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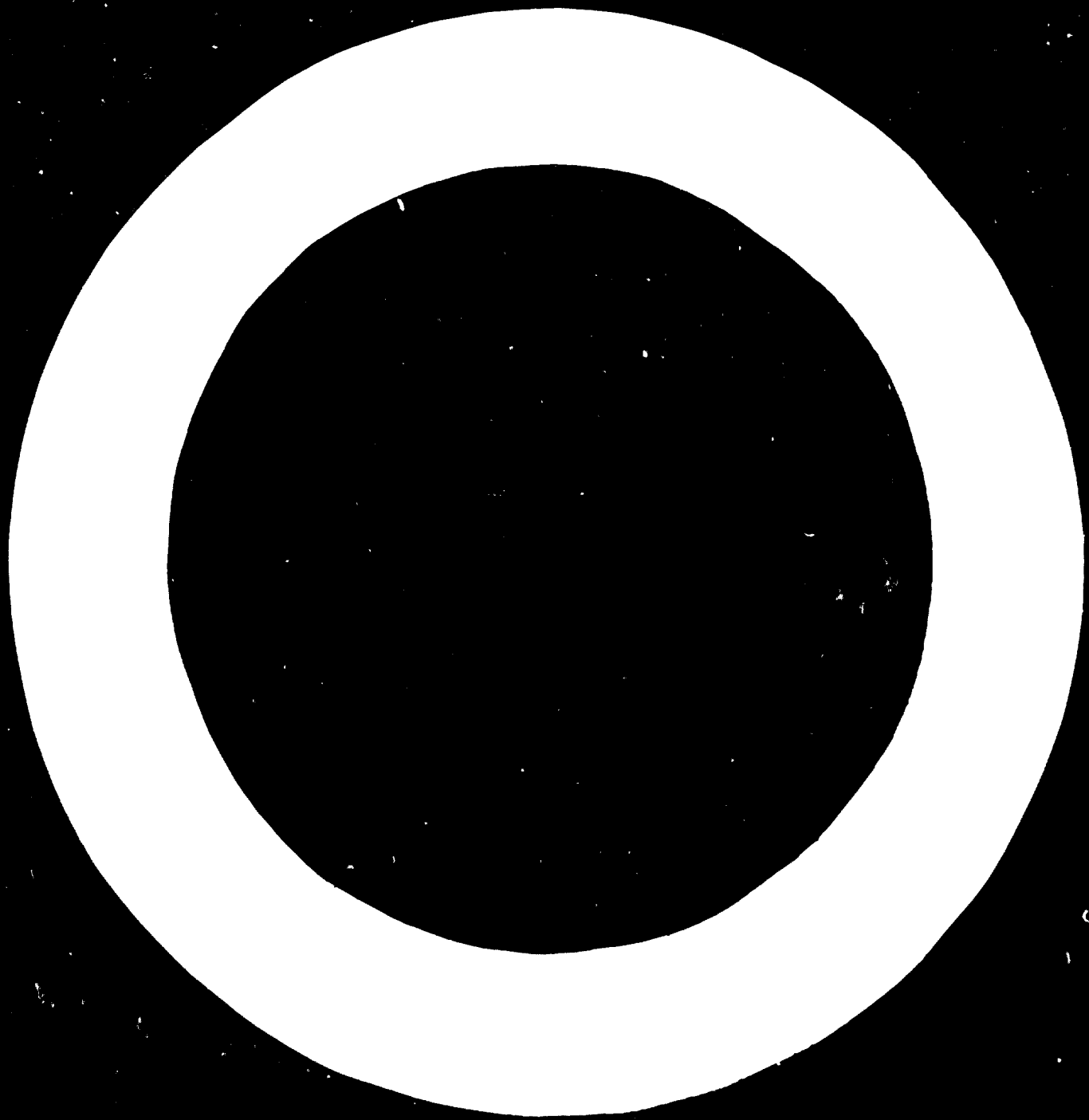
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SHRI RAM INSTITUTE FOR INDUSTRIAL RESEARCH
SOME LESSONS FROM ITS ORGANIZATION AND WORK

By

V.B. Chipalkatti, Director

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THE SHRI RAM INSTITUTE FOR INDUSTRIAL RESEARCH:
SOME LESSONS FROM ITS ORGANIZATION AND WORK.

Chipalkatti, V.B. UNIDO. 1967. 46 p.

We regret that some of the pages in the microfiche copy of this report may not be up to the proper legibility standards, even though the best possible copy was used for preparing the master fiche.

SHRI RAM INSTITUTE FOR INDUSTRIAL RESEARCH
SOME LESSONS FROM ITS ORGANISATION AND WORK

I. HISTORY AND GROWTH

The Shri Ram Institute for Industrial Research (SRI) was founded by Late Sir Shri Ram, a well-known industrialist of India. Sir Shri Ram was the Founder of the well-known group of industries which run under the name of M/S Delhi Cloth & General Mills Co. Ltd. Within the course of about 50 years of active service he was responsible for a tremendous build-up of strength and vitality for this organisation. The DCM group of industries today are within the first five major industrial groups in the country. Their interests extend to a wide variety of fields such as Textiles, Sugar, electric motors, air-conditioning equipment, sewing machines, fans, boilers, ball-bearings, glass, ceramics, potteries, plastics, etc.

Apart from being one of the foremost builders of Indian Industry, Sir Shri Ram was keenly interested in research and education. The Shri Ram College of Commerce, the Lady Shri Ram College for Women and a few high schools in Delhi owe their existence to him. Sir Shri Ram took keen interest in building-up India's research activity and he was one of the very active and senior members of the Governing Board of the Council of Scientific & Industrial Research.

In the latter part of his life, Sir Shri Ram gradually and consciously withdrew from purely business-like activity and spent a considerable part of his time in enriching the scientific and technological activity in India. The establishment of this Institute was the culmination of this activity.. Most of his personal savings were converted into a Trust as early as 1932 and upto 1946, when the value of his savings reached a sizable figure, he launched on the idea of establishing an industrial research institute. A society under the name of the Shri Ram Institute for Industrial Research was established on the 5th Day of October 1940 and the Foundation Stone of the Laboratory buildings was laid on 6th January 1947 by the then Minister of Industries, Sir John Mathai. Appendix A gives details re-

garding the rules and regulations of the Society, the position of the supervising body (Board of Governors), Summary of the Board responsibilities and frequency of meetings, aims and objectives of the Society etc. Presently, the original name of the Society has been changed to Shri Ram Scientific and Industrial Research Foundation with a view to separate the scientific and technological activity of the industrial research institute from all other activities that the Society may deem fit to launch from time to time. The rules and regulations of the new Foundation have now been revised and these are enclosed (Appendix B).

With regard to the growth of the Institute, it may be noted that starting from a modest beginning, the institute has grown over the period of years. Figs. 1 to 3 reflect this in terms of scientific staff, income, and publications and patents. A point worthy of special mention is the steady rise in total activity as well as sponsorship activity. Today almost all the research activity of the Institute is based on sponsorship or contract research.

2. ORGANISATION STRUCTURE

The present organisational structure of the Institute is shown in Fig. 4. It will be noted that the activities of the Institute are administered through a Governing Board with a Chairman, Vice-Chairman and Eight members. The founder himself was the Chairman during his life-time from 1950 to 1962. From 1962 to 1967, the Chairmanship was held by Dr. C.D. Deshmukh, Ex-Finance Minister of India and Ex-Vice Chancellor of Delhi University and a famous and notable public figure in India. Dr. Deshmukh has recently retired and a new Chairman is being elected.

3. SCREENING COMMITTEE

The Governing Board is assisted by the Project Screening Committee which consists of scientists and technologists with wide experience in research and industry. The SRI considers that in a developing economy and under conditions of meagre resources, the choice of projects is the most important consideration in the

successful functioning of the Institute. Except for about 20% free time given to senior personnel, all research activity in the Institute is project oriented. Any suggestion from a scientist or an outside industry is first scrutinised at the Director's level and a formal proposal is made to the Screening Committee for its sanction. The proposal details the aims and objectives of the scheme, the state of existing knowledge, the importance of the scheme in techno-economic terms, the scientific and technical justification for the scheme in relation to the total objectives of the Institute and in relation to the availability of men, the financial and personnel commitments, the plan of work, rough estimate for the time required for the completion of the project and other relevant details. If some probing work is required for establishing some doubtful scientific, technical or economic facts of the case, the scientists are encouraged to launch on short-range probing projects so that they do not feel curtailed by administrative and other restrictions inherent in getting their scheme approved by the Screening Committee.

4. FIELDS OF ACTIVITY AND RESEARCH POLICIES:

The beginnings of research activity of the Institute were made in a very small way. One Deputy Director (in charge), two Chemical Engineers and a Textile Chemist with about 8 Research Assistants formed the nucleus staff in 1950. The projects chosen were on a random basis depending on the interest and capacity of the group. The manufacture of Industrial Chemicals for Textiles, Sugar refining, Calcination problems in the chemical industry, and the manufacture of rock wool... these were some of the projects on which initial efforts were expended. The approach was highly utility biased but some of the work done during 1950-1960 produced results which enabled new products and processes to be introduced in the Indian Industry. The work built up a name for the Institute as an organisation which was highly utility oriented.

The very success of the Institute created a number of problems. It was found that in most cases the parties coming forward to utilise the Institute's work were financially not very sound and technologically not having adequate

experience. The meagre financial resources of the Institute were strained and it was also apparent that what was involved in most cases was the question of building new factories for entrepreneurs who were not adequately equipped either with adequate financial resources or technical and engineering expertise.

During 1958-1959 therefore an intensive rethinking had to be done. The Institute was totally re-organised into two major Divisions viz. The Textile Division and the High Polymer Division. A third and small section was maintained to take care of past commitments and it was named as the Miscellaneous Section. The Chemical Engineering Division was completely scrapped though this meant a considerable amount of dislocation. It was also felt that the Institute was "spreading its butter too thin" and was taking projects on too many diverse fields with consequent dilution of effort. A Screening Committee was simultaneously created and approval of all work was formalised and it was made compulsory that all work should be presented to the Screening Committee in the form of well defined projects. A reference to this point has already been made earlier. The present organisation chart is more or less based on this reorganisation, though the Miscellaneous Industries Section has now been further defined into a more specialised division viz. the Chemical Technology (Organic) Division.

Experience during the last six years after the reorganisation has clearly vindicated the approach behind this drastic reorganisation. The SRI has even moved a step further. It has been felt that, by and large, projects in which the research content is minor and in which development, design and engineering content is bigger, should not be taken up until a sponsor body was available and until the same is ready to undertake the financial and technical burdens implicit in such projects.

This reorganisation of the activity and the changes in the research policy have had a clear impact on the pattern of SRI activity. Firstly, there is now a far greater content of "Research" and a correspondingly lesser content of "design" and "engineering activity". Secondly, though the entire activity of the Institute is based on "sponsored research" or "contract research", only such projects are under-

taken where a sponsor willing to spend on research activity rather than for mere "knowhow collection" is readily available. Thirdly, the staff has been able to concentrate more on original contribution rather than engage themselves in repetitive jobs involving 2nd rate or 3rd rate investigations.

As will be seen from the organisational chart in fig. 4 the Institute also provides for a small nucleus on physics and instrumentation and a small nucleus for testing and analysis. These two sections primarily help the research divisions but they also help small and medium size industries in the neighbourhood of Delhi catering to their analytical needs.

There is one more significant point regarding the organisational structure of the SRI. The engineering and services division does not have a full fledged mechanical workshop; apart from a small lathe and a few tools there is no sophisticated engineering equipment. This is contrary to usual practice but this has been found to be a workable proposition. Many of the small engineering jobs required by the research scientists are farmed out to local engineering firms (small workshops) which are not only willing but eager to participate in the Institute's requirements. One could say with some degree of satisfaction that many small engineering workshops have built their business and career through their contacts at the SRI.

It should also be noted that the Institute now discourages activities which could be described merely as technical services. Here again the intention is to direct as much of the Institute's energies as possible to research rather than anything else.

As stated before, in the early years, the Institute undertook projects in which the research content was low, but the content of development activity was more. The work was highly product-oriented and aimed at catering to small and medium size entrepreneurs engaged in the manufacture of chemicals and auxiliaries. These projects did help to build an image of the Institute as an organisation

which was keen on utilising the work. The reorganisation in 1960 and the insistence on high research content has now changed the research climate and one is today able to notice an international level of research activity though the projects chosen are still very much at the level of national needs. In the opinion of the present writer, this change in policy has resulted in a greater depth in thinking and perhaps the quality of research contributions will be more and more in tune with international levels, in times to come.

5. RESEARCH IN RELATION TO SELF-HELP:

The last 18 years in India have generated a great controversy in regard to the approach to the organisation of Indian science and technology. There is one school of thought which feels that academic and fundamental research is overdone in India and that utility biased activity - even if it means mere know-how collection and not research - ought to be undertaken on a large scale in India. In keeping with this thought as many as 30-40 national laboratories have been established in various fields of science and technology. The protagonists of this line of thought would like the Government and the Indian entrepreneur to make greater use of these labs and help build vitally needed self-help in the establishment of new industry. There is another school of thought, however, which strongly feels that this approach is wasteful and time-consuming. They would rather like to buy the know-how on the best possible economic terms and see that the industries look after their own needs of research and development. Universities and research institutions financed by public funds, according to them, should engage themselves in long range fundamental and applied research projects where the aim would be to gather skills and expertise of a high level that the approach of their opponents has given rise to mediocrity and that it is highly essential that a complete re-orientation towards excellence of performance takes place. In their view this would automatically take care of utilitarian objectives. Good and excellent work is more likely to generate confidence and enthusiasm in preference to third rate utility biased work.

