to pose an effective counter-attraction to obscure scientific study.

By the outbreak of the war Mead was a very famous anthropologist. New challenges were put to her. As executive secretary for the National Research Council she edited the *Report of the Committee on Food Habits* (1941–1943), full of interesting ideas about methods of comparing food habits and ideas about the relation between nutrition, social class and ethnic traditions. She advised the United Nations army on its relations with foreign cultures; she became an authority on technology and economic development and made it her prime mission to bring emerging Third World countries into the twentieth century. A peculiarly personal mantle of international counsellor and interpreter of the world fell upon her shoulders. No one wearing it with such authority and confidence should complain of lack of academic recognition. Yet I would pay her the compliment of greatly wishing that she had stayed more patiently with the growth of the ideas she brought to birth. Nothing in economic anthropology had anticipated her study of economic structures in the Admiralty Islands. She was right in believing at the end of her life that nothing significant had been built upon her important work on food habits. The outstanding problems about the relation of personality and culture are still unsolved and no method has been determined for solving them. But in academic life you either need to have institutional support or to concern yourself with the nurture of your own brain children.

It is fair to wonder with whom Mead should be compared. Was she a latter-day Marie Stopes? No, even their shared vilification as corruptors of morals does not put them on a par; Mead was less one-track. What about contemporaries? Was she a great philanthropic writer? Dorothy Day is a giant name for an editor and committed social reformer, worthy for the comparison, but Mead's concerns were more dispersed. What about helping the Third World? Margery Perham, born in 1895, achieved much on behalf of the constitution framers of emerging independent Africa? Certainly, I doubt that any of them would have envied Mead the international popular acclaim that she earned.

This biography pays scant attention to her anthropological work. It is clearly meant to be a friendly report. But it is not helpful to her academic reputation, now under attack by Derek Freeman (see p. 758), to present her as a fabulous media star. Would Danny Kaye rather be remembered by his friends as a great comedian or as a great philanthropist? Margaret Mead herself cherished her academic standing, but this volume does nothing for such concerns. □

Mary Douglas is Avalon Professor of the Humanities at Northwestern University, Illinois.

Advancing by stealth

June Goodfield

Women Scientists in America: Struggles and Strategies to 1940.

By Margaret W. Rossiter.

Johns Hopkins University Press: 1983.

Pp. 438. \$27.50, £22.

THERE are certain intriguing resemblances between the practice of science and the study of history: the more we observe, the more we recognize how much still remains to be discovered. Moreover what we actually see is strongly influenced by the questions we bring to our observations. Thus we can by-pass a great deal that may actually be very significant.

As directions in research become first fashionable, then hallowed, other aspects of a discipline may dwindle to near invisibility. It takes a Braudel, with his sweeping studies on the Mediterranean World, or a Ladurie in *Montaillou* and *Love, Death and Money in The Pays d'Oc*, to recreate lost lives and reveal the sheer dimension and complexity of the tapestry of history. Such was the majesty of their scholarship, and such the vision of their disciplined imagination, that the works of these pioneers forced those with minds not irrevocably closed to look with fresh eyes on old fields of study.

While it cannot be said that Margaret Rossiter is a Braudel or a Ladurie, her new book nevertheless achieves similar ends and is a seminal work of rich scholarly detail. It may not transform the history of science, but those who ignore its implications will be intellectually impoverished. Not too long ago many people believed that Marie Curie was the first — if not the only — woman scientist. The sixteen-volume *Dictionary of Scientific Biography*, edited by Charles Gillispie, did something to improve the situation but nothing like enough. Dr Marilyn Ogilvie's labour of love — lasting over a decade — which has culminated in a *Dictionary and Biography of Women Scientists from Antiquity to 1910* will, when it finally sees the light of publication day, open our eyes still further. Now with *Women Scientists in America* Margaret Rossiter reveals that for well over a century "women have been an integral part of the scientific community" yet "for a variety of reasons" most of these women scientists bordered on the "invisible".

