

MONASH UNIVERSITY GAZETTE

THE MONASH LIBRARY AND THE COMPUTER

By P. R. Snoxall, *Library Systems Analyst and Programmer*

Much attention has been paid since the late 1940's to the general theory of automation in libraries. Early experiments designed to adapt electronic accounting machines and punched cards were exemplified in the U.S.A. by the work of H. P. Luhn, and subsequently numerous applications have developed around the now ubiquitous computer. These as yet fall rather short of the total systems concept so dear to many librarians and analysts alike. Nonetheless, the underlying concept for libraries at Florida Atlantic University, the University of the Ruhr at Bochum, and the Intrex Scheme at the Massachusetts Institute of Technology, emphasizes the computer record as the basis for processing and service facilities in library operations.

Major studies at the University of Illinois, Chicago, and at the Library of Congress in Washington have been concerned with the fusion of the technical possibilities of automation with the practical demands and expectations of librarianship; and project work continues at a growing rate in schools of library science, and in research and public libraries alike. It was, therefore, perhaps with a sense of some despondency, that librarians noted the remarks of Harrison Bryan, librarian of the University of Sydney, who, writing in the *Australian Library Journal* in August 1966, reported that his personal examination of actual developments in the U.S.A. had revealed that "projects which have all the recorded confidence of operating schemes turn out to be projects indeed: systems . . . abandoned or modified out of recognition . . ."

Nevertheless, there have been some experiments involving the use of computers in library work which have yielded promising results and which have encouraged an extension of this type of research. A recent study of indexes held in the Hargrave and bio-medical libraries on this campus showed that more than twenty of them had been compiled or produced with some mechanical or computer assistance.

In the humanities, terminological and linguistic difficulties have contributed to the maintenance of barriers against the sort of codification which computer developments tend to demand. Judged however by the growing interest in computers as analytical tools in the study of literature, their application to the control and arrangement of literary reference is a fairly probable area of further exploitation.

However, the preparation of machined indexes and the conduct of library processes by computer are not necessarily one and the same thing. Libraries, moreover, are not factories, and it has often been said that because of the intellectual content of much library work it is not possible to simulate production-line techniques or to introduce large-scale mechanization. This, at any rate, is a contention which librarians examine to their greater or lesser satisfaction each time a new generation of "automatic" systems equipment is announced. The relevance to the Monash library of computer-based systems will increase, moreover, as more and more organizations ranging from professional societies and publishers to booksellers and library groups concentrate upon the capture and provision of machine-readable bibliographic

records. The view is now widely accepted that any form of mechanization which can meet the needs of both libraries and clients is relevant, provided that it enhances information services in general, and provided also that the expense involved is justified in the local situation.

Early studies in the acquisitions and cataloguing areas at Monash, which were reported by D. V. A. Campbell and T. B. Southwell in the *Australian Library Journal* in October 1966, indicated that the library might usefully consider utilizing some of the University's computing facilities in assisting the conduct of its "back-room" tasks, and directed attention initially towards cataloguing. There were three major reasons for not choosing the more obvious task of acquisitions for initial study: the acquisitions department makes heavy use of the catalogue; catalogue records are of longer-term value than order records (and typically differ substantially from them); and the use of a computer in the task of matching books with orders seemed particularly complex (especially when books may arrive by donation, under a standing order contract, in answer to an individual order, in parts, or sometimes under an apparent different identity).

Early in 1966, however, growing student numbers and a basic shortage of teaching materials in the main library's undergraduate reading sector strained the existing procedures for the control and issue of books and periodical articles in heavy demand, and created a management problem which required an early solution. This was tackled (student reading programme) on the basis that short titles of items coming within the general definition of "recommended undergraduate reading materials", including set texts, items on reserve, and items available only on restricted loan periods (e.g., overnight) would be encompassed within a computer-processed system. This supplies frequent, easy to use, comprehensive reference documentation for the majority (about 3,500) of the main library's users over a dynamic sector of library stock, and relieves pressure on the main catalogue. The production of "instant catalogues" of materials similar to these has been an important part of the New University Libraries Project in Ontario and has assisted both in the setting up of new basic collections and in the provision of immediate reference lists to those already existing. At Monash, numerous by-products have resulted from the implementation of the student reading programme, including the facility to list economically a file now approaching 18,000 citations to over 40,000 books and articles. Listings by classification, by teaching course, by type of material (e.g., photocopy), or by control category (e.g., reserve), for library users' and departmental requirements are now produced on a schedule. It can be seen that there are possibilities within the system for a ready supply of information from the library to teaching departments, which can have a significant influence on the planned utilization of library materials (typically multiple-copy holdings), particularly where a conflict of demand for basic authoritative works occurs between related courses at certain times of the year. Analysis by computer of student

reading reference files has already yielded data of considerable value for this purpose. The system is, furthermore, currently undergoing expansion to permit the incorporation of communications terminals providing direct access to the library's computer files at the University computer centre.