It is too much here to say which of the two views is really correct, but the experience at SRI would point out that both the approaches have their own value and significance. What is necessary to realise is that the primary responsibility of building industrial self-help should be taken by those who build industries rather than those are engaged in research Institutes not having close and formal links with the Industry.

6. PERSONNEL MANAGEMENT:

The Institute's personnel are appointed after widely advertising the need and after a specially constituted Interview Board have carefully screened the applicants. At present it is very difficult to attract men with adequate industrial and research experience to S.R.I. This is because the salary scale and other conditions of employment offered by industry are far better than those offered by organisations like SRI or public Institutions like national laboratories.

7. OPERATION ON PROJECT TEAM BASIS:

Enough has been said in the foregoing as to how all work in the Institute is project oriented. Team operation in all research activity is highly encouraged. Successful applied research projects particularly at the development stage require the help of scientists of more than one discipline and it is not unusual to find project teams with as many as 8-10 members in 2 or 3 disciplines. In the absence of experience, it is felt that team work by scientists of different disciplines has obvious advantages and every possible attempt is made to secure such team work in the Institute.

8. CONTRACT RESEARCH:

Experience at SRI has clearly brought out a point that may be of interest to all developing countries. Most sponsorships in SRI have been supported by public funds. By and large, private industries have come forward to use the research results but not to initiate and support applied research. The SRI being a private

trust owing its existence to donation from a private individual may have something to do with this reluctance. But, lack of a proper industrial base in the nation, the planned structure of licensed industry without adequate competition, the existence of a seller's market etc., all seem to act as dis-incentives to Industrial Research. There is no doubt however that pressures will be built in all developing societies for organising more and more research and it is expected that the situation will improve with time. The point to be stressed here is the great need to co-ordinate research policies at National as well as at unit levels in all public or private establishments engaged in research activity. Research scientists in developing countries must also realise that obtaining contract for research in their own fields is a matter of generating confidence in the sponsor and this can only be done if sufficient funds and time are provided for exploratory work on the one hand and if there is a constant insistence on quality and excellence on the other.

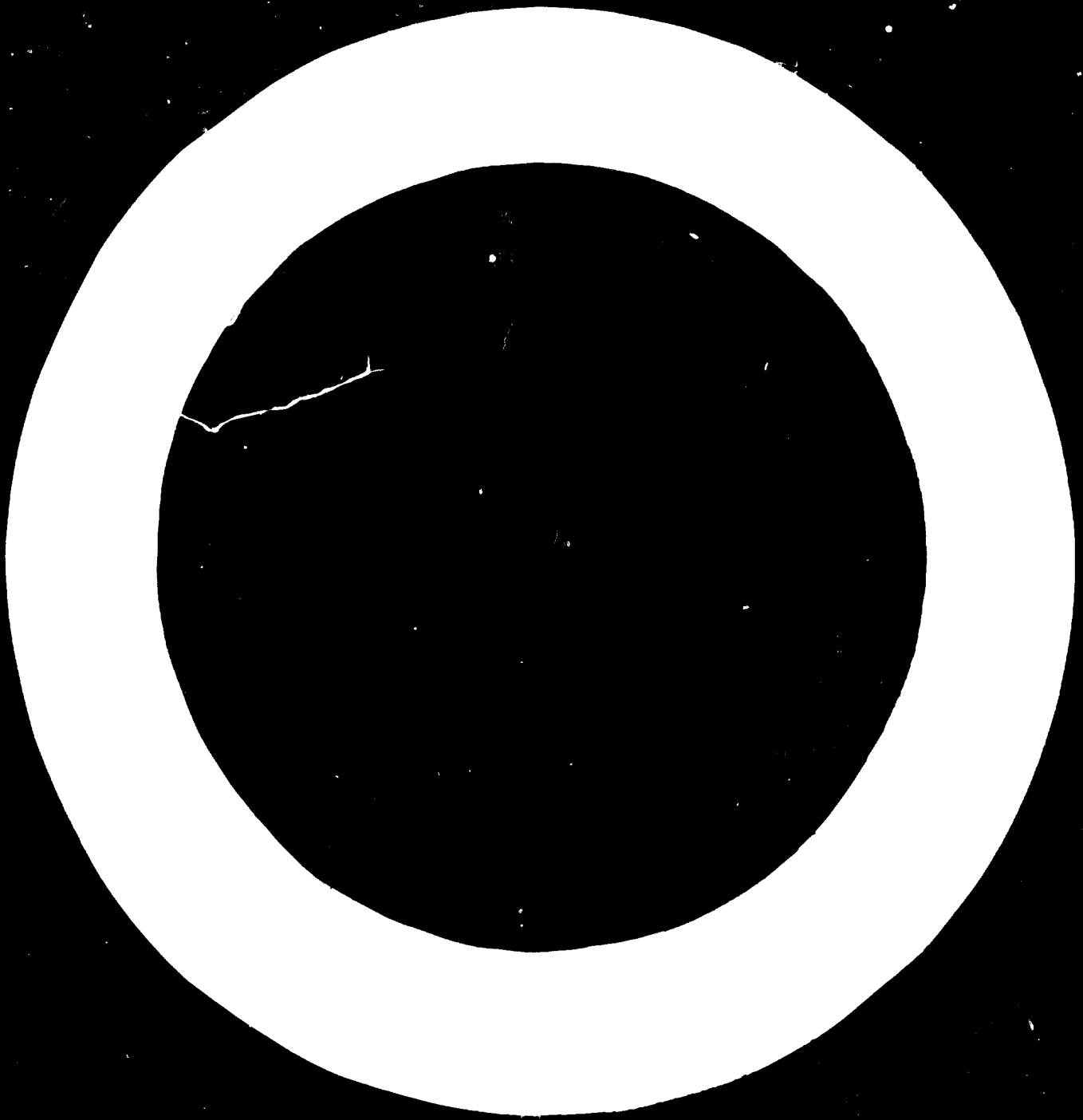
CONCLUSIONS:

Based on S.R.I. experience and on what has been said in the foregoing the following conclusions may be of interest to those organising Industrial Research in Developing countries: -

- I) Industrial Research activity in developing countries should be started in a small way in the beginning and should be allowed to grow round successful men and their work.
- II) Research, development, design and engineering have all to play their effective part in the successful culmination of an applied research project. Development and engineering activity requires skills other than research. Such activity is 10 to 20 times more costly. Over-enthusiasm in the claims of research may lead to a situation of frustration and dependence which must be avoided purposively and deliberately.
- III) The absence of a wide industrial base, and skills and experience required to translate research results into industrial practice is a vital point to

be stressed in a developing economy. Slogans of self-reliance without adequate personnel and experience are likely to affect the research climate in an undesirable manner.

IV) The idea of undertaking utility biased research can be overdone in a developing country. It is easier to launch on utility oriented projects but it is very difficult to complete them under the given limitations of time and financial targets. Just as it is necessary for a developing country to build an infra-structure of Industry, it is also necessary to build an infra-structure for both applied as well as fundamental research. Modest and well conceived steps in these directions - however small and less eye-catching - might be deemed as more valuable and fruitful than over-ambitious and impractical plans for "Self sufficiency through indigenous research"



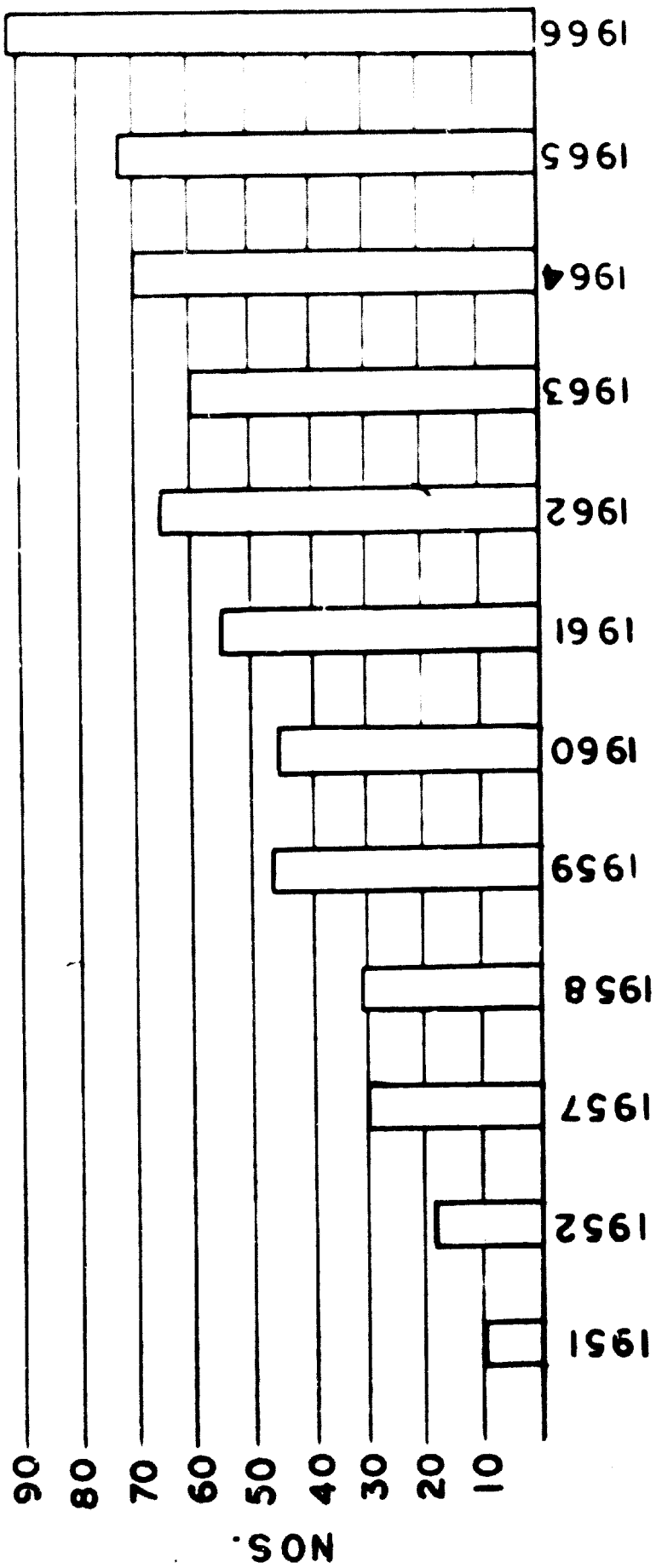
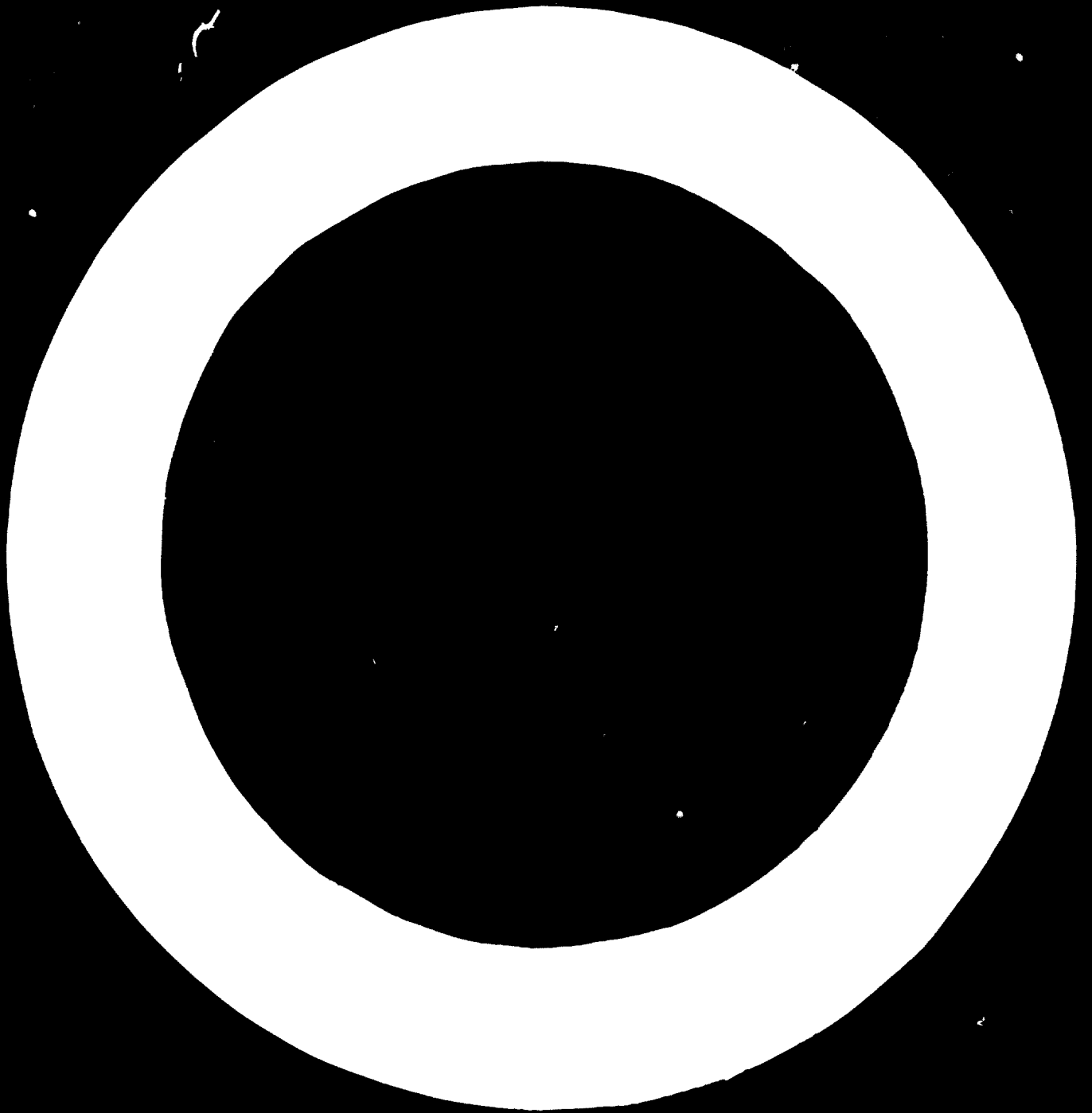