Once she had overcome the initial "stumbling block of locating material, through several years of detective work" the full wealth of the vein she was mining became apparent. The quantity of material discovered was enormous; once mastered, rich and deep analyses could be and were, undertaken. Thus Rossiter's account is not one whose only conceptual threads are those of feminist rhetoric. There is nothing simplistic here: she has given us a sophisticated analysis of a complicated situation,

encapsulated in the following phrase: "It is the history of an occupational group whose status had risen and fallen over time as the women's role responded to external events and pressures". What Margaret Rossiter does so well is to explicate her story in those terms, backed by an abundance of empirical material, in quantity that would satisfy the most Baconian of scientists.

Beginning in the nineteenth century with the "entering wedge" provided by the women's colleges, we see the quiet infiltration of women into science, a movement that turned out to be unexpected, unintended and at certain times unwelcome. It is fascinating to notice that, at a time when science had a lowly status in Britain's institutes of learning, the Women's Colleges of America took pains to emphasize the extent of science in their curricula offerings, showing a slant undreamt of by C.P. Snow. For the emphasis placed on science "reassured the parents of the high moral character and religious values taught. (Literature, especially novels, were, by contrast, quite suspect.)". Given this difference in educational history, surely no one would ever have predicted that Britain would produce the first scientist ever to be a Prime Minister and a woman at that!

The ends which were ultimately achieved were far from being those for which the new ventures were launched. What began as a movement to educate women so that they would, in turn, produce more enlightened sons, ended with a group of highly motivated, qualified and often quite remarkable people having no place to go except back to where they came from — the women's colleges. This, rather than any inherent intellectual limitation, explains why few of these women scientists did research — though there were notable exceptions. That this situation, and its corollary, persisted for well over one hundred years is confirmed in Evelyn Keller's forthcoming biography of Barbara McClintock. McClintock's work in bacterial genetics was so brilliant that Joshua Lederberg, in the 1950s, once described her as either "mad or a genius", but she was forced to do her research on the fringes of academia. For she refused to relinquish her calling, even though appropriate positions in academic institutions were never forthcoming; nor would she abandon her lodestar and fall back into teaching science in a women's college.

Rossiter clearly displays the causes and

Gentlemen of Science

Oxford University Press have recently issued a paperback edition of Jack Morrell and Arnold Thackray's *Gentlemen of Science: Early Years of the British Association for the Advancement of Science*. In his review of the original edition (*Nature* 294, 19; 1981) Robert Fox spoke of the book as bristling "with challenging interpretations". Price of the paperback is £7.95.

effects of the fluctuations in women's status in the American scientific scene, as well as the social and personal obstacles that lay in their paths. Many men, such as Amos Rennselaer, helped from deep conviction; many women, such as Dean Laura Gill of Columbia, hindered — equally from deep convictions. With humour and barbed shaft, Margaret Rossiter has provided a book that, in fact or analysis, in reference or bibliography, is a splendid and totally satisfying feast, whetting the appetite for the next volume that will bring the record from 1940 up to the present day.

Beyond the present who can say what new pressures may influence the status of women in science, whether in Europe or in America? There are some who argue that the position is now getting worse again as the pendulum swings once more. Rossiter's wry comment on the early pioneers was true in the nineteenth century and in the prime of Barbara McClintock's life in the 1930s: "If one wishes to introduce seemingly radical reforms it helps to be personally discreet and socially conservative". There is no reason to suppose that it is not true now. *Plus ça change...* □

June Goodfield is Visiting Associate Professor of Biomedical Science and Social Policy in Medicine at Cornell University Medical College. Among other books she is author of *Reflections on Science and the Media (AAAS, 1981)*.

ADVERTISEMENT

TELL THEM HOW IT REALLY IS

"THE ATOM: A CLOSER LOOK"

**A Unique Film
About Atomic Energy**
30 minute 16mm color film
to introduce students, grades
6 through 12, and the general
public to nuclear energy.

Describes atom's structure, nuclear
chain reaction, the operation of
nuclear power plants, radiation's af-
fect on the environment and nuclear-
waste disposal.

PRODUCED

BY: **WALT DISNEY**

Educational Media Company
English German
Neutral Spanish

American Nuclear Society

555 North Kensington Avenue 312/382-6811
La Grange Park, IL 60525 USA Telex: 254635

Place for a quiet revolution

Derek A. Roe

The Middle Stone Age at Klasies River Mouth in South Africa.

By Ronald Singer and John Wymer.
University of Chicago Press: 1982.
Pp. 231. \$30, £24.

