CHAPTER 3
PERIODICALS: AN OVERVIEW

The purpose of this chapter is to bring the audience the detailed account of periodicals. The chapter commences with the introduction explaining the brief description of periodicals, their definitions, historical development, importance, types, functions and problems. It provides an overview of electronic journals, their brief history, growth, definitions, characteristics, types, difference between the two types, and indicators for measuring periodical usage.

It is generally accepted that scientific and technological communications comprise the life blood of research and development. The progress of Science and Technology is impeded unless new knowledge generated by research flows freely, quickly and timely among the scientific and technical community. The increased rate of scientific discoveries accompanied by the rapid application through technology has added an element of greater urgency in disseminating research results among scientists and engineers. The literature is generally published as periodical articles since periodicals are the best available sources among the primary communicating media for exchange of scientific results. The importance of periodical publication increases as the necessity for going deep, pinpointed and up-to-date knowledge increased.

The periodicals have not only been the chief medium for disseminating current information but have also served as an important part of a library collection. These are helpful in fulfilling both the objectives of teaching and research of an organisation. University and Research libraries usually spend more than 70 percent of their total budgets on the subscription of periodicals only. Periodicals, a source of current information have become indispensable these days because the results of research being done in different parts of the world are communicated through them. (Ravat & Kumar, 2002).

At the general conference of UNESCO, held at Paris on 19th November, 1964, it was agreed that a publication is a periodical, if it constitutes one issue
in a continuous series under the same title, published at regular or irregular
intervals over an indefinite period, individual issue in the series being dated.
(Chabbra, 1994).

Periodical publication is now truly the fashion of the day in all lines the
world over. Journals keep hundreds of thousands of specialists abreast of the
growth of knowledge in their several lines of investigation. Several other
journals inform the banker, the merchant, the artisan, the tradesman, the
professor, the teacher, even the librarian, what is going on in his field. The
journals are usually about five years ahead of the books in every subject. They
form the record of progress in the sciences and the arts, in the crafts, and trades
and occupation.

Serial publications (including newspapers, periodicals, bulletins, reports,
most government documents, and books in series) constitute perhaps 75 per
cent of all publications, an indispensable part from the viewpoint of research. It
is in serial publications that advance information and discussion are found; and
also the detailed records which support most scientific, legal, and historical
study. Every large research activity should give prime importance while
acquiring and recording serial publications. Because the separate issues of
serials cannot be treated individually as are books, but must be considered in
conjunction with other issues, they represent the form of publication which is
most difficult to control, at all stages- acquisition, accessioning, processing and

3.1 Periodical: Definitions

A periodical is a publication such as a magazine, journal, or newspaper.
They're called periodicals because they are published at periodic intervals, i.e.
daily, weekly, monthly, quarterly, or yearly. They are extremely important
sources of information, provide a historical record of past ideas, opinions,
accomplishments, and social problems. ("Introduction to library studies", n.d.)

Some definitions of periodicals are as follows:
Glossary of Library and Information Science defines “A periodical is a serial published indefinitely at regular or stated intervals, generally more frequently than once a year. Each issue is numbered and / or dated consecutively and contains articles, stories, or other writings. Journal, Magazines and Newspapers and Periodicals publication in a continuous series, with a consecutive number and no predetermined end, as distinct from a single work in several parts.” (Ali, 2004).

The Librarian's Glossary overviews a periodical as "A publication with a distinctive title which appears at stated or regular intervals, generally oftener than once a year, without prior decision as to when the last issue shall appear.” (Harrod, 1971).

Encyclopaedia of Librarianship defines a periodical “A publication issued at regular intervals, each issue normally being numbered consecutively and usually dated, within foreseen and to the sequence as publication” (Landu, 1966).

Grenfell defines a periodical as "A publication in a continuous series with a consecutive number and no predetermined end, as distinct from a single work in several parts" (Grenfell, 1965).

According to Dr. S.R. Ranganathan, Periodical publication is a document with the following attributes:

Periodicity: A volume or small group of volumes of it, is published or intended to be published or completed normally once in a year or at other regular intervals though irregularity in intervals is not ruled out;

Distinguishing Number: Each successive volume or periodical group of volumes, is usually distinguished by the year of publication and/or by a number belonging to a system of single or complex ordinal number usually called a volume number; and

Continuity: The intention had been to continue the publication forever and with the same title in all the volumes though not actually carried out. (Ranganathan, 1967).
3.2 Serials, Periodicals and Journal

Periodicals, journals, magazines, newspapers, and annual publications are all examples of serials. A serial is the broadest term for these types of publications. *Serials* are publications issued at intervals over a period of time in successive parts bearing numeric and chronological designations that are intended to be continued in definitely. They include periodicals but also proceedings, annuals and irregular publications. The terms serials, periodicals, magazines, and journals are often interchanged, and their distinctions are not always cleared. Periodicals are publications that are issued in frequently regular intervals. They include magazines, journals and newspapers. The distinction between *magazines* and *journals* is small but can be important. Generally magazines are considered to be of popular interests. *Newspapers* are really different from other current event magazines, accept that some come out daily, and come in the familiar news print formats. ("Importance of speciality magazines and periodicals", n.d.)

**Periodical**: It is a publication which appears indefinitely at regular or stated intervals; generally more frequently than annually, each issue of which is numbered or dated consecutively and normally contains separate articles, stories, or other writing.

**Journal**: A periodical, especially one containing scholarly articles and/or disseminating current information on research and development particular subject field.

*H.A. Sharp* has attempted to distinguish between the two publications by the following definitions.

**Periodical**: Strictly to be distinguished from a serial in that while it appears at intervals, not necessarily stated ones, the publications extends for an indefinite time. To be distinguished in cataloguing from memoirs, proceedings, transactions, etc, of a society.

**Serial**: Any publication and parts, appearing at intervals, usually
regular ones. The term includes periodicals, annuals, and proceedings or memoirs of societies. (Sharp, 1948).