Comparison of computer processes introduced so far in the student reading area with those existing before "computerization" indicates that there are marginal cost economies. Where the computer systems appear to have a decided advantage, however, is in their capacity for a considerable increase in data intake and range of products without a consequent increase in cost in the same linear relationship as earlier systems exhibited.

No staff retrenchment is likely in the present context, but there are some grounds for hope that use of the computer in library process work will facilitate the provision of services to meet the increasing demands being made on the library.

From the student reading programme it was a short step to the development of a computer file of titles for periodicals currently received. A previous edition of this list at Monash in 1964 utilized the comparatively expensive but very presentable Fotolist (Sequential) Camera technique. The regular presentation of this sort of documentation is always difficult, however, since the basic file requires considerable staff attention and revision for each production cycle, and it was decided that the importance of this list, from the current awareness viewpoint, coupled with the need for regular and rapid up-dating and economical listing schedules, made a computer application eminently desirable.

This development must naturally be regarded as a first measure only in the provision of machine access to the control and entry of periodicals information. Using the University computer facilities, and those of the office services section, new editions of "periodicals currently received" can be processed and printed relatively cheaply, and the first such edition was distributed in the latter part of 1967. As with student reading, the basic file has been used for several special-purpose listings, including selections for French, German and mathematics, and is used regularly for the provision of information necessary for the management of library processes.

A similar technique has been applied to the recording of titles held in departmental libraries, many of which do not at present occur in the main catalogue. This list is an essential prerequisite to the establishment of a proper control mechanism for the cataloguing of this considerable bulk of "unadvertised" material (over 11,000 titles). Once again the adoption of this programme was facilitated by the use of the short-title technique applied in the student reading programme. The result of the exercise has been for the first time consolidated information about departmental collections relevant both on the Monash campus and elsewhere (e.g., city hospitals) which provides the necessary foundation for a thorough examination of the relationship between these holdings and those in main and branch libraries on the campus.

The use of short title entries in the work described above has proved quite adequate for the purposes for which they were designed, but to suggest that this type of entry can answer all the problems encountered in

accessioning, cataloguing and referencing library materials would be a major over-simplification.

The main project is and has always been the development of computer-readable catalogue entries. While these can be produced locally, the commercial availability in punched paper tape form of catalogue entries which resemble the products of another and larger computer system (at the U.S. Library of Congress) has raised the question of how many such records need actually to be made locally. It is, therefore, appropriate that programmes should be developed to take advantage of this new source of information, and an exercise is now being undertaken which is already yielding technical data (compiled through the good offices of four research libraries in Victoria) of a kind not previously available in Australia.

So far we have been concerned mainly with the technicalities of using computers as tools in cataloguing work; we are now assessing the wider implications from a library systems viewpoint—the possibilities, for example, of extracting a substantial number of the basic records we need from a centrally supplied "data bank", and of augmenting and enriching that supply to fit our needs, and possibly also those of some other libraries in the Melbourne area. This amounts to a fresh experiment in central cataloguing: an idea often explored but seldom successfully achieved. Recent analysis of the current collecting patterns in Victorian universities reveals a relatively low rate of duplication, in marked distinction to the prevailing pattern in some American state universities for example; and it has hitherto been generally accepted that without a large measure of simultaneity in separate cataloguing processes centralization must be unprofitable. But current emphasis in Britain, the U.S.A. and Australia points to the re-emergence of some form of central cataloguing as a serious possibility, perhaps the more so in the light of the new technology associated with computer utilization, and if this possibility is to be regarded seriously it must be examined in the local context.

Australian libraries are increasingly involving themselves with automation in various forms: some forty-five such projects were listed in March 1967. Much work has been done to formalize existing library procedures, which must be done before any computer systems are implemented, and some fairly interesting computer processes have been placed on a regular operational basis. Some programming and system analysis positions have been created in Australian libraries to relieve librarians of the need to make outside arrangements for this sort of work. In concert with this trend, the acceptance of data processing as an ingredient in professional training for intending librarians is now winning official recognition. The whole development of applied computer systems in libraries must, to a large extent therefore, depend upon the integration and familiarization of personnel with new ways, and the continued recognition of the importance of research in the field of library science.