FIG. I.
RATE OF GROWTH IN TERMS OF SCIENTIFIC STAFF



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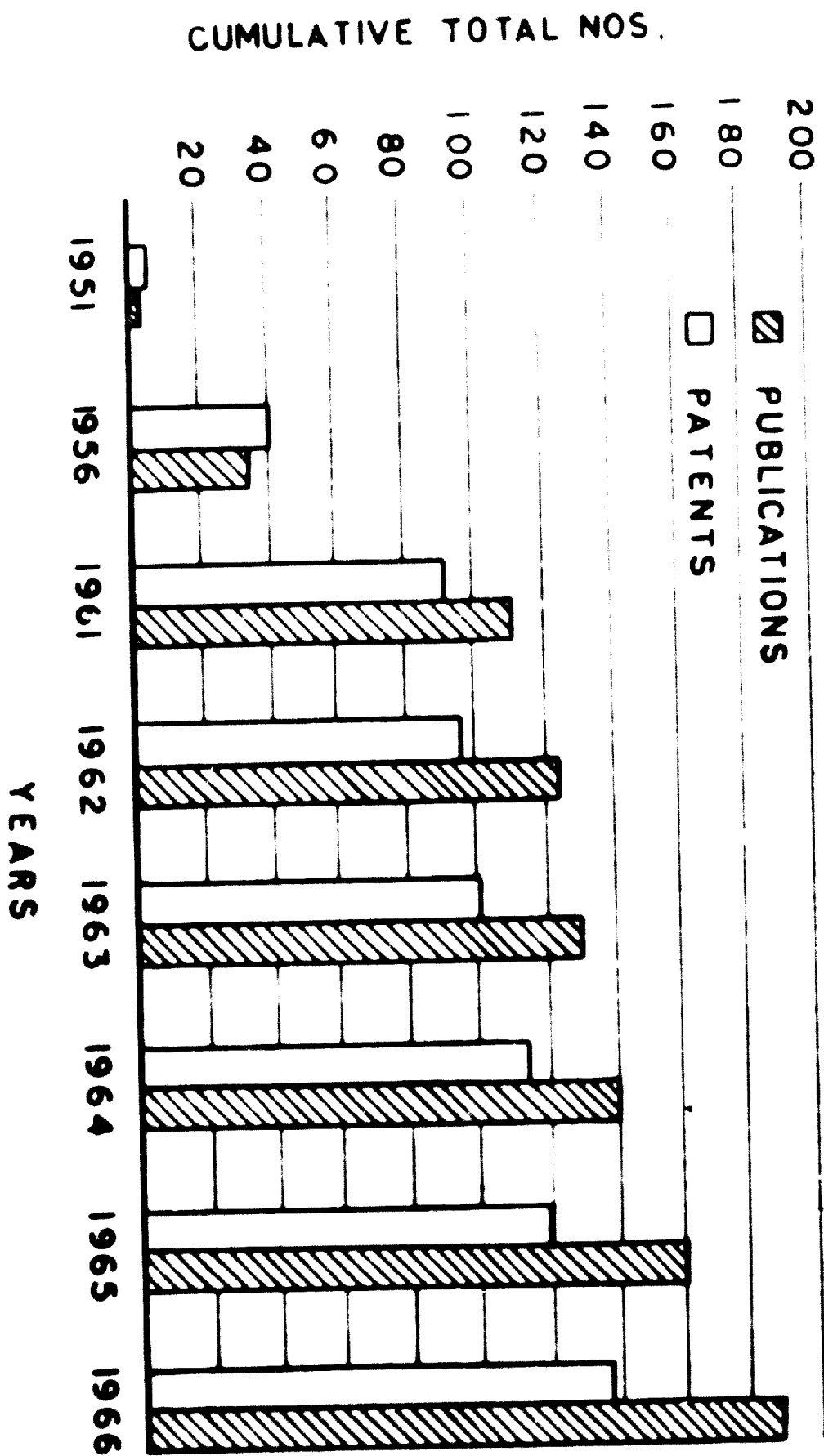
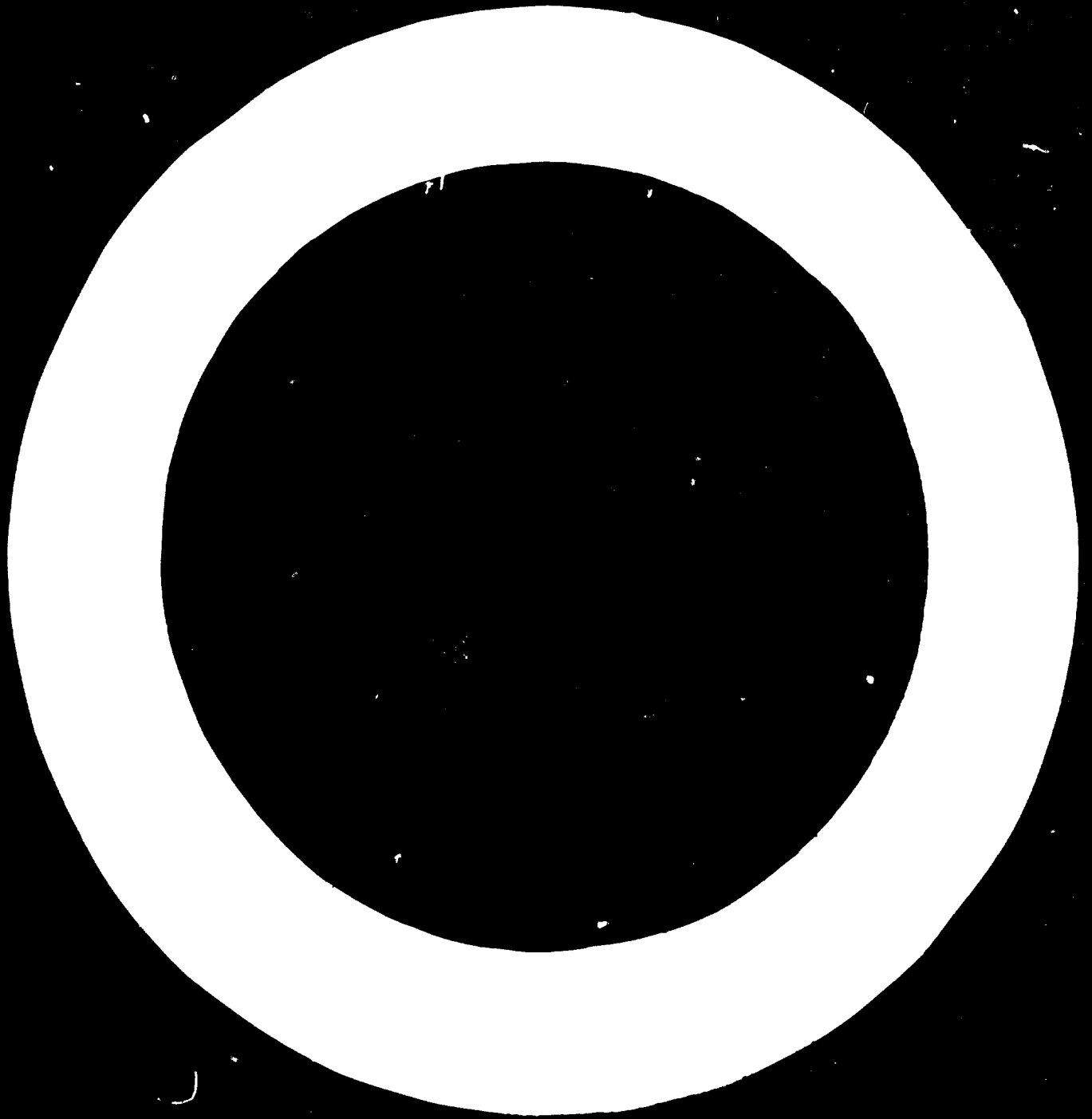


FIG. 2.

PUBLICATION AND PATENTS FROM 1951 TO 1966.



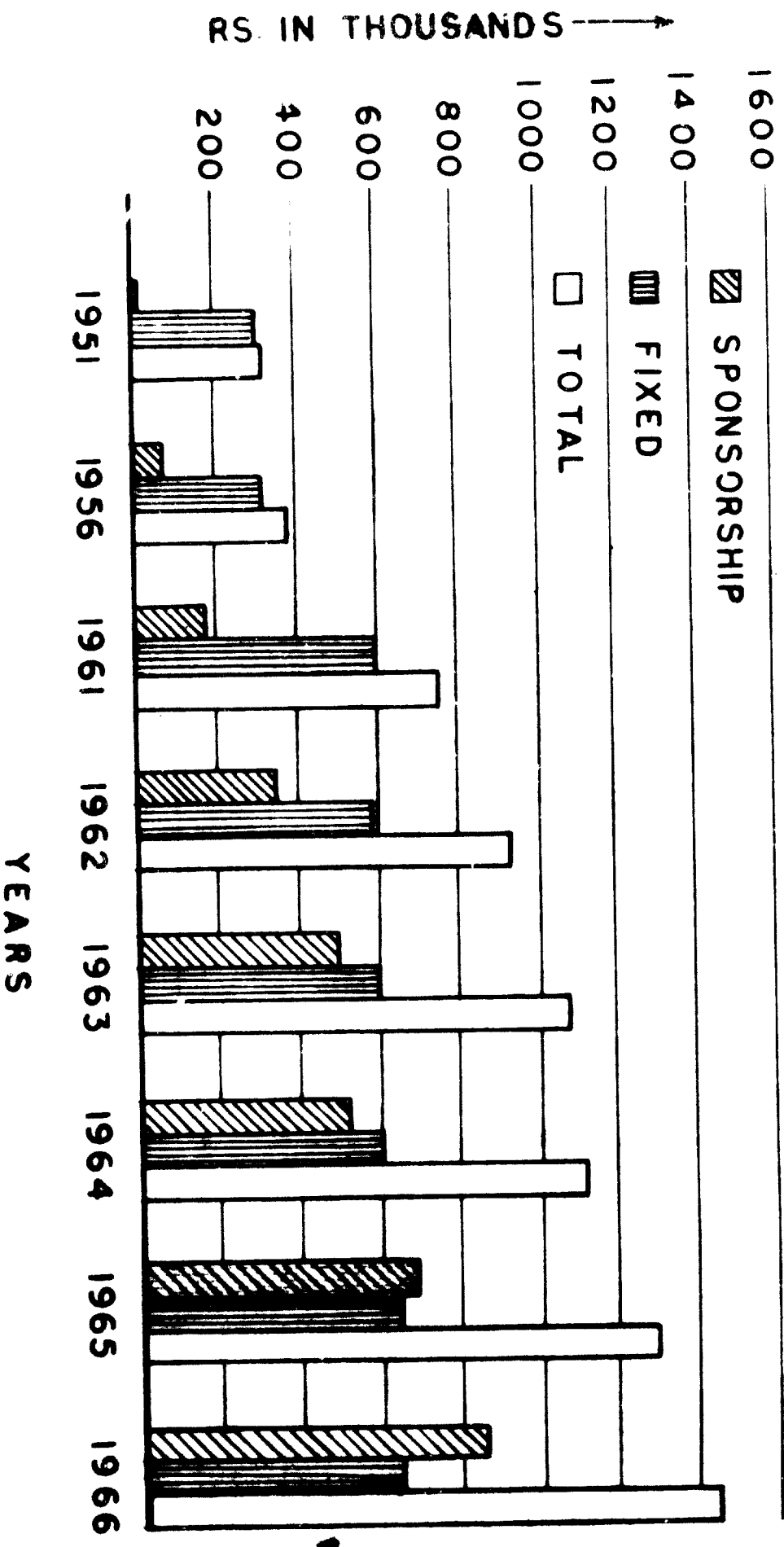


FIG.3.