J.H Gable, in his Manual of serials work, has given two definitions-

Periodical: A serial issued at definite intervals under a distinctive title, or, to eliminate the definition for serial, a periodical is a publication issued at regular intervals, with some scheme for consecutive numbering, intended to be continued indefinitely, and with a distinctive title.

Serial: Any publication, whether issued at regular or irregular intervals, with some scheme for consecutive numbering, and intended to be continued indefinitely. (Gable, 1937).

Casting in this light periodical publication occupies a prominent role in information transfer irrespective of the subject coverage and interdisciplinary relationships. Of course, one can undoubtedly claim that a subject of study cannot develop unless being adequately supported by the periodical literature, notably primary journals which in modern times enhance the pace of research and specialization as it is most vibrant and multifunctional media for research community to comprehensively build their knowledge base.

3.3 Functions of Primary Journal

Since its inception over 300 years ago, the primary journal has been the most important channel for the formal communication of scientific information. The primary journal serves three important functions; firstly, it is an official public record of science. The journal serves as an archival record of scientific scholarship scrutinized and validated by scientists through a "conserves forming mechanism" that separates trivia and unsubstantiated claims from tested and validated facts, explanations, and predictions referred papers published in primary journals serve as the basic source material for consolidation and compaction into textbooks, reviews, handbooks, encyclopedias and similar other secondary functions.

Secondly, the primary journal is a medium for disseminating
information. Besides the results of research and development activity, the journal conveys a variety of information historical, social, political commercial and pedagogical information of interests to scientists. From 1665 until about the middle of the 19th century, the main function of the primary journal was to serve as an archival record of science. As the number of scientists began to increase during the later part of depend on the journal as a medium through which they could keep themselves abreast of current developments in scientific research.

Lastly, the primary journal is a social institution that confers prestige and rewards on authors, editors, referees, subscribers, and publishers. Published papers are considered as a tangible measure of a scientist's contribution to the advancement of scientific knowledge and as a basis for an evaluation of his work by his peers and employees. Publications also facilitate the establishment of priority and ownership of inventions and ideas. The journal also confers recognition and prestige on editors and referees in view of their participation in the monitoring and validating processes that are so essential to maintain the quality of scientific literature to the subscriber, the refereed primary journal is a symbol of his professional credentials. The reward that accesses to publishers of primary journals is combination of prestige and financial returns. Scholarly societies and universities that publish primary journals are impelled by their commitment to the announcement of scientific discipline and commercial publishers publish journal in anticipation of financial rewards. (Kent, 1979).

Pieter A. Van Branked outlined four functions performed by scholarly journals:

i. Building a collective knowledge base
ii. Communicating information
iii. Distributing such rewards as recognition, priority and funding

3.4 History of Periodicals

The publication of periodicals has not come by sudden mutation. It is not a Minerva-like creation springing full grown from the head of one single
individual. Just as it is now accepted that multicellular man originated from a single unicellular organism during the course of evolution, similarly is with the periodicals. (Chabbra, 1994).

The Origin of serials had been traced to antiquity. Andrew. D. Osborn has divided serials history into four broad periods. The initial period, to 1700 A.D., the so-called incunabula period of serial publications, witnessed "numerous for runners of serial publications, including Almanacs, annual book catalogs, and Newspapers. In the second period, rise of the literary periodicals, 1700 A.D. to 1825 A.D., daily newspapers replaced weekly and literary periodicals, gentleman's magazines, and proceedings of the learned societies, scientific periodicals, law reports, and parliamentary papers, flourished. The third period, 1825 A.D. to 1890 A.D., was characterized by great expansion in the number of periodicals and their circulation, especially in the post civil war era. This was the golden age of the Newspaper.

Osbom's fourth period, from 1890, saw a vast proliferation of periodicals in an "era of mass communications made possible by cheap paper. Tabloid Newspapers, pulp magazines, sport magazines and periodicals for men grew in number "Little magazines, the underground press, and radical political publications were typical of this period. (Osborn, 1973).

Serial forerunners of one kind or another including spoken newspapers, existed for better than 3,000 years before Gutenberg's invention.

Possibly the earliest serial was represented, some 4,700 years ago, by the annals transcribed on the tombs of the fifth dynasty kings of Egypt who reigned from 2750 to 2625 B.C. According to Suetonius, in 60 B.C. "Caesar's very first enactment after becoming consul was, that the proceedings both of the senate and the people should day by day compiled and published". This manuscript newspapers, which was posted in a public place before being copied by the scribes, was referred to by a variety of names, among them 'Acta Diurna, Acta Populi, and Acta Publica. It covered political affairs, news of the emperor and his family, and daily happenings of all kinds. It ceased only
when Constantine made Constantinople the capital of the Roman Empire in 330 A.D. So the Annals written on the tombs of Egyptian kings during the first dynasty may possibly be considered the world's earliest serials. The earliest Newspaper in China was Li-Pao. It began as a hand-written paper in the Han dynasty, which extended from 206 B.C. to A.D. 220. It continued through the era of block printing and into the age of movable type. The paper terminated in 1736 and was succeeded by Ching-pao. It is generally accepted that first real newspapers were issued in Germany in 1609. (Osborn, 1955).

In Europe, from the thirteenth century on, it was not uncommon for long series of handwritten letters to be sent to great mercantile houses. The most extensive of these series was undoubtedly the Fugger newsletters, some 17,600 numbers written on 35,230 pages between 1568 and 1605 which are preserved in twenty-seven volumes in the National Library in Vienna. Following the manuscript newsletter came printed ones, as well as a number of other and antecedents of serial publications. The first printed newspaper was the Avisa, Relation Oder Zeitung, which was issued in Augsburg and bears the date 15th Jan., 1669 on the first number. (Adhikari, 2000).