FROM time to time, discoveries are made which radically change our perception of some segment of the past. It happened, for example, in the 1960s, when potassium-argon dating suddenly almost doubled the Lower Palaeolithic time-scale and the estimated age of the Plio-Pleistocene boundary. Over the past 15 years, there has been an almost as drastic if rather more gradual reappraisal of the age and status of the sub-Saharan Middle Stone Age (MSA). Klasies River Mouth, on the Tzitzikama coast of South Africa, is one of the crucial sites in this quiet revolution, and this volume gives a definitive account of the archaeological, geological and environmental research carried out at the group of caves and rock-shelters there. Hitherto, only the fauna and sediment stratigraphy had been reported on, so this publication had been eagerly awaited.

The conventional view of the MSA of southern Africa, virtually unchallenged even ten years ago, made it broadly contemporary with the Upper Palaeolithic of the Northern Hemisphere, beginning perhaps in the 30,000s and possibly lasting until the end of the Pleistocene. True, the stone tools did mostly resemble those of the much earlier Middle Palaeolithic in the north, where many people would have called them "Levalloisian" or "Mousterian"

without a second thought, but it was assumed that in southernmost Africa there had been no "real" Upper Palaeolithic and old techniques would therefore have lasted on. The extent of the reappraisal is that we now see the MSA as well established by 120,000 years ago, perhaps substantially earlier; in most places it must have ended well before the date when it was previously assumed to begin. It has therefore become a chronological as well as a technological equivalent of the northern Middle Palaeolithic, which makes excellent sense. The South African Late Stone Age, incidentally, has expanded to fill most of the gap, but that is another story.

The role of Klasies in all this has been to provide by far the longest and richest MSA sequence, with its earliest stage closely related to a marine transgression of "Last Interglacial" age, almost certainly of oxygen isotope stage 5e (120–130,000 years ago). The caves and shelters are interpreted in combination to yield a remarkable single sequence, including an unbroken succession of deposits no less than 18 metres deep, with signs that a further 6 metres may have been lost by erosion. More MSA deposits follow, before a long break, which may exceed 50,000 years; afterwards, "strandloper" middens accumulated, rather late in the Late Stone Age. The Middle Stone Age sequence is divided into MSA I–IV, the four stages showing only minor variations in their tool-kits, which were based on the production of flakes and flake-blades from prepared cores. The erosional break referred to above comes between MSA III and IV. But between MSA II and III comes a substantial and important occurrence of what is called Howieson's Poort material — a strikingly different and forward-looking industry, with smaller and narrower flake-blades, probably punch-struck, many of them worked into

Years BP	Environment	Archaeology
c. 2,500	Sea level near present. Dry climate.	LSA II shell midden
c. 4,700	Sea level near present. Cave damp.	LSA I shell midden
c. 5,000 	Major stalagmite formation. Erosion of external midden and front of cave deposits. Sea near present level.	No occupation
c. 65,000 c. 70,000	Major drop in sea level: oxygen isotope stage 4. Wet. Aeolian sand covers the cave deposits.	Sparse occupation of MSA IV
c. 80,000	Dry	MSA III
c. 95,000	Sea near present level. Cooler and dry.	Howieson's Poort industry
c. 105,000	Sea level at 4–5 m O.D.	MSA II
c. 115,000	Sea near present level.	MSA II
c. 120,000	Slight fall in sea level.	Initial occupation of MSA I, with <i>Homo sapiens sapiens</i>
c. 125,000	Main cave eroded or re-modelled at time of major transgression of 6–8 m sea (oxygen isotope substage 5e).	No occupation

Klasies River Mouth, Eastern Cape Province, South Africa. Time scale based on relative sea levels, environmental interpretation and external stratigraphic inferences by Karl W. Butzer, correlated against major archaeological divisions by John Wymer. The Middle Stone Age (MSA) of South Africa is based on production of substantial flake-blades from prepared cores, resembling the Levallois technique as found in Europe, the Levant and North Africa. The Howieson's Poort is a semi-microlithic industry with small scrapers, graters and various backed blade types. It is the earliest known industry of this kind, with certain technological similarities to the Upper Palaeolithic industries of Europe and western Asia which go back to c. 35–40,000 years ago.