INCOME PAT TERN OF SRI FROM 1951 TO 1966 SHOWING THE TREND OF GROWTH IN TERMS OF SPONSORSHIP INCOME

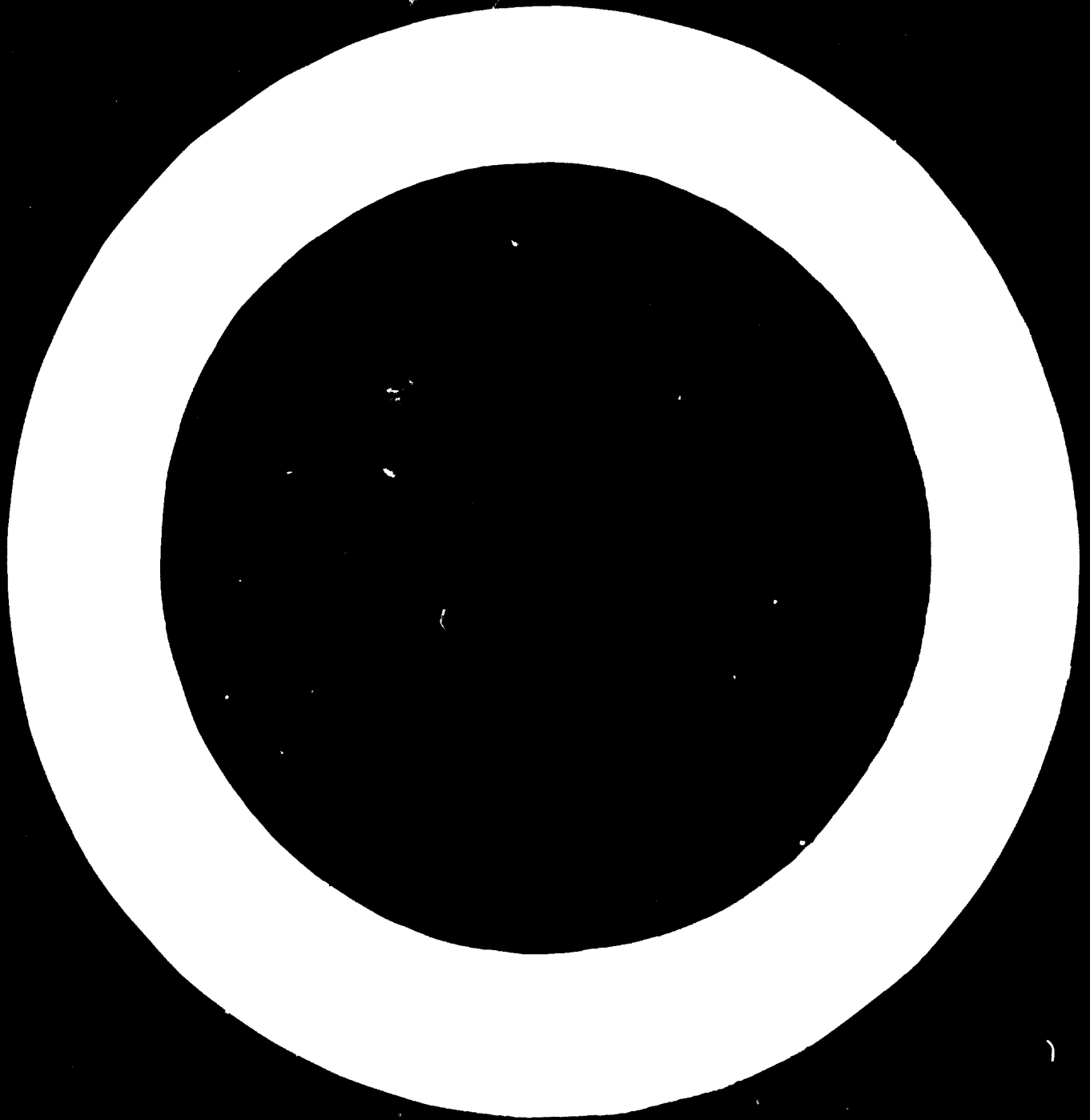
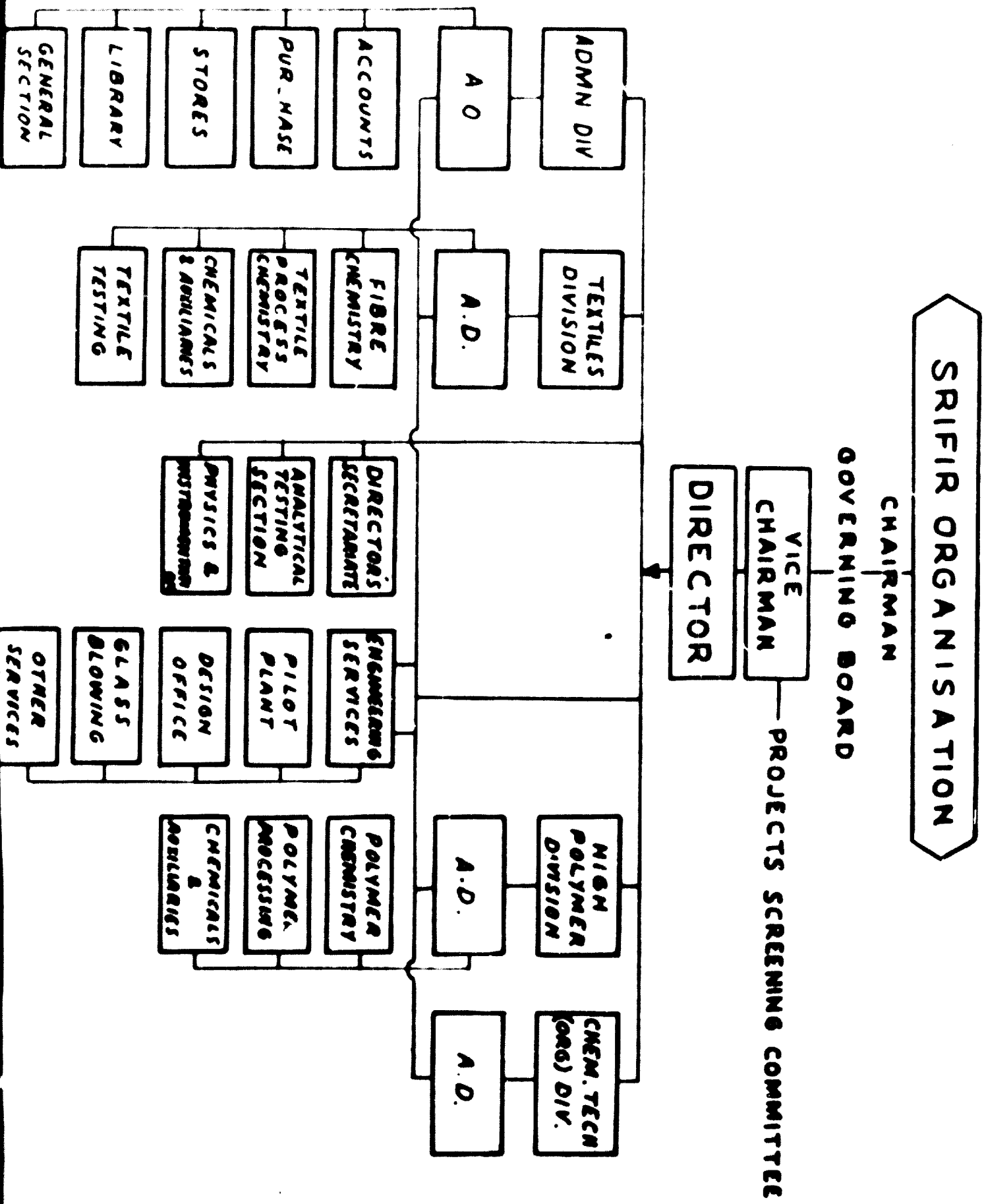
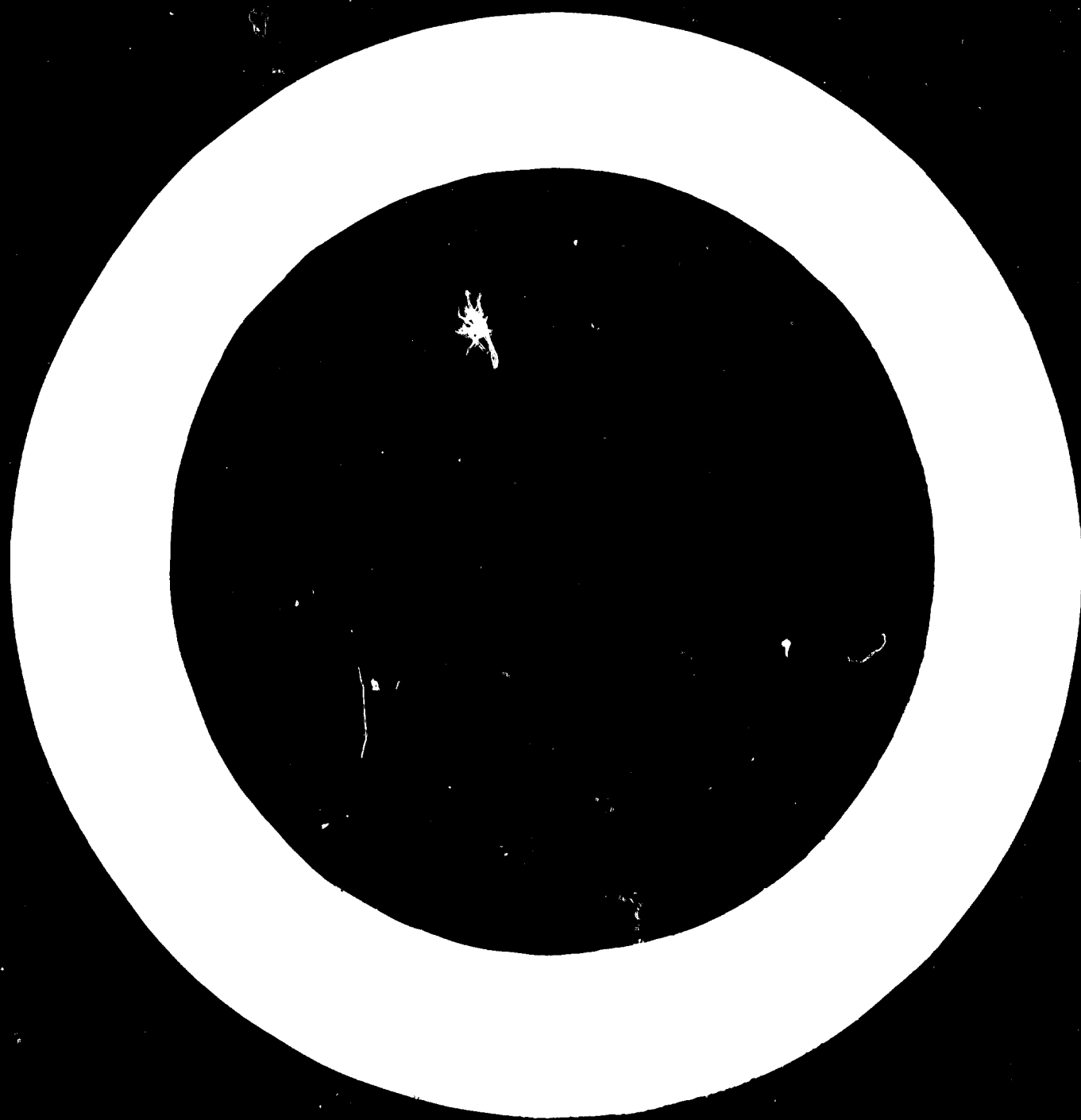


FIG. 4



APPENDIX 'A'

Memorandum of Association and Rules and Regulations of
SHRI RAM Institute for Industrial Research, Delhi