The first newspaper in French was printed in Amsterdam in 1620, not until eleven years later was one printed in France. The first Newspaper in English was likewise printed in Amsterdam from 2nd December 1620 to 18th September 1621, it usually bore the title Corrant out of Italy, Germany etc. What has been called the "First truly English Newspaper" did not appear until the end of November 1641; it was a weekly entitled: The heads of several proceedings in this Present Parliament. Nearly twenty years more had to elapse before the first daily paper was published in England, A Perfect Diurnal of Every Dayes Proceedings in Parliament, which ran for twenty one issues in 1660. The first American Newspaper appeared in Boston on 25 September 1690. It was called Publick Occurrences and was suppressed after a single issue. Fourteen years later the Boston News Letter began and lasted for seventy two years. Hand written letters were the immediate antecedents of periodicals, as well as of newspapers. (Osborn, 1955).
3.4.1 History of Scholarly Journal

A major impetus to the origin of scholarly journal was the founding of national academies devoted to the study of science. Between 1635 and 1752, at least 11 such academies were founded in Paris, London, Bologna, Berlin, Lyons, Milan, Uppsala, St. Petersburg, Philadelphia and Gottingen. Perhaps the most famous of these is the Royal Society of London, founded in 1645 and officially charted in 1662. At the beginning of the 17th century, written scientific communication was primarily through books and gazettes. By 1660 the men of science recognized that they were dependent on private correspondence to keep abreast of the new knowledge being discovered throughout the world. From the mid 17th century the device of the scientific paper had not yet been invented and men did not publish until they though had mastered completely some whole department of science and could produce a definite book.

The origin of the modern university, the experimental methods widespread adoption by scientists, and the development of a dependable European postal system were other factors during the sixteenth and seventeenth centuries that helped by the ground works for scholarly journals. On January 5, 1665, a weekly publication called Journal des Scavans, considered the first true scholarly journal by many authorities began in Paris under the direction of Denis de Sallo. Osbom reports that the first issue's preface stated five objectives, including listing major European books, publishing obituaries, recording advances in the sciences, and citing civil and ecclesiastical court decisions. In its early years, the primary emphasis was on the listing and reviewing of books. Publication was suspended during the French Revolution in December 1792; when publication resumed in August 1816 the periodical was renamed Journal des Savants. In March 1665, the Royal Society of London began publishing a monthly periodical titled philosophical Transactions. Giving some Account of the Present Undertakings, Studies, and Labours of the Ingenious in Many considerable parts of the World, edited by
Henry Oldenburg, subtitle was dropped after a short time.

In 1684, an academy in Holland issued *Novvelles de la Republique des letters. Memoirs of the Academy of Sciences* in Russia began in 1728. Benjamin Franklin Founded the *Transactions of the American Philosophical Society* in 1771 yet many of the journals founded during the 17th and 18th century ceased existence after a year or two. Kronick identifies *Medicina Curiosa* or a variety of few communications in *Physick, Churgery and Anatomy*, of which two issues were published in 1684, as Great Britain's first medical journal. (Balakrishna, 2000).

Although, the first periodicals disseminated scholarly knowledge, periodicals whose chief purpose was to entertain emerged during the late seventeenth and early eighteenth centuries. Davinson names *Atlantic Mercury*, founded about 1690, and *Ladies Mercury*, began a few years later, as the earliest popular periodical. *The Tatler*, a periodical founded in England by Richard Steele in 1709, has been identified by Clara D. Brown and Lynn S. Smith as "the first popular magazine". Two years later in 1711, Joseph Addison founded his equally famous spectator. *The Gentleman's Magazine*, founded in 1731, was supposedly the first periodical to use the word magazine in its title.

Veaner cites as examples of early disciplinary journals *the transactions of the Geological Society of London*, founded in 1811; *the Memoirs of the Royal Astronomical Society*, which began in 1825, and *the Chemical Society's journal* started in 1848. Moreover, by the mid-1800s most journals were aimed at specialized audiences of scientists and trend that has intensified in the 20th century.

According to Donald Davinson, the *Edinburgh Review*, first published in 1802, served as a model for others including the *Quarterly Review*, founded in 1809; *Westminster Review*, Started in 1824; and the Athenaeum, which began in 1826. Although their chief function was entertainment, these reviews were generally characterized by lower circulations and more scholarly content than mere magazines.
The year 1831 was declared as the golden age of periodicals. Periodicals were found to be very useful in every field. Sects and parties, benevolent societies, and ingenious individuals all have their periodicals. Science and literature, religion and law, agriculture and arts, have preferred periodicals the best mode for enlightening the public mind.

By the 1850s the humanities journal evolved from one serving the tastes of the amateur of letters into a form the more scientifically oriented needs of specialists scholars. After 1880, every science, art, profession and trade began the issue its own periodical and periodicals until no field of activity, however highly specialized remained unrepresented.

The late 19th century saw the birth of the illustrated magazines and the 20th century seen the accelerated development of all types of periodicals. The number of such periodicals has been increased to 150,000 titles in 1983. The number of learned periodicals in 1989 was around 100,00 with an estimated number of 12 million articles published in a year.

In 1975 Houghton outlined the rapid growth in the number of scientific journals during the three centuries after the first ones were founded. Citing various authoritative sources, Houghton estimated the number of published scientific periodicals at 30 in 1700, 330 in 1730, 760 in 1800, 5,100 in 1885, 8,600 in 1895, 25,000 in 1920, 36,000 in 1930, 50,000 in 1950, 60,000 in 1960, and 75,000 in 1970. (Houghton, 1975).

Osborn using data from the Library of Congress state that by 1957, 630,000 serial publications had at some time or place been published since the first printed newspaper in 1609. His estimate for 1971 was 900,000 serials, with a projected figure of 1.5 million serials by the year 2000. (Osborn, 1980).