The impact of computers will affect not only the way in which libraries conduct the business of collecting, registering and displaying their material resources but also the whole library/patron relationship. It is important, therefore, to foster a "feedback" mechanism which will supply libraries with much-needed information from users about their particular requirements of library ser-

vice so that suggestions as to how these might best be met may be explored. We are fortunate, on this campus, in having good computer facilities and these have promoted an increasing tempo of usage, but it is characteristic of computer applications in general that they engender change and experimentation which sometimes over-indulge the appetite. There is always the danger, therefore, that we could exceed our mechanical capacity to handle a growing work load.

Thus, it is important that the library (in common with other computer users on the campus) examine commitments from time to time with a view to balancing de-

mands for machine time, and in consequence a flexible approach to system design and a strict control of developmental applications must be maintained. This precludes, for example, some of the more sophisticated applications of information retrieval. Interest is, and must remain, firmly in the data processing area at present. What we quite certainly cannot afford is an early and possibly ill-advised adventure into the expensive experimental field of information retrieval, from which we could so easily emerge having accomplished "de-trieval" on a massive scale.

THE LENINGRAD-MONASH EXCHANGE SCHEME

By G. Ettershank, Senior Lecturer, Faculty of Science

In June 1966 the Rector of Leningrad State University and the Vice-Chancellor of Monash University signed an agreement under which, each year, one academic and one graduate student from each university would visit the other for periods of one to two months and ten months respectively.

In November 1967 I found myself winging overseas as the first exchange lecturer under the scheme, heading for a month's stay in the department of Entomology at Leningrad armed with lots of literature about Australia and a Russian phrase book. I planned to lecture on techniques for studying the ecology of soil-dwelling invertebrates, a subject sufficiently esoteric from the viewpoint of the general reader that it will not be mentioned further except to say that the lectures were a great success.

I travelled in the relative luxury of modern flight to Delhi where I transferred to a Russian aircraft which was technologically very impressive but not very comfortable. My first discovery was that there was no seat allocation—first come, best seated! After finding a seat at the back, I investigated the literature supply in the pocket in front of me—one airsick bag and a booklet on aerial agriculture in the U.S.S.R.

After some delay we took off and climbed steeply over the foothills of the Himalayas, finally settling down to cruise at 36,000 feet and 540 m.p.h. This hungry traveller saw hostesses active further up the plane and assumed breakfast was on the way, but no, they were selling souvenirs and vodka to the passengers. Breakfast did materialize later—an incredibly heterogeneous meal with caviar and a white starched napkin as particularly noteworthy memories.

Six hours later we landed at Moscow through heavy overcast to a temperature of -3°C , a rather abrupt change from the Australian summer I had left some thirty hours before. With over two hundred passengers to process, clearance through health, passport control and Customs was a protracted but uneventful process—I was not even asked to open my bags, though I did have to declare all currency and traveller's cheques I was carrying.

I had arranged, before leaving Australia, to borrow films from the Information Service and from C.S.I.R.O.; these, together with a parcel of booklets on a variety

of aspects of Australiana, were to be waiting for me at the Australian Embassy, so I enquired how to get to the city. I settled myself on the bus indicated, and we set off.

Later a lady fare-collector boarded the bus, and I received my first insight into the basic friendliness of the ordinary Russian. I could not understand the collector, but the lady sitting next to me spoke a little German, and with the help of my Russian dictionary we sorted out the fare. Although this was holding up the bus, everybody saw it as a great joke and we were most comradely!

Next day I flew on to Leningrad where I was met at the airport by Professor Yuri Kovalev, my correspondent at the department of Entomology, Victor Petrovitch Tyschenko, and two representatives of the University's Foreign Department. After welcoming me, the first two took me to my hotel, checked me in, and then took me to dinner where I was initiated into the drinking of vodka, Russian style. A happy biologist settled in for his stay!

When I went on a trip of exploration next morning I found that my hotel, the Oktiabrskaya, was enormous. The ground floor was occupied by dining-rooms and administration, a post-office, beauty shop, barber shop, and a branch of the "Beriozka", a chain of shops dealing only in foreign currency where the tourist can buy a range of imported goods, but more interestingly, many items of Soviet origin often at one third to one half their price in ordinary shops. On the ground floor too was the only bar in Leningrad (as opposed to beer-shops) which served hard liquor, either straight or in mixtures, and espresso coffee. A very useful assemblage! On the four floors above were endless corridors of rooms leading off from a central stair well, each corridor guarded by a stern lady at a desk who handed out keys and kept (one felt) a strict eye on comings and goings.

My own room was unimaginative but satisfactory, with a bathroom *ensuite*, a desk, four straight-backed chairs, a wardrobe and a bed, two reading lamps, a telephone and a small loudspeaker which broadcast a local radio programme day and night. It was possible to turn the latter off, but unfortunately not the telephone, as I was soon to find out. Leningrad has an extensive phone system but no phone books, so every-