COAT OF ARMS

Certificate of Registration of Societies

ACT XXI OF 1860

No. - of 1940-1941

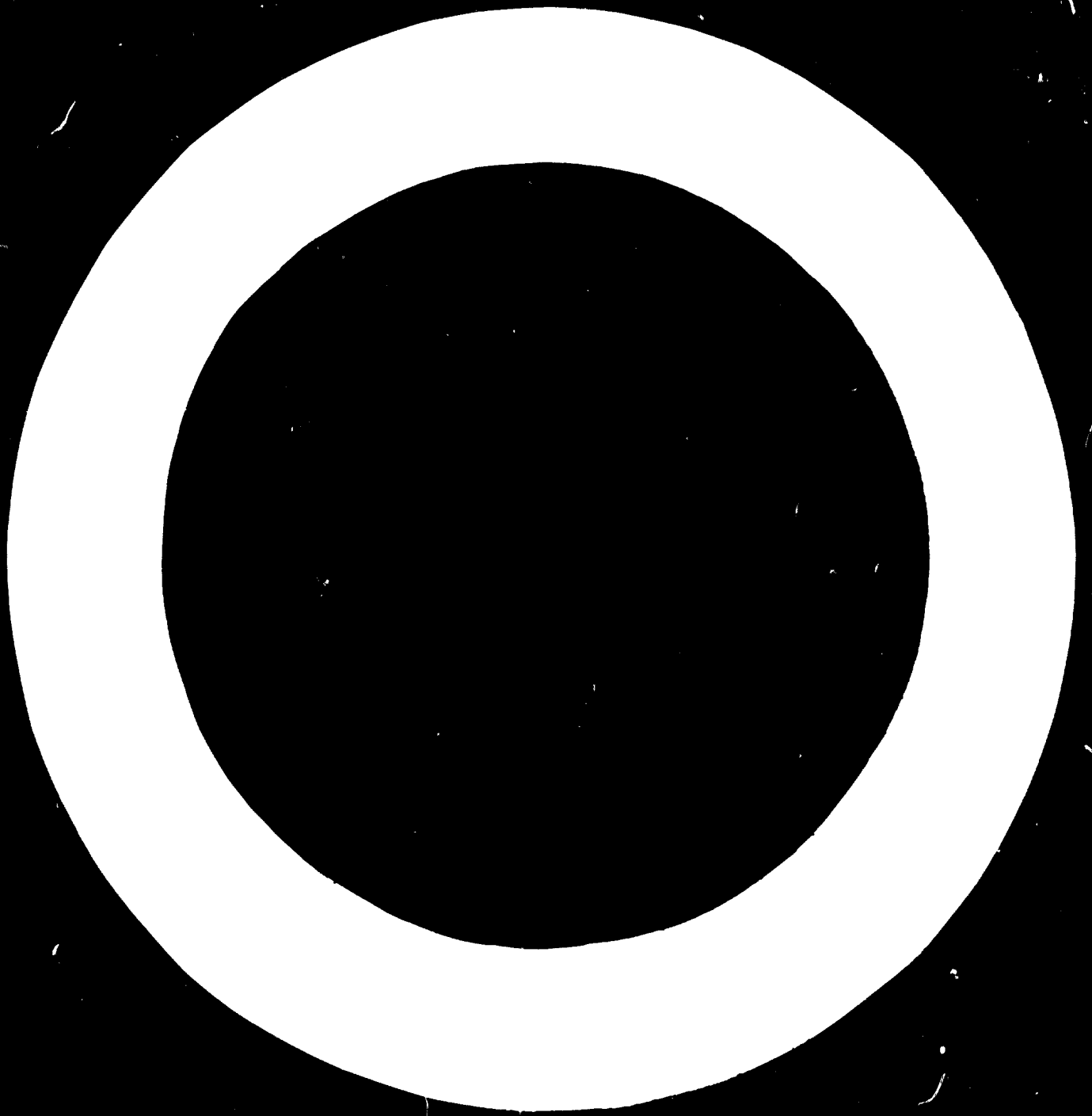
I hereby certify that the SHRI RAM INSTITUTE FOR INDUSTRIAL RESEARCH, DELHI has this day been registered under the Societies' Registration Act, XXI of 1860.

Given under my hand at Delhi this fifth day of October One thousand nine hundred and forty.

Fee : Rs 50 paid

Seal of the
Registrar of
Joint Stock
Companies, Delhi

Sd.
Registrar of Joint Stock Companies,
Delhi.



MEMORANDUM OF ASSOCIATION

OF

Shri Ram Institute For Industrial Research, Delhi

- I. The name of the Society is the Shri Ram Institute for Industrial Research, Delhi, hereinafter called the Institute.
2. The objects for which the Institute is established are: -
 - (a) Promotion of scientific investigation in general and in relation to manufacture, commerce and industry in particular;
 - (b) Assisting in the foundation and development of new industries and existing industries;
 - (c) Utilization of indigenous products of India, both vegetable and mineral;
 - (d) Carrying on fundamental research;
 - (e) To act as a Test House and as an Information and Advice Bureau;
 - (f) Building and/or maintaining and/or aiding laboratories, pilot plants, libraries, reading rooms and other institutions for the promotion of such scientific investigation and research;
 - (g) Grant of scholarships;
 - (h) Promotion of post-graduate studies;
 - (i) Co-operation with the University of Delhi and other established Universities or educational bodies for advancing the objects of the Institute;
 - (j) Taking over the assets and/or activities of Lala Shri Ram Charitable Trust Society and of any other person or body for the advancement of the objects of the Institute;
 - (k) Administration of endowments having for all or any of their objects the promotion of scientific investigations as aforesaid;

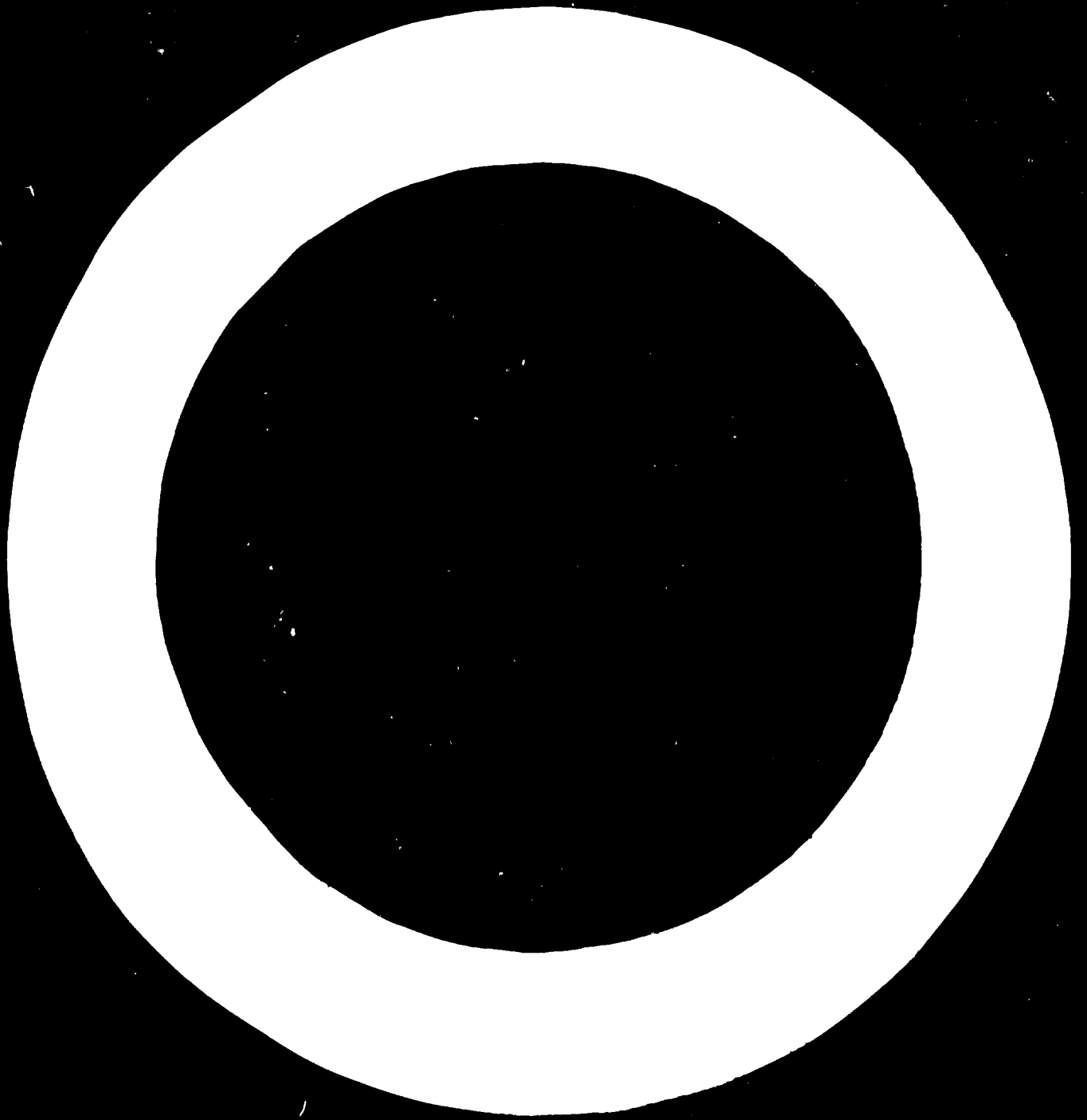
Note: These Memorandum of Association, and Rules and Regulations, were adopted by the Governing Body of the Institute vide Resolution No.8 dated December 14, 1950

- (l) Collection, management and disbursement of funds raised or to be raised or to be raised for all or any of its objects;
 - (m) Purchase or acquisition on lease or in exchange or by way of gift or otherwise of any real or personal or immovable or movable property and any rights privileges necessary or convenient for its purposes;
 - (n) Establishment and maintenance of Provident Funds for the benefit of the employees of the Institute;
 - (o) Doing of all such things as are incidental or conducive to the attainment of the above objects or any of them or which may be conveniently done along with or as subsidiary to the said objects.
3. The names, occupations and addresses of the persons who are members of and form the Governing Body of the said Institute are as follows: -
1. Sir Shri Ram,
Mill-owner,
22, Curzon Road, New Delhi
 2. Ch. Mukhtar Singh,
Service,
Daurala Sugar Works, Daurala, Dt. Meerut
 3. Sir Padampat Singhania,
Mill-owner,
Kamla Tower, Cawnpore
 4. Lala Shankar Kal,
Mill-owner,
Shankar Nivas, Curzon Road, New Delhi
 5. The Hon'ble Sir Girja Shankar Bajpai,
K.B.E, C.I.E., I.C.S.,
Member of Viceroy's Executive Council,
2, King George's Avenue, New Delhi.
 6. N.R. Pillai Esq., C.I.E., C.B.E., I.C.S.,
Government Service,
11, Racecourse Road, New Delhi

7. The Hon'ble Sir Maurice Gwyer, K.C.B., K.C.S.I.,
Chief Justice of India,
19, Akbar Road, New Delhi.

4. A copy of the Rules and Regulations of the said Institute is filed with this Memorandum of Association and the undersigned being members of the said Institute do hereby certify that such copy of such Rules and Regulations is a correct copy of the Rules and Regulations of the Institute.

As witness our several and respective hands and signatures this 2nd day of August, 1940.



RULES AND REGULATIONS

OF

Shri Ram Institute For Industrial Research, Delhi

1. (a) The members of the Institute shall consist of the following: -

- (1) The signatories to the Memorandum of Association who shall be the first members of the Governing Body of the Institute and shall be members of the Institute as long as they continue to be members of the Governing Body; Members of the Institute
- (2) All persons chosen as members of the Governing Body shall ipso-facto be members of the Institute for the tenure of their office as members of the Governing Body;
- (3) Such other persons as may be appointed by the Governing Body to be members of the Institute, though they are not members of the Governing Body so however that the total number of members of the Institute including those on the Governing Body shall not at any time exceed 15. Such persons shall remain members of the Institute for a period of three years, unless they resign earlier or are removed from membership by a vote of three-fourths in number of members of the Governing Body of which due notice has been given to the members.

(b) Members of the Institute shall sign a roll to be kept for the purpose.

RIGHTS & POWERS OF THE MEMBERS

2. A member of the Institute shall be entitled to: -

- (a) attend and vote at all general meetings of the Institute; Rights of members
- (b) receive copies of the reports and proceedings as provided by Regulation 5 hereunder.

Power to alter
rules

3. A general meeting of member of the Institute shall have power to alter, amend or delete any of these rules and regulations by a three-fourth majority provided that due notice of such proposed alterations etc. is given to all the members of the Institute.

GENERAL MEETINGS

General
Meeting

4. A General Meeting of members of the Institute shall be held once at least in every calendar year, not later than three months from the date of close of the financial year of the Institute. Such meetings shall be called Ordinary General Meetings; all other general meetings shall be called Extraordinary.

Annual General
Meeting

5. Before an Annual General Meeting, the Governing Body shall cause to be prepared for their consideration (a) a statement of accounts of the Institute in such forms as the general body may direct, or, in the absence of such directions, as the Governing Body may deem fit, duly certified by the Auditor, in respect of preceding financial year of the Institute and (b) a report of the activities of the Institute. At the Annual General Meeting in each year the said account and report shall be submitted to the members.

Proceedings
of General
Meetings

6. (a) General Meetings shall be convened by the Registrar by order of the Chairman of the Institute and shall be held on such date at such time and place as the Governing Body may appoint;
- (b) Ten days notice shall be given of the meeting in such manner as the Governing Body may decide;

- (c) Every question submitted to a General Meeting shall be decided by majority of votes, and, in case of equality of votes, the Chairman shall have a second or casting vote;
 - (d) The Chairman of the Institute, if present, shall preside at all General Meetings. In the Absence of the Chairman, the members present may elect any one of them to be the Chairman of the meeting;
 - (e) Until otherwise decided at a General Meeting, the quorum of a General Meeting shall be one-third the total number of members of the Institute;
 - (f) A declaration by the Chairman that a resolution has been carried or lost, and any entry to that effect in the books of proceedings of the Institute shall be conclusive evidence of that fact;
 - (g) If at a meeting the necessary quorum is not present within 15 minutes of the time of commencement of the meeting, the same shall stand adjourned to the same day next week at the same time and place, and at such adjourned meeting the members present shall be competent to transact the business of the meeting irrespective of whether a sufficient quorum is present or not.
7. (a) The Registrar of the Institute will call an Extra-ordinary General Meeting of the members of the Institute if a requisition signed by at least four members is sent to him;
- (b) Ten days notice shall be required for such a meeting;
 - (c) All the rules and regulations applying to General Meeting will *mutatis mutandis* apply to Extra-Ordinary General Meetings.