3.4.2 Origin and growth of Scientific Periodicals in India

The origin of modern scientific periodical lies in the development of the newspaper and establishment of scientific society. Earlier the periodicals in India covered wide range of subjects like literature, humanities, folklore etc.
the newspapers were the forerunners of these periodicals. The first Indian learned periodical “Asiatick Researches” was launched by the Asiatic society of Bengal, in 1788 for enquiring into the history and antiquities, the arts, sciences and literature of Asia. In 1784 Sir William Jones, who was a lawyer and an Orientals, founded the society, which was first of its kind in India. He came to Calcutta as a judge of Supreme Court at Fort William in Bengal. He delivered a series of scholarly discourses to highlight his ideas about the Asiatic society. He was the first Indian who felt need of a periodical to disseminate his ideas. He actually conceived the idea under the name “Asiatic Miscellany” but it did not materialize and came out with a title “Asiatic Researches”. The periodical came exactly 123 years after the first periodical of the world i.e. Journal des Scavans and Philosophical Transactions. Mr. Manual Cantopher printed it at the East India Company’s printing office. Its 2nd, 3rd, 4th, and 5th volume appeared in 1790, 1793, 1795 and 1797 respectively but ran up to 1839. Another periodical – “Indian Magazine and European Miscellany” started its publication from January 1807 from Madras.

“Dig-Darshan” or “The Indian Youth’s Magazine”, a bilingual (English and Bengali) started publication from Calcutta in April 1818 with monthly frequency. J.C. Marshman was its editor. In the same year in May, “Friend of India” started its publication from Serampore edited by J.C. Marshman. “Gleanings in Science”, a monthly publication started in Calcutta by Captain J.D. Herbert in January 1829. It was the first specialized periodical in General Science. Another periodical launched by the Asiatic Society of Bengal in 1832 was “Journal of Asiatic Society of Bengal”. Similarly in 1833, “The East Indian United Service Journal and Military Magazine” from Calcutta, “Journal of Literature and Science” from Madras in 1833 & “Calcutta Review” from Calcutta in May 1844 started their publication.

The 1788 is regarded as the “golden year” in the literary circles of India as first true periodical came into existence in that year. The period of 1788 to 1850 demarcated as the early days of periodicals, because periodicals were in
formative stage during this period. All the papers dealing with different fields were included in one period without any demarcation. The early periodicals were published mainly from Calcutta, followed by Madras and Bombay. Between 1788-1850, about 75 periodicals were published from Calcutta, 5 from Madras, 4 from Bombay and 1 from Mirzapur. (Sen, 2000).

3.4.3 Development of Periodical Publication during the 20th century

The period from 1788–1851, witnessed remarkable increase in the number of periodical publication. Studies have proved that there has been a considerable proliferation in the number of periodicals during 1851-1900. The period between 1901-1947 demarcated a rapid advance in the number of periodicals in all fields of specializations. Some of the periodicals of this period are:

In 1906, “the Agricultural Journal of India” was started from Calcutta with quarterly frequency. It dealt with crops, economic plants and fruits, soil, manure, etc. In 1931 it split into “Agriculture and livestock in India” (bimonthly), “Indian Journal Agricultural Science” (bimonthly) and “The Indian Journal of Veterinary Science and Animal Husbandry” (Quarterly)

In January 1907, “The Modern Review” a monthly publication started from Allahabad. In 1912, the first library science periodical under the name, “The Library Miscellany” started its publication as quarterly from Baroda.

In 1917, “The Journal of the United Provinces Historical Society” started from Calcutta. In 1919 “the Journal of Indian Botany” was started from Madras. In April 1923 (Vol.-II, No. 6) it became the property of Botanical Society and was renamed as “The Journal of the Indian Botanical Society” in March 1921, a journal titled “Man in India” was started from Ranchi to assist the anthropological society. In July 1924, “The Hindu System of Medicine” started its publication from Calcutta. In November 1930, “The Modern Librarian” which was the official organ of “Punjab Library Association, was started with monthly frequency from Lahore. Likewise in January 1935, “The
Indian Cooperative Review" (quarterly from Madras in 1941, "The Indian Journal of Genetics and Plant breeding" (biannual) from Delhi and in 1946, "The Indian Ecologist" (biannual) started from Bombay. During the period 1901-47, the periodical publications in India began to originate from all the major parts of the country. Round about 387 periodical had been published during this period. (Kumar, 1984).

3.5 Categories of Periodicals

According to Dennis Grogan (1973) periodicals can broadly divided into primary and secondary journals. The primary journals of course devote themselves to report the original research and are also known as 'recording' journals. They form the bedrock of scientific and technological literature, e.g., Biochemical journal, Journal of physiology, Journal of mechanical engineering science, Philosophical magazine, Molecular Physics. The secondary journals, on the other hand, interpret and comment on the research reported in the primary literature. They have been called 'newspaper' journals, but they make up a far more heterogeneous collection than the research journals, e.g., Guide to Periodical Literature, Applied Science & Technology, Current Contents in Science & Technology in India.

Manifestation of the secondary journals has led to the formation of third category of journals i.e. the 'review' journal. These play important role in scientific and technological communication. Review journals precisely survey the developments in a particular field of endeavor over a period, e.g., Biological reviews, Advances in physics, Science progress.

3.5.1 On the basis of publication agencies the journals are classified into following types: (Grogan, 1973).

i. Learned societies, academic bodies

ii. Government bodies

iii. Independent research institutes

iv. Professional bodies

v. Commercial publishers
• Learned and research periodicals
• Technical journals
• Trade Journals
• Popular Science Journals

vi. Industrial and Commercial firms
vii. Journal published by Academic Institutions
viii. Journal published by Individuals.

