dutch government in 1902 established the first patrol post south of the mountains on the Merauke River. From those first years date two lists of words and sentences in the Marind language (Bauer 1904, Seijne Kok 1906) and some grammatical notes on Marind by Adriani (1908) who on the basis of Seijne Kok's materials established the non-Austronesian character of Marind. A short wordlist of the Asmat language, halfway between the Marind and
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