Extra-ordinary
General
Meetings

FOUNDER'S RIGHTS

Founder's Rights

8. Sir Shri Ram is the Founder of the Institute. He shall be the Chairman of the Governing Body of the Institute during his life time and until such time as he voluntarily resigns and shall be entitled to appoint his successor to be a member of the Governing Body after his death or retirement. Such successor shall be similarly entitled to appoint his own successor, and so on, provided always that the successor is a member of Sir Shri Ram's family in the direct male line of descent. He or his successor, as the case may be, shall be entitled to nominate a member of the Governing Body.
9. Notwithstanding anything hereinbefore contained, no amendment shall be made to the regulations touching the rights of the Founder or his successor or his nominee without the approval of the said Founder or his successor on the Governing Body.

GOVERNING BODY

Constitution of the Governing Body

10. The Governing Body of the Institute shall consist of not less than seven and not more than ten members as follows: -
 - (a) The founder Lala Shri Ram during his life time or until he voluntarily resigns and after the founder's resignation or death, as the case may be, the founder's successor to be appointed by him. Such successor shall be a member of Sir Shri Ram's family in the direct male line of descent;
 - (b) One member to be nominated by the founder or his successor;
 - (c) Two members nominated by the Government of India;

- (d) One member nominated by the Federation of Indian Chambers of Commerce and Industry;
- (e) One nominee of the Board of Scientific and Industrial Research;
- (f) One member nominated by the University of Delhi;
- (g) The Governing Body may nominate upto two members, if they think fit, and
- (h) The Director of the Institute (ex-officio).

POWERS OF THE GOVERNING BODY

- 11. The management of the properties, investments and affairs of the Intitute shall vest in the Governing Body of the Institute. Powers of the Governing Body
- 12. Any reinvestment of funds shall be in real property or in trustee securities or in such other manner in special cases as may be decided by the Governing Body.
- 13. Without prejudice to the general powers conferred on the Governing Body, it is hereby expressly declared that the Governing Body shall have and exercise the following powers subject to the control and supervision of general body of members of the Institute, that is to say: -
 - (a) To accept donations, subscriptions and endowments on such terms and subject to such conditions as the Governing Body may think proper;
 - (b) To accept grants from the Central Government, Indian States, Universities, Industries of Associations, on such terms and conditions as may be mutually agreed upon;
 - (c) To purchase, acquire, dispose of or mortgage or otherwise deal with the properties of the Institute vested in them for the time being;
 - (d) To borrow money;

- (e) To sell, improve, manage and develop all or any part of the property and rights of the Institute;
- (f) To appoint by resolution or by power of attorney one or more of their members to execute and register documents on behalf of the Governing Body;
- (g) To control and administer the property and funds of the Institute; to invest any of such moneys and from time to time to realize and vary such investments;
- (h) To appoint, and, at its discretion, remove or suspend officers, clerks, servants and other employees of the Institute, and from time to time to determine their powers and duties and fix their salaries or emoluments;
- (i) To associate any benefactor of the Institute in the capacity of Patron, Vice-Patron, Fellow or in any other honorary capacity;
- (j) To pass the accounts of the Institute, and consider any recommendations made in regard thereto at a General Meeting;
- (k) To appoint an Advisory Council as provided hereinafter with such functions and powers as the Governing Body may think fit, to prescribe or confer;
- (l) To delegate any of its powers to sub-committees consisting of such members of the Governing Body as it thinks fit;
- (m) To delegate any of the powers of the Governing Body upon such employees of the Institute or others as the Governing Body may think fit;
- (n) To enter into contracts binding on behalf of the Institute and authorise an Officer or Officers of the Institute to execute such contracts;

- (o) To frame bye-laws regarding matters concerning the working of the Institute which are not repugnant to these regulations.
- (p) Generally to do such things as it may consider necessary or expedient for the purpose of carrying out the objects of the Institute.

ROTATION OF MEMBERS OF THE GOVERNING BODY

- 14.(a) The members of the Governing Body, other than the founder or the founder's nominee and the ex-officio member, shall hold office for three years from the respective dates of their appointments and shall be eligible for re-appointment; **Rotation of Members**
- (b) Notwithstanding the provisions of the above Regulation 14 (a), a member of the Governing Body shall continue to function as such after the termination of his term of office until his successor is appointed;
- (c) In case a member of the Governing Body (other than the ex-officio member) retires before the term of his appointment as aforesaid has expired, the authority nominating him will be requested to make a fresh appointment to the vacancy caused by such retirement. In case of death of any member before his term of office as aforesaid has expired, the authority nominating him will be requested to make fresh appointment to the vacancy caused.

PROCEEDINGS OF GOVERNING BODY MEETINGS

- 15.(a) The meeting of the Governing Body shall be convened by the Secretary at least once in six months, so, however, that not more than 6 months elapse between any two meetings; **Proceedings of Governing Body Meetings**
- (b) The meeting of the Governing Body may also be called by the Secretary on the written requisition of any of its three members;

- (c) Ten days notice shall be given of the meeting in such manner as the Governing Body may decide, but a meeting of the Governing Body may be called at a shorter notice if the members of the Governing Body unanimously agree to waive the objection;
- (d) Until otherwise determined by the Governing Body, one-third of the members of the Governing Body shall form a quorum;
- (e) The Chairman, if present, shall preside at all meetings of the Governing Body. In the absence of the Chairman, the members present may elect any one of them to be the Chairman of the meeting;
- (f) If at a meeting, the necessary quorum is not present within 15 minutes of the time of commencement of the meeting, the same shall stand adjourned to the same day next week at the same time and place and at such adjourned meeting the members present shall be competent to transact the business of the meeting irrespective of whether a sufficient quorum is present or not;
- (g) Every question submitted to a meeting of the Governing Body shall be decided by majority of votes and in case of equality of votes, the Chairman shall have a second or casting vote;
- (h) A declaration by the Chairman that a resolution has been carried or lost, and an entry to that effect in the Book of proceedings of the Institute shall be conclusive evidence of that fact;
- (i) A resolution circulated to the members of the Governing Body of the Institute will be considered to have been passed unless one or more members have communicated his or their note of dissent to the Secretary within ten days from the date of circulation. Resolution thus passed by circulation shall have

the same effect as one passed at a meeting of the Governing Body duly held and constituted. In case there is such a note of dissent to the resolution from one or more members of the Institute, the resolution shall be placed before the meeting of the Governing Body of the Institute;

(j) Proceedings of all meetings of the Governing Body shall be duly recorded in the Minutes Book to be kept for the purpose.

16. The founder shall be the Chairman of the Institute as well as of the Governing Body. After the founder, the Governing Body may appoint any of its members to be the Chairman of the Governing Body. **Chairman**

17. The Governing Body will appoint a Vice-chairman of the Institute from among its members who shall, in the absence of the Chairman from Delhi or in the event of the Chairman being unable to attend to his duties, perform the duties & functions of the Chairman. **Vice-Chairman**

18. The Governing Body shall function notwithstanding any vacancy and no act or proceedings of the Governing Body shall be invalidated merely by reason of the existence of a vacancy or vacancies among its members or of any defect in the appointment or election of any of its members. **Proceedings not to be invalidated**

DIRECTOR

19. The Governing Body shall appoint a Director who shall be a scientist of eminence. **Appointment of Director**

POWERS & DUTIES OF THE DIRECTOR

20. The Director will be in general charge of the laboratory, workshop and library of the Institute and will be responsible for laying down the general lines of research to be carried out in different departments of the Institute, subject to the general directions of the Advisory Board. **Director's Powers and Duties**

21. All members of the staff including the Registrar and the heads of departments shall be under the control of the Director.
22. It shall be the duty of the Director to carry on the business of the Institute under the direction of the Governing Body in accordance with the regulations and bye-laws and to bring to the notice of the Governing Body at its next meeting for its confirmation any action, which in an emergency, he may have found it necessary to take without prior sanction.
23. The Director shall prepare a draft budget and shall forward it with his comments and opinion to the Governing Body.
24. The Director shall generally supervise all the accounts of the Institute and shall be responsible for the correctness of the accounts which will be maintained by the Registrar.
25. The Director shall have powers to spend upto Rs 5000/-per annum over and above the estimated annual budget of the Institute sanctioned by the Governing Body without the previous sanction of the Governing Body. However, he shall put all such expenses before the first meeting of the Governing Body for its approval.

REGISTRAR

Appointment of Registrar

26. (a) The Governing Body shall appoint a Registrar of the Institute who will be responsible for proper keeping of accounts and for the discharge of such duties as may from time to time be entrusted to him by the Governing Body. However, the Registrar will have no right to vote;
- (b) The Registrar shall keep a record of the proceedings of the general meetings and of meetings of the Governing

Body; and the minute of any meeting of the General Body of the Institute, the Governing Body or of any sub-committee, if signed by the Chairman thereof, shall be prima facie evidence of the matters stated in such minutes.

POWERS & DUTIES OF THE REGISTRAR

Registrar's Powers and Duties

27. The Registrar will be a whole-time officer of the Institute. He will be responsible for the administration of the office of the Institute under the general direction and control of the Director. It shall be the duty of the Registrar: -
- (i) to act as Secretary of the Governing Body and such other committees as may be provided for from time to time by the Governing Body;
 - (ii) to prepare the agenda for and issue notices of the meetings of these bodies;
 - (iii) to draft the corresponding minutes, and
 - (iv) to make such communications to the press on the affairs of the Institute as the Governing Body may authorise;
 - (v) to perform such other duties as may be entrusted to him by the Director and the Governing Body.
28. The Registrar shall maintain the accounts of the Institute under the general supervision of the Director and the Director shall be responsible to the Governing Body for their correctness.
29. The Registrar shall remain in charge of the office and subordinate staff of the Institute in class III and shall exercise such disciplinary control as may be necessary for this purpose subject to the general control of the Director.
30. The Registrar shall be responsible for appointment and supervision of all the subordinate staff of class III.

31. The Registrar shall be responsible to the Director for the general maintenance and upkeep of the Institute buildings.

ADVISORY BOARD

Functions of Advisory Board

32. The Governing Body may appoint an Advisory Board consisting of eminent scientists and technicians. The function of this Board will be: -

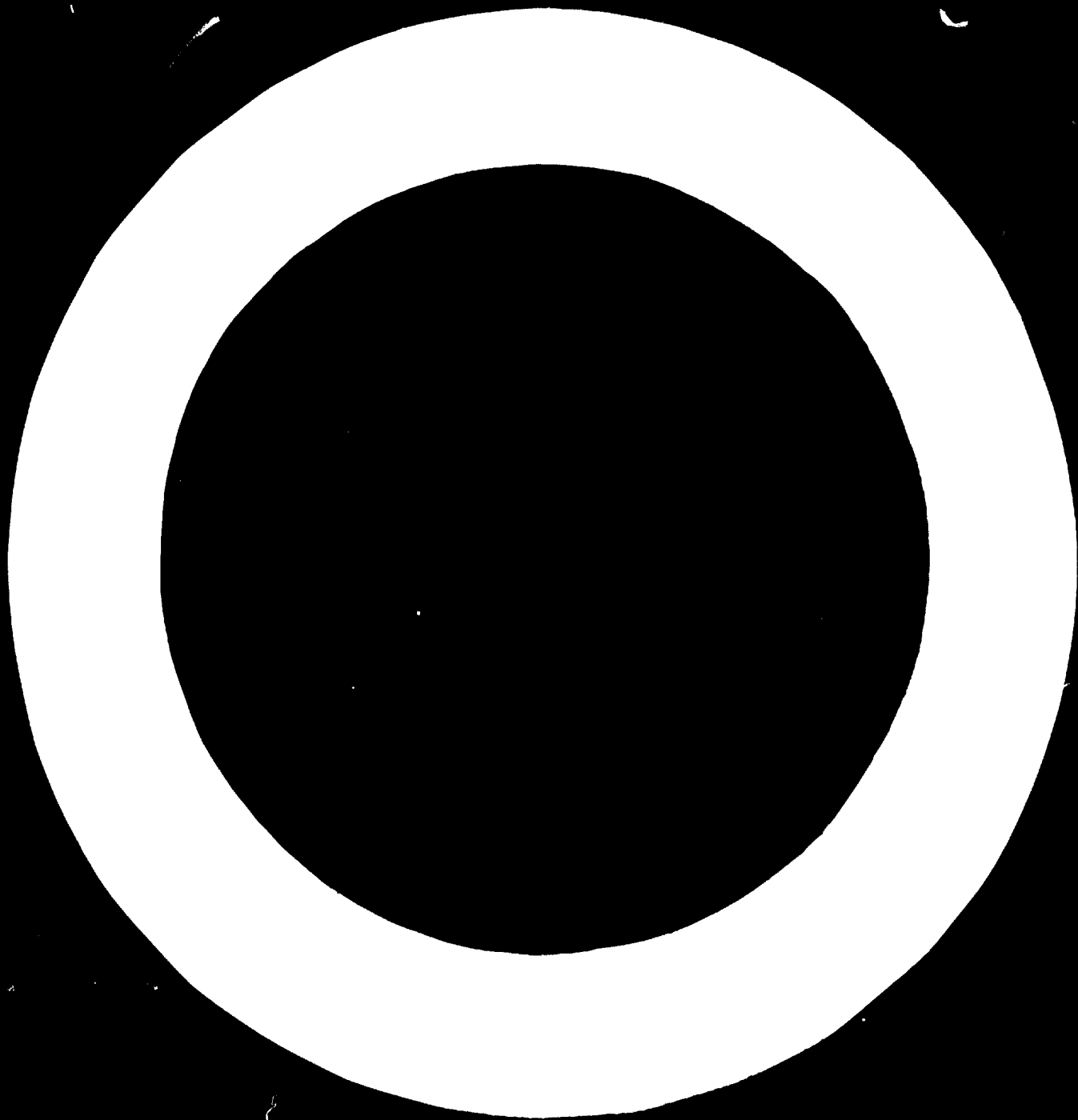
- (a) to recommend to the Governing Body a programme of research work for the Institute at the beginning of each year;
- (b) to review the progress of the Institute and to recommend to the Governing Body new schemes for development;
- (c) to discharge any other function which may be assigned to it by the Governing Body.