Brief description of the journals is given below.

i. **Learned societies, Academic bodies**

The main purpose of such periodicals is to furnish an opportunity for authors (usually members of the learned bodies concerned) to publish the results of their investigations, and perhaps the majority of titles in this group are research journals, but there are also a number of secondary journals issued by the societies, frequently alongside a primary journal; e.g., in addition to its research quarterly *Computer journal* the British Computer Society also brings out the monthly *Computer bulletin* as its 'organ', with reports of meetings, data on new equipment, additions to the library, etc.

ii. **Government bodies**

As the role played by government, both national and international, in our lives increases, so does the volume of official publication, particularly in science and technology, where vast sums of public money are currently being spent on research and development. Some of these publications are periodicals, e.g., *Meteorological magazine*, *Marine observer* (both Meteorological Office journals), *Post Office telecommunications journal*, *Canadian journal of Chemistry* (National Research Council of Canada), *World health* (World Health Organization).

iii. **Independent research institutes**

A small but interesting group of periodicals emanates from research institutes that are basically of independent foundation (even though they
perhaps have links with universities, or possibly undertake government work under contract). They may have been established with a particular subject orientation or a particular role to play. Examples of periodicals so produced are *Battelle technical review* (Battelle Memorial Institute, Columbus, Ohio), *Textile research journal* (Textile Research Institute, Princeton, NJ), and *Polar record* (Scott Polar Research Institute, Cambridge).

iv. **Professional bodies**

As a category, bodies like the Institution of Mechanical Engineers, the Royal Institute of Chemistry, overlap with the learned societies, and much of their work (and the periodicals they produce) is distinguishable. Periodicals in this category can range from primary research journals of a caliber and prestige fit to match any learned society publication to what are little more than news bulletins. Examples are: *Mathematical gazette* (Mathematical Association: 'an association of teachers and students in elementary mathematics'), *Journal of basic engineering* (American Society of Mechanical Engineers), Journal of the Royal Aeronautical Society, IASLIC Bulletin etc.

v. **Commercial publishers**

A high proportion of periodicals fall into this category covering the entire spectrum of the universe of knowledge. This category covers periodical publication from the highly technical to the comic strip magazine. Some commercial publishers are known for their technical lists; others as publishers of trade journals; whilst still other publishes a very wide range of periodicals. The examples are: *The Nature; Psychologist, The Statesman, New York Times and Publisher catalogues* such as *Cumulative Book Index, American Publishing Record* etc.

So wide is the variety of such periodicals that it is expedient to subdivide them further into:

- **Learned and research periodicals:** Examples have been commercially produced for a hundred years or more, particularly in Germany, but until
recently they have always been overshadowed by the famous title issued by the learned and professional societies. Representative titles are *Journal of molecular biology*, *Annals of physics*, *Micro chemical journal*.

- **Technical journals**: These are very closely linked with the needs of industry, and although as secondary sources are of limited interest to the research investigator, they are invaluable to manufacturing, sales, and commercial personnel. Much of their content value lies in their other features, such as new columns, letters to the editor, book reviews, etc. Examples are *Electronic engineering*, *Computers and automations*, *Foundry trade journal*.

- **Trade journals**: They are more commercial than technical, and more news–oriented than subject–oriented. Otherwise they are very similar to the technical journals, with an equal reliance on advertisements. *Examples are Poultry world (1874), Contract journal (1879)*. Such journals are particularly useful sources for market news (commodity and share prices), company news (forecasts, dividends, mergers, expansions), and general trade announcements.

- **Popular subject journals**: These are familiar to everyone, and include all the titles for the amateur, the hobbyist, and the enthusiast that are to be found on railway bookstalls, as well as large number of esoteric (not to say crank) publications catering for the most unusual preoccupations. Typical titles are *popular mechanics*, *Yachting world*, *Railway magazine*, *Speleologist*, *Inventor*.

### vi. Industrial and Commercial firms

A number of 'house-journals' or 'house-organs' are published, primarily for the purpose of advertising by manufacturers and dealers and public corporations. These help to promote the products and services of the organization. These often contain valuable information which in industrial
library helps to keep abreast of services of rival companies.

vii. **Journal published by Academic Institutions**

Much of the research work is undertaken by the academic institutions and the findings are usually reported in University and college research journals. These play an important role in the dissemination of latest information pertaining to specific fields of Science & Technology.

viii. **Journals published by Individuals**

Although the number of journals published individually is quite less but these also play an important role in furnishing the latest information. These are single publication and are usually published mostly for money making ventures.

3.5.2 *Bernard Houghton* identifies ten categories of scientific and technical journals:

i. Primary journals of learned societies or professional institutions

ii. Communications journals of learned societies or professional institutions

iii. General purpose journals of learned societies or professional institutions

iv. Review journals of learned societies or professional institutions

v. Primary commercially published journals

vi. Technical and trade commercially published journals

vii. Controlled circulation commercially published journals

viii. Prestige house journals

ix. Information on products house journals

x. Internal House Organs (Houghton, 1975).

3.5.3 *J.H. Gable*, in his Manual of Serials work has divided them into three groups:

i. Those intended to foster the interests of a trade profession or society
iii. Money making ventures (Intended for popular appeal) for popular audience, which Gable subdivided into ten groups: Literary, fiction and short story, features, news and comment, family or women's magazine, reviews, juvenile, humorous, cheap story. (Gable, 1937).

3.5.4 In London, the following are the three main different types of periodicals:

i. The publication of societies and other organizations

ii. House Journals, i.e. the publications of firms and similar bodies

iii. The Independent periodicals

i. **The Publication of Societies and other Organizations**

Into this class come Memoirs, proceedings and transactions. In as much as these publications may be considered as the work of a society or organization acting through its members and in some cases lack a variety of authorship (one of the main characteristics of a periodical), it may be argued that they do not periodicals an argument which is usually ignored, as it has been, for instance, in the royal society's fair copy declaration.

Examples of this type of periodical are-

*Aslib Proceedings, ASLIB, London*

*Proceedings of the Royal Society, the Royal Society, London*

In a similar category are the bulletins and journals of societies and other organizations. Not all have the words 'bulletin' and 'journal' in their title however but may enjoy a distinction title of their own. A great but may enjoy a distinctive title of their own a great number of publications come into this category.

Examples-

*Library Association Record, British Library Association, UK*

*Journal of Documentation (ASLIB), British Library Association, UK.*

These periodicals usually contain written contributions from a variety of authors and differ from the memoirs etc., in that the contributions or articles do
not usually emanate from conferences or meetings.

ii. **House Journals**

House journals are the publications of firms and similar bodies, as well as other organizations, usually distributed free, and are of limited circulation. Some contain only news items of an ephemeral nature and some matter of a trade or advertising nature, while others, particularly in the technical field are very specialized and contain much fundamental work.

Example -

*IBM Journal of Research & Development*
*ILA News letter (Organ of the ILA)*
*ASLIB Information*

Another type of publications that can be included in this class are journals sometimes in tabloid newspaper format, designed for circulation amongst employees of a firm and usually carrying only staff news, welfare notes and explanation of the company’s policies. Examples are *Bank of England Quarterly* and *Lloyds Bank Review*.

iii. **Independent Periodical**

They cover the whole field of knowledge and range from such academic periodicals as *Nature* to the cheap story and sex magazines. Into this class come also the newspapers, the trade and technical press (2) as well as the great literary reviews.

Examples of this type of periodical are:

*Times of India (Daily)*
*The Caravan*
*The Nature*

3.5.5 **Davinson**, recognised three distinct broad groups of periodicals:

i. Periodicals emanating from learned and professional bodies.

ii. Commercial ventures issued by their sponsors in the hope of financial profit.
iii. House Journals

iv. A fourth group might be sub-divided from group two and termed: Newspaper. (Davinson, 1960).

3.6 Estimation of World Production of Serials

On a decidedly conservative estimate, well over 1,500,000 serial publications have appeared by means of print or near print since the first printed newspaper was issued in 1609. In 1957 the Library of Congress estimated that eleven major lists had 434,000 serial titles under bibliographic control and that 63,000 was the total number that could be safely assumed new serial titles has averaged 13,125 new serial publications a year, so far 1970-2000 an annual increase of 20,000 is a conservative estimate for world production for the last three decades of the twentieth century an average increase of 20,000 titles a year can be anticipator. In the 20th century the figures for periodicals are probably in the vicinity of one fourth of the total for serials of all kinds. (Osborn, 1955).

Table - 3
Estimation of World Production of Serials, 1609-2000

<table>
<thead>
<tr>
<th>Year</th>
<th>Cumulative Number of Serials Published</th>
<th>Annual growth rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>1,500,000</td>
<td>20,000</td>
</tr>
<tr>
<td>1970</td>
<td>900,000</td>
<td>15,000</td>
</tr>
<tr>
<td>1950</td>
<td>600,000</td>
<td>8,000</td>
</tr>
<tr>
<td>1900</td>
<td>200,000</td>
<td>1,900</td>
</tr>
<tr>
<td>1800</td>
<td>10,000</td>
<td>97</td>
</tr>
<tr>
<td>1700</td>
<td>300</td>
<td>3.3</td>
</tr>
<tr>
<td>1600</td>
<td>1</td>
<td>---</td>
</tr>
</tbody>
</table>
(Serial publications: their place and treatment in libraries: Osborn, 1955)


Osborn estimated in the year 1955 that by the year 2000, the cumulative number of serials published around the world would be 1,500,000 with an annual increase of 20,000 titles a year. This estimation is contradictory to the fact available on Ulrich. *The Ulrich International Periodical Directory* by the year 2008 shows 212,140 serials published around the world containing 56,329 serials available exclusively online.

The developments in computer and communication networks, especially World Wide Web have facilitated creation of alternative electronic forms of the convenient paper journal. The E-Publishing has brought a revolution in journals publication, subscription, access and delivery mechanism. Today, libraries are providing electronic access to a wide variety of resources, including indexes, full-text articles and complete journals.

3. 7 E-Journals

The web has influenced the developments of new modes of scholarly communication including various discussion forum, websites and home pages. Although these channels are gaining popularity for communicating and exchanging research results, yet the scholarly journal is regarded as the most preferred medium. The peer review process and archiving of research results for long term availability have helped the scholarly journal to attain a firm position. Due to digital publishing technologies and Internet, the scholarly journals have underwent many changes. The digital technology rose to the give birth the electronic form of journal or e-journal. Apart from publishers, the availability of electronic versions of journals on world wide web, led to the emergence of new and modern e-journal service providers. From bibliographic to full text articles and the citation linking across journals has been another landmark. The digital publication has also curtailed time lag between article submission and its publication.

The e-journal is being called by various synonymous terms like online journal, paperless journal, and virtual journal. A journal can be called as e-journal, if its contents are produced and stored in electronic form, and if these
contents can be scanned in a database and retrieved online, it can be called as online journal. Some experts regard e-journal as the one that is produced, published, and distributed nationally and internationally through some electronic network like internet. (Lancaster, 1995).

3.8 Historical Development

It was in early 1990s when e-journal emerged for the first time on internet. It was in ASCII text format and made available by e-mail as well as in diskette. In 1991, the commercial publishers, Elsevier started the TULIP Project in collaboration with several academic institutions. In 1992, OCLC published “Online Journal of Current Clinical Trials” (OJCCT). It is the first e-journal to include graphics. It was networked, referred electronic only journal i.e. without a simultaneous hard copy form, with full text and graphics available by subscription. OCLC’S “Electronic Journals Online (EJO)” project adopted the World Wide Web (WWW) as a distribution mechanism – which later on came to be known as “Electronic collection Online (ECO)” and it developed specialized viewing software. This made articles as searchable database and with graphical user interface it can be viewed in graphical and ASCII text.

JSTOR (Journal Storage project) started in 1993, which is the first major retrospective electronic archiving project of printed journals. By 1994, the World Wide Web had gained strong hold and now mostly e-journals are now delivered through World Wide Web. (Adhikari, 2000).