Procedures of Advisory Board

33. The Advisory Board will be constituted of not less than five and not more than eleven scientists including the Director who will be ex-officio member of the Board.
34. The Advisory Board will elect their own Chairman.
35. The Advisory Board will meet at least once in the year.
36. The Director will act as a Secretary to the Advisory Board.
37. Three members of the Advisory Board will retire every year and the Governing Body will appoint new members in place of the retiring members. The retiring members can be re-appointed by the Governing Body.
38. The Board shall form its own rules for the conduct of its business.

ACCOUNTS AND AUDIT

39. The accounts of the Institute shall be properly kept showing the income and expenditure of the Institute for the financial year ending 31st March every year. For every year ending 31st March a statement of income and expenditure shall be prepared and also a balance sheet of the Institute showing the assets and liabilities of the Institute as on the 31st March. **Accounts**
40. An auditor for the Institute shall be appointed at the Annual General Meeting every year. The auditor shall, as soon as possible, after the close of the financial year of the Institute and as often as he considers necessary, audit the accounts of the Institute. **Auditors**



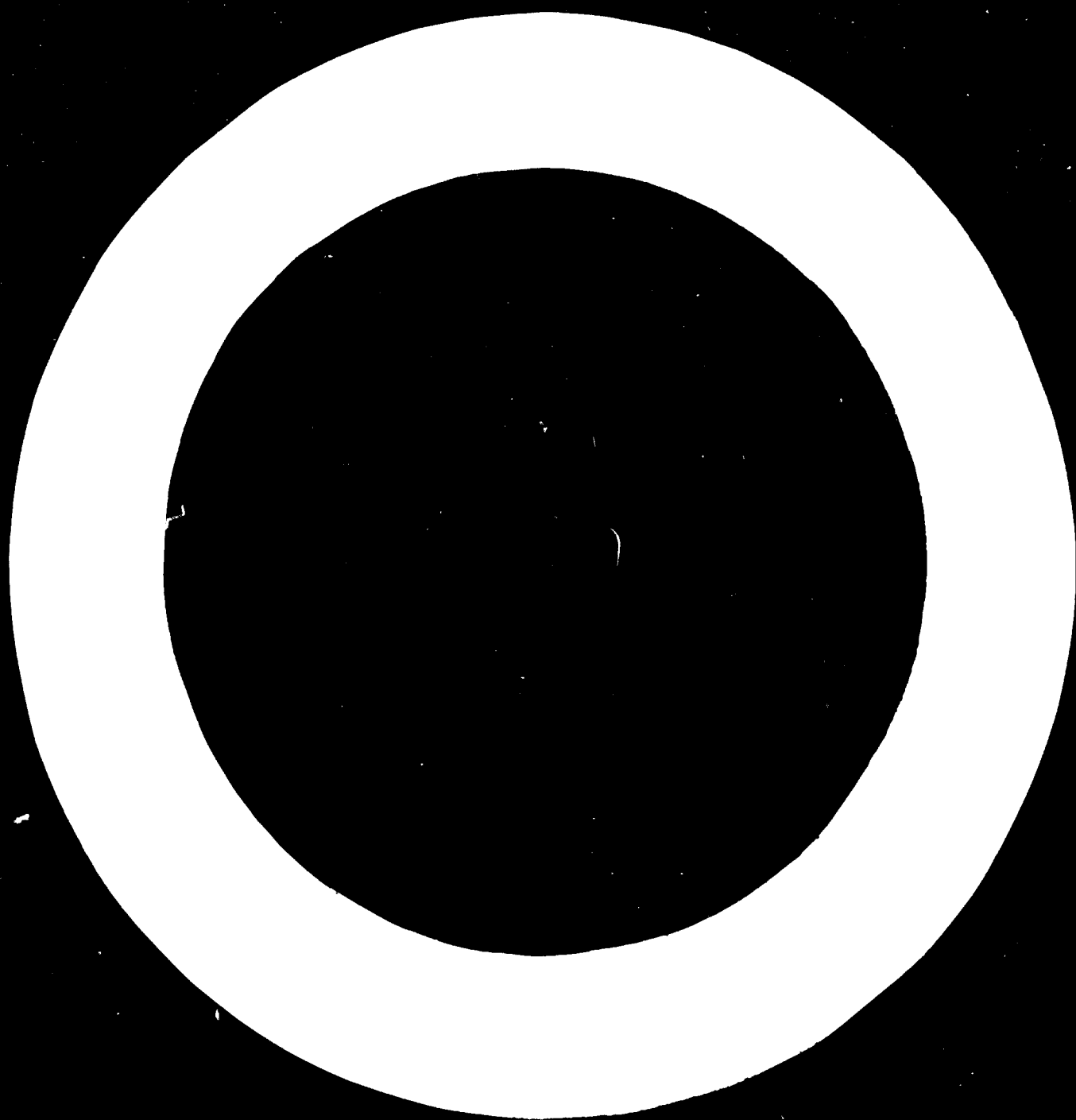
APPENDIX 'B'

SHRI RAM SCIENTIFIC AND INDUSTRIAL RESEARCH FOUNDATION

Memorandum of Association

and

Rules & Regulations



Certificate of Registration under Societies

REGISTRATION ACT XXI OF 1860, (PUNJAB AMENDMENT ACT 1957 AS EXTENDED
TO THE UNION TERRITORY OF DELHI.)

No. S 169, OF 1940-41

I hereby certify that in pursuance of Section 12A of S.R. Act, XXI of
1860 the name of "Shri Ram Institute for Industrial Research" has been changed
to "SHRI RAM SCIENTIFIC AND INDUSTRIAL RESEARCH FOUNDATION".

Given under my hand at Delhi this Eighth day of December, one thousand
nine hundred and sixty four.

Fee Rs. 1.00 paid

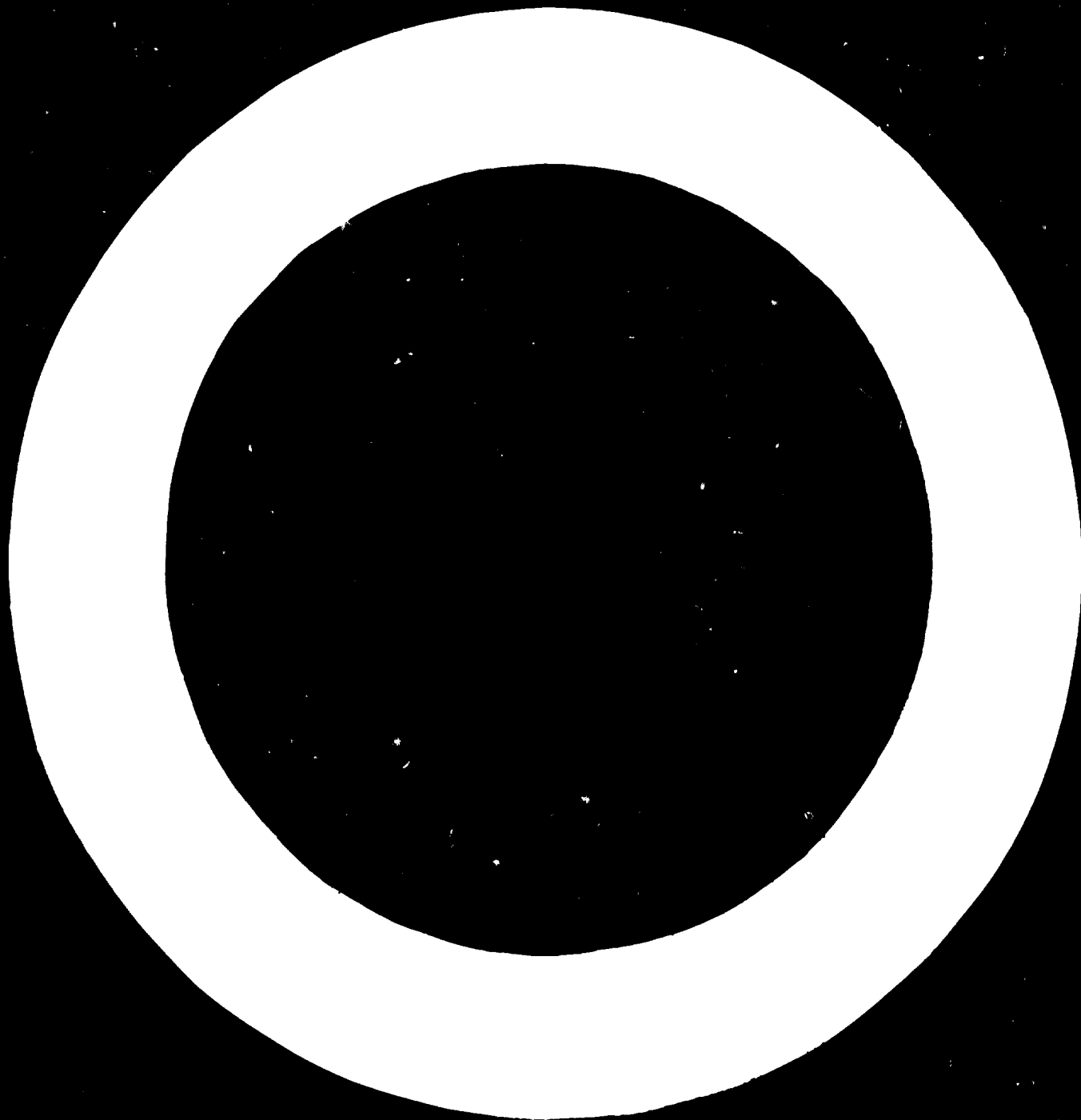
(SEAL)

Registrar of Societies, Delhi

Sd/-

(M. Zubair)

Registrar of Societies, Delhi



NOTIFICATION

Published in PART II - SECTION 3 - SUB-SECTION (ii)

OF GAZETTE OF INDIA
(Department of Revenue)

Income-Tax

New Delhi, the 1st February, 1965

S.O. 475 - Whereas the Central Government by notification of the Government of India in the Ministry of Finance (Revenue Division) No. 79 dated the 10th December, 1953, directed the inclusion of the institution "Shri Ram Institute for Industrial Research, Delhi" in the list appended to the notification of the Government of India in the Finance Department (Revenue Division) No. 34 Income-tax dated the 23rd November, 1946, the list containing the names of the associations, universities, colleges and institutions approved by the prescribed authority for the purpose of clause (xiii) of sub-section (2) of section 10 of the Indian Income-tax Act, 1922 (11 of 1922):

And whereas such approval continues to be in force by virtue of clause (k) of sub-section (2) of section 297 of the Income-tax Act, 1961 (43 of 1961);

And whereas the said institution has changed its name to "Shri Ram Scientific and Industrial Research Foundation, Delhi";

And whereas the institution with the name so changed has been approved by the Council of Scientific and Industrial Research, the 'prescribed authority' for the purpose of clause (ii) of sub-section (1) of section 35 of the said Income-tax Act, 1961;

Now, therefore, the Central Government hereby directs that in the list appended to the said notification of the Government of India in the Finance Department (Revenue Division) No. 34-Income-tax dated the 23rd November, 1946 under the sub-heading "Scientific and Industrial Research Associations", for the entry "12C, Shri Ram Institute for Industrial Research, Delhi", the entry "12 C, SHRI RAM SCIENTIFIC

AND INDUSTRIAL RESEARCH FOUNDATION, DELHI" shall be substituted.

2. The above notification is published for general information.

(No. 8/F, No. 10/90/64-IT (AI).)