3.9 Growth of Online Journals

It is observed that the number of electronic journals gradually increased since 1990 and reached maximum in 2008. The 1989-90 Ulrich’s listed 2131 serials in an online format (either exclusively online or simultaneously with in print version); the 1998 edition contained 8,762. Again in the year 2000 Ulrich listed 14,757 exclusively online journals that rose to 39,900 in the year 2004, and in the year 2007-08 the number of online periodicals touched to 56,329.
A graph is also plotted to understand the growth trend more clearly as shown in Fig- 3. The graph shows that there is an increase in the number of journals which went in an exponential pattern. Data from 1990-2008 has been included in the figure 3.

**Fig. 3: Growth of Online Journals**


3.10 E-Journals: Definitions

*According to Glossary of Librarianship and Information Science*, “an electronic journal is a publication, often scholarly, that is made accessible in a computerized format and distributed over the internet”. (Ali, 2004).

*According to Encyclopediad of Librarianship and Information Science* (1966), A term used to describe “a journal that is published in digital form to be displayed on a computer screen”. (Kent, 1966).

3.11 Characteristics of E-Journals

Electronic journals have undergone a dramatic transformation in style and format since their initial appearance in the early 1990s. Many now have full colour web pages with an attractive and easy to use layout. Despite the fact that layout and presentation of e-journals have greatly improved, and access has been facilitated by the web and online archives, users still may prefer to print hard copies of selected issues and articles to reading from a computer.
Ellen Duranceaue (1995) and colleagues used the following generalizations to characterize the first-generation electronic journals:

i. Based on ASCII text files and used a simple file structure.

ii. Published by individuals or groups of scholars rather than commercial or university presses

iii. Disseminated through e-mail - thus making check-in easy.

iv. Copyright restrictions waived by the publishers

v. Because of “small file sizes, ASCII text format, and lack of access restrictions” local library storage cost relatively little in file space and staff time.

vi. Uncertainty about server and archive stability

In contrast to the first generation, second generation electronic journals are more likely to:

i. Be based on HTML or “specially formatted files” for distribution on the www rather than on ASCII text.

ii. Have more complex file structures (especially for multimedia)

iii. Require more storage space,

iv. Be fee-based rather than free and thus concerned with copyright,

v. Not use e-mail for delivery

vi. Be difficult to check-in due to links to other sources on the internet, and

vii. Be published by university press or commercial publishers rather than individuals or groups of scholars. (Duranceaue, Mannof & Snowden, 1996).

3.12 Types of E-Journals

There are currently two distinguishable types of electronic journals. The first is offline CD-ROM Journals and the second is the Online or Internet based journals. (Woodward & Mc Knight, 1995).
i. Offline CD-ROM Journals

CD-ROM stands for compact Dist Read only Memory, and represents a way of digitally storing large documents of information in a way that is easy to search and retrieve. It is portable and has ability to store graphic data. The most important advantage of a CD-ROM is that if the CDs are on network then the same CD/Database on the CD can be shared by an unlimited number of users, sitting at far off places and at their door step. (Nabi, Singh & Sharma, 2002).

ii. Online or Internet based Journals

Online journals are available through online hosts or vendors and allows remote access. It can be used simultaneously by more than one user. It provides timely access. E-journal supports different searching capabilities and saves physical storage. Though on the surface, these two types appear alike there are several points of considerable difference that one could take note of.

Readers of online journals can be alerted to news appears as issues via electronic Mail, discussion lists or newsgroups. Clearly this is not exclusive to online publications, but such an information service presupposes that the receipts is online and therefore seems to easy more weight if the publication is also online.

Much easier access to latest articles, due to the immediate nature of distribution of Internet online journals as compared to CD-ROM versions which depend on shall mail to reach the customer.

Cost of updating online journals are much less, since the files are simply added or simply replayed on the specific server. Hence users can be made more frequent than CD-ROM version, which can out with more or less the same frequently as the print versions. (Bhattacharya, 2000).

3.13 On the basis of the distribution, Chan (1999) has identified the following type of e-journals:

i. Classic Electronic Journals / Internet Application Electronic Journals

Some of the electronic journals are available through internet applications which are also called as classic journals. Originally they were
Some of the electronic journals are available through internet applications which are also called as classic journals. Originally they were distributed via-e-mail but now available on the web. Access to this category is free of cost.

ii. Parallel Electronic Journals

These types of journals are published simultaneously in both forms print and electronic. The online version may include the full text of journal, only table of contents of selected articles and excerpts from the print version.

iii. Database Model and Software Model

Under the database model articles reside in centralized database maintained by the publisher and subscribers are given permission to access the database and use search software on central computer to locate and download articles. The software model provides in a piece of software, which runs on the Internet connected computer and connects database to the journals central computer. The users can search and download information, which will be sent in proprietary encrypted form. The software would have an expiration date that corresponds with the length of the subscription.

iv. CD-ROM Journals

Commercial publishers have also made journal titles available on CD-ROM. The full text of journals and newspapers has been made available on CD-ROM. In many cases these titles duplicate print titles held by the libraries. Libraries have often subscribed to journals both in print and in microform. (Chan, 1999). Printed and electronic journals differ to each other in many respects. The table 4 given below will provide a clear picture of difference between print and electronic forms.

<table>
<thead>
<tr>
<th>Considerations</th>
<th>Print Journals</th>
<th>Electronic Journals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Format</td>
<td>Standardized</td>
<td>Not standardized</td>
</tr>
<tr>
<td>Equipment (including printer)</td>
<td>No equipment is needed</td>
<td>Requires necessary hardware and software</td>
</tr>
<tr>
<td><strong>Users</strong></td>
<td>Users, who are habitual of using print form, find it easy to use</td>
<td>Users familiar with IT, find it easy to use, while others may require training to use</td>
</tr>
<tr>
<td>----------</td>
<td>---------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>Access to users</strong></td>
<td>Only one user can use a particular issue at a time</td>
<td>It allows multiple users to use it simultaneously, provided the subscription is for multiple usages</td>
</tr>
<tr>
<td><strong>Location</strong></td>
<td>Easy to locate if shelved properly, otherwise there is always a probability that an issue or bound volume, the user is looking for, may have been misplaced or gone for binding</td>
<td>Easy to locate, provided URL, internet or hardware problems do not occur. In India electricity and internet connections often create problems</td>
</tr>
<tr>
<td><strong>Laws governing use</strong></td>
<td>Use is governed by copyright laws</td>
<td>Use is governed by licensing agreement and copyright laws</td>
</tr>
<tr>
<td><strong>Shelving</strong></td>
<td>Every time when an issue or a bound volume is taken from the shelf, it has to be reshelved. Staff is required to do shelving</td>
<td>Shelving is not an issue here</td>
</tr>
<tr>
<td><strong>Archiving</strong></td>
<td>After binding, it becomes strong for effective archiving and is always available for consultation</td>
<td>Archiving is subject to provisions under licensing agreement with the vendor. If it is not renewed, the vendor may not allow access, after the subscription period is over</td>
</tr>
<tr>
<td><strong>Loss and Mutilation</strong></td>
<td>Users can mutilate, steal or misplace it, if an item is mutilated or stolen, it is a permanent loss and the replacement cost is very heavy</td>
<td>It cannot be mutilated stolen or misplaced. This is the main advantage</td>
</tr>
<tr>
<td><strong>Loss of issue</strong></td>
<td>Sometimes, an issue can get lost in post</td>
<td>The problem of missing issues does not arise</td>
</tr>
<tr>
<td><strong>Space for storage</strong></td>
<td>Requires considerable</td>
<td>Physical storage space is</td>
</tr>
<tr>
<td>Storage space which shrinks each year</td>
<td>Saved totally except for space required for hardware</td>
<td></td>
</tr>
<tr>
<td>--------------------------------------</td>
<td>-----------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Photocopying</td>
<td>One can get a copy by using a photocopy machine, keeping in view the copyright laws</td>
<td>One can download an article and get a print out, keeping in view the licensing agreement with the vendor.</td>
</tr>
<tr>
<td>Delivery time</td>
<td>The delivery through surface post takes lot of time especially if the journal is published abroad. However, air delivery saves a great deal of time but it makes the subscription costlier</td>
<td>There is no time lag between its publication and delivery as it is received instantaneously</td>
</tr>
<tr>
<td>Publication schedule</td>
<td>It is slow, inspite of availability of information technology</td>
<td>Publication is fast</td>
</tr>
<tr>
<td>Ordering and other procedures</td>
<td>Procedures like ordering keeping track of current issues, sending missing issues reminders pursuing issues and received in time, sending claim letters for return of payment, binding etc involve lengthy and complex process, as well as heavy cost Application of IT has facilitated all these processes</td>
<td>Many such issues do not occur. There is no need of sending reminders of making claims, binding etc. The procedure for ordering remains the same.</td>
</tr>
<tr>
<td>Access</td>
<td>One can access it only within the library during the hours when the library is open. If the policy allows, a user can borrow an issue or a bound volume and use it in his office or at home</td>
<td>Members can access it from anywhere (home, office or library), or at any time convenient to him, subject to agreement license. However, accessibility is affected if library system is down or there is a server problem with publisher or there is a virus attack on the internet</td>
</tr>
<tr>
<td>Binding</td>
<td>When the volume is complete, it is sent for binding. During that period, the particular volume would not be available for consultation to users</td>
<td>No question of binding. The journal is always accessible for use</td>
</tr>
<tr>
<td>Cost</td>
<td>Often, it costs more</td>
<td>Cost is gradually coming down</td>
</tr>
<tr>
<td>Operating cost</td>
<td>Operating cost is rather high as this includes cost for ordering cataloguing, classification, binding, correspondence for claims for missing issues, shelving, etc.</td>
<td>Less</td>
</tr>
<tr>
<td>Package</td>
<td>Some vendors offer package, covering a group of journals, thus, bringing down the total cost</td>
<td>It is a usual practice for vendors to offer packages at considerably lower cost</td>
</tr>
</tbody>
</table>

(Special libraries in the electronic environment : Singh & Kumar, 2005)

### 3.14 Problems of Periodicals

The importance of periodicals to the researchers cannot be over-emphasized, yet full exploitation of the scientific information still remains in doubt. Socio-economic and political compulsions of a country like India have resulted in a gradual increase of scientific and technological research projects, thus contributing to the phenomena of information explosion. The scientists thus remain the 'producer of information' and at the same time consumer of information. While performing the second part of the cycle, the scientist confronts with the unlimited and ever-growing mass of knowledge, out of which the relevant information has to be scanned through by using the techniques of information handling available at his disposal. (Prashar, 2000).

The other problem is that of time lag between the submission of scientific papers and their publication in the Journals of repute, which in some
cases exceeds a year. In certain fast developing subjects, much of the literature becomes obsolete by the time it is published another problem with the journals is the restriction in the length of papers imposed by the editors. This might cause either omission or curtailment of some of the supporting data and/or background information. This is generally due to the high costs of journals publication.

Another problem related with journal publication is the refereeing system. Most learned journals control quality of the papers they publish by screening through an editorial board. Mostly the submitted papers are sent to an independent "referee" for an authoritative opinion before publication. This helps in eliminating unfair means of publication, but is a time-consuming process.

Advances made in Information Communication & Technology (ICT) have provided solution to the above mentioned problems to a great extent.

CONCLUSION

Periodical publications are primary source of information containing very often the first hand information about the research in progress and development or description of new application or new interpretation of an old theme or idea. It will be an exaggeration, if I say that periodicals form the heart of university/special libraries' collection and enlighten the skilled man power as well as contribute to the development of R&D oriented nation.

Electronic information sources are attracting readers' attention in today's' networked environment. Among these sources e-journals open up many exciting opportunities and potentials for academic and special libraries. Librarians should be aware of the advantages and disadvantages of e-journals and they should identify and balance the facts that would make e-journals a success or failure in their libraries.
REFERENCES