Sd/- G.R. DESAI

Deputy Secretary to the Government of India

MEMORANDUM OF ASSOCIATION

OF

Shri Ram Scientific and Industrial Research Foundation

1. The name of the Society is Shri Ram Scientific and Industrial Research Foundation, hereinafter called the Foundation.
2. The objects for which the Foundation is established are: -
 - (a) Promotion of scientific investigation in general and in relation to manufacture, commerce and industry in particular;
 - (b) Assisting in the foundation and development of new industries and existing industries;
 - (c) Utilization of indigenous products of India, both vegetable and mineral;
 - (d) Carrying on fundamental research;
 - (e) To act as a Test House and as an Information and Advice Bureau;
 - (f) Building and/or maintaining and/or aiding laboratories, pilot plants, libraries, reading rooms and other institutions for the promotion of such scientific investigation and research;
 - (g) Grant of scholarships;

- (h) Promotion of post-graduate studies;
- (i) Co-operation with the University of Delhi and other established Universities or educational bodies for advancing the objects of the Foundation;
- (j) Taking over the assets and/or activities of Lala Shri Ram Charitable Trust Society and of any other person or body for the advancement of the objects of the Foundation;
- (k) Administration of endowments having for all or any of their objects the promotion of scientific investigations as aforesaid;
- (l) Collection, management and disbursement of funds raised or to be raised for all or any of its objects;
- (m) Purchase or acquisition on lease or in exchange or by way of gift or otherwise of any real or personal or immovable or movable property and any rights or privileges necessary or convenient for its purposes;
- (n) Establishment and maintenance of Provident Fund for the benefit of the employee of the Foundation;
- (o) Doing of all such things as are incidental or conducive to the attainment of the above objects or any of them or which may be conveniently done along with or as subsidiary to the said objects;
- (p) For the purpose aforesaid, or any of them, to establish laboratories/institutions, and to run them itself, and/or to transfer them, with or without the endowment of other assets of the Foundation, to any other institution willing and able to run them;
- (q) To make grants/endowments for the furtherance of the objects of the Society;
- (r) Acting as Trustees and holding assets on Trust for and on behalf of any other person, body or institute, and doing such acts and deeds and incurring such liabilities as may be necessary or ancillary to the furtherance of the Society's objects.

3. The names, occupations and addresses of the persons who are members of and form the Governing Body of the said Foundation are as follows: -

1. Sir Shri Ram,
Mill-owner,
22, Curzon Road, New Delhi
2. Ch. Mukhtar Singh,
Service,
Daurala Sugar Works, Daurala, Dt. Meerut
3. Sir Padampat Singhtania,
Mill-owner,
Kamla Tower, Cownpore.
4. Lala Shankar Lal,
Mill-owner,
Shankar Niwas, Curzon Road, New Delhi.
5. The Hon'ble Sir Girja Shankar Bajpai,
K.B.E., C.I.E., I.C.S.,
Member of Viceroy's Executive Council
2, King George's Avenue, New Delhi
6. N.R. Pillai Esq., C.I.E., C.B.E., I.C.S.,
Government Service,
11, Race Course Road, New Delhi
7. The Hon'ble Sir Maurice Gwyer, K.C.B., K.G.S.I.,
Chief Justice of India,
19, Akbar Road, New Delhi

4. A copy of the Rules and Regulations of the said Foundation is filed with this Memorandum of Association and the undersigned being members of the said Foundation do hereby certify that such copy of such Rules and Regulations is a correct copy of the Rules and Regulations of the Foundation.

As witness our several and respective hands and signatures this 2nd day of August, 1940.

Note: The sub-clause (p) to (r) have been added in clause 2 with effect from 21-10-1964, the date of the confirmatory meeting of the members.

RULES AND REGULATIONS

OF

Shri Ram Scientific and Industrial Research Foundation

MEMBERSHIP

1. Every subscriber to the Memorandum of Association of the Foundation and every person (including bodies corporate, associations of persons or government or semi-government authority) whom the Board (as hereinafter defined) may admit as members, shall be members of the Foundation. A member shall sign a roll to be kept for the purpose.

A person shall cease to be a member by resignation, disqualification or death, or if a corporate member, on liquidation.

A member shall be deemed to have become disqualified if, in the view of the other members expressed by a resolution of the majority of the total number of the members, he becomes of unsound mind, or commits an act which makes it undesirable to have him as a member, or his membership ceases to be in the interest of the Foundation.

BOARD OF GOVERNORS

2. (a) The management of the affairs of the Foundation and its investments, and the power of deployment, allotment, payment and disbursement of its funds and properties, shall vest in a Board of Governors, hereinafter called 'The Board'.
- (b) The Board shall consist of not less than 7 and not more than 10 members as follows: -
 - Founder's (i.e. the late Sir Shri Ram's) successor being a member of the Founder's family in the male line of descent;
 - One nominee of the Founder's successor;
 - Two nominees of the Government of India in the appropriate Ministry;

- One nominee of the Federation of Indian Chambers of Commerce and Industry;
- One nominee of the Board of Scientific and Industrial Research;
- One nominee of the University of Delhi;
- Not more than three members co-opted by the other members for the time being of the Board.

Definition:

'Founder's successor' "means the successor of Sir Shri Ram on the Board, and subsequent successors, appointed in accordance with the provisions of these rules".

- (c) The Founder's successor shall be nominated by the successor for the time being in office.

The Founder's successor shall be a lifetime member of the Board, but he may retire after appointing as his successor another member from Sir Shri Ram's family in the male line of descent.

Provided that if the Founder's successor fails to appoint a successor in any event, the power to appoint the next succeeding Founder's successor shall be exercised by the Board, subject to such appointee being in the direct male line of descent of the Founder.

- (d) The members of the Board other than the Founder's successor and his nominee, shall hold office for three years from the respective dates of their appointment, and shall be eligible for reappointment.

Provided that a member shall continue to function as such after the expiry of his term of office until his successor is appointed.

- (e) A member of the Board shall vacate office when in the view of the Board expressed by a resolution, he becomes of unsound mind or insolvent or guilty of an offence involving moral turpitude.

POWERS OF THE BOARD

3. Without prejudice to the generality of the powers of the Board to do such things as it may consider necessary or expedient for the purpose of carrying out the objects of the Foundation, the Board may: -
- (a) Open such accounts in the name of the Foundation with such Bank(s) or other institutions as it may think fit from time to time, and may authorise any of its members or any officer of the Foundation to operate such account(s).
 - (b) Defray the expenses of the Foundation's activities and make contributions from the funds or property of the Foundation to any other trust or society having objects similar to those of the Foundation.
 - (c) Invest such funds of the Foundation as may not be immediately required, in all or any of the following manners, and from time to time realise or vary such investments: -
 - (i) In securities and investments listed in clauses (a) to (e) of Section 20 of the Indian Trust Act;
 - (ii) In shares or debentures of such joint stock companies as the Board may decide, due regard being had to the safety of the investment;
 - (iii) Deposit in any scheduled Bank(s) or Shri Ram Associates Private Ltd, of its associated concerns, as the Board may decide.
 - (d) Borrow money for the purposes of the Foundation, and, if necessary create lien on the Foundation's assets for the purpose.
 - (e) Sell, improve, manage and develop all or any part of the property and rights of the Foundation.
 - (f) Appoint, and, at its discretion, remove or suspend employees of all categories of the Foundation, and from time to time to determine their powers and fix their salaries or emoluments.

- (g) Frame bye-laws regarding matters concerning the working of the Foundation which are not repugnant to these regulations.
- (h) Delegate any of its powers (including the power to sub-delegate) to such committees or sub-committees as it may constitute , and to any Governor(s) or Officer(s) of the Foundation.
- (i) Generally do such things as it may consider necessary or expedient for the purpose of carrying out the objects of the Foundation.

MEETINGS OF THE BOARD

- 4. (a) The Board shall meet as and when a meeting is convened by the Chairman or is requisitioned by at least three members of the Board, provided that it shall meet at least once within four months of a previous meeting.
- (b) At least ten days' notice shall be given for a meeting of the Board, but a meeting may be called at shorter notice if the members of the Board for the time being in India unanimously agree to waive the notice.
- (c) Three members of the Board, personally present, shall form the quorum for a meeting of the Board. If at a meeting the necessary quorum is not present within 15 minutes of the time of commencement of the meeting, the same shall stand adjourned to the same day the following week at the same time and place, and at such adjourned meeting the members present, irrespective of the number, shall form the quorum.
- (d) The Chairman and in his absence the Vice-Chairman, and in the absence of both, a member elected by the Governors present at the meeting, shall preside at meetings of the Board.
- (e) The Board shall take decisions by a vote of majority. Every member shall have one vote and in case of equality of votes, the Chairman of the meeting shall have a casting vote.

- (f) No member of the Board shall in any way be liable for any loss or damage to the Foundation and its assets, unless such loss or damage was caused by his wilful negligence or breach of trust.
- (g) A resolution signed by the majority of the members of the Board, after circulation amongst all the members for the time being in India, shall be as effective and binding as a resolution passed at a meeting of the Board, provided that if one or more members have communicated their vote of dissent to the Secretary within 10 days from the date of circulation, the resolution would be placed before a meeting of the Board of Governors for decision.
- (h) The Board shall function notwithstanding any vacancy and no act or proceedings of the Board shall be invalidated merely by reason of the existence of a vacancy or vacancies among its members or of any defect in the appointment or election of any of its members.

CHAIRMAN/VICE-CHAIRMAN

- 5. (a) The Board shall elect one of its members as its Chairman or as Vice-Chairman upon which the other office shall be held by the Founder's successor.
- (b) Subject to the provision of clause 4 (d) the Chairman and the Vice-Chairman shall perform such functions as the Board may delegate to them from time to time.
- (c) In the Chairmen's absence from Delhi, the Vice-Chairman shall act as Chairman.

SECRETARY

- 6. The Board shall appoint a Secretary, who shall perform such functions as may be entrusted to him by the Board, and shall more particularly be responsible for Secretarial work pertaining to meetings of the Board and of members, keeping of the account of income and expenditure and assets and liabilities of the Foundation, and maintenance of the Foundation's administrative Services.

OTHER OFFICERS

7. The Board shall lay down the organisation structure of the Foundation, Institutes, appoint officials for various positions, prescribe their duties, responsibilities and powers, fix their remuneration and other terms of employment, and, at its discretion from time to time, make variations in any of the foregoing.

ACCOUNTS

8. The accounts of the Foundation shall be made up as of 31st March every year, and authenticated by auditors appointed by the Board. Such authenticated accounts shall be placed before the Annual General Meeting of the members of the Foundation for approval.

ANNUAL MEETINGS OF MEMBERS

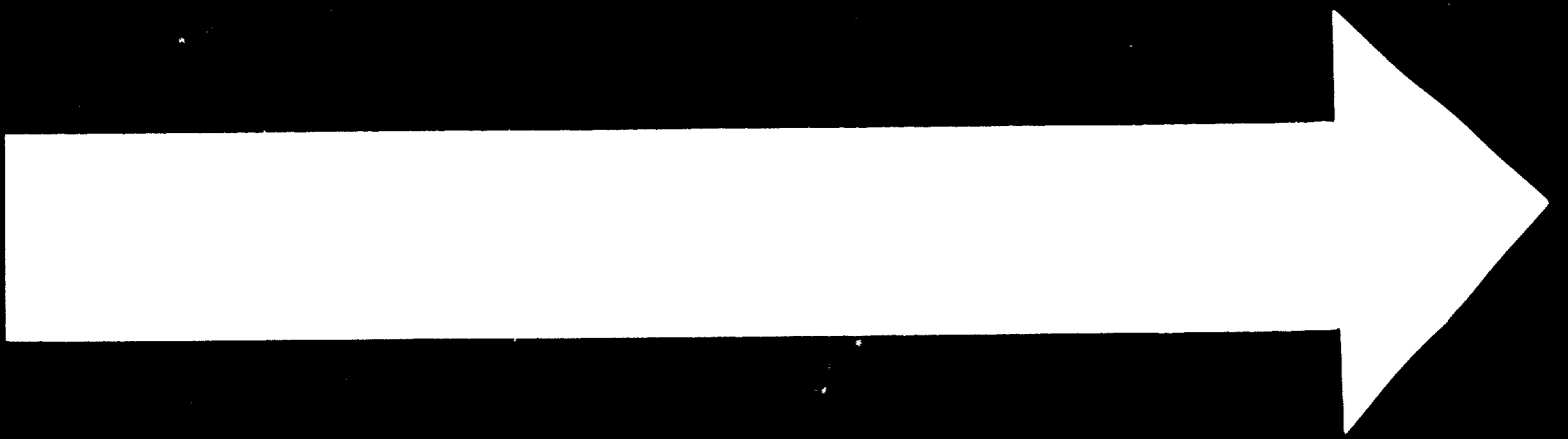
9. (a) An Annual General Meeting of the members of the Foundation shall be held not later than 6 months from the close of the financial year of the Foundation. One-third of members shall form the quorum.
- (b) Extra-ordinary General Meetings of members may be called as and when required by the Board or the Chairman, or requisitioned by members sufficient in number to constitute a quorum.
- (c) The provisions applicable to Board meetings shall mutatis mutandis apply to General Meetings.

COMMITTEES

10. The Board may, from time to time appoint advisory, specialist or administrative committee(s) with specified functions, constitution, and powers.

CHANGE OF PURPOSE/RULES

11. The members of the Foundation may alter, extend, or abridge any purpose or purposes of the Foundation, or modify any of its rules and regulations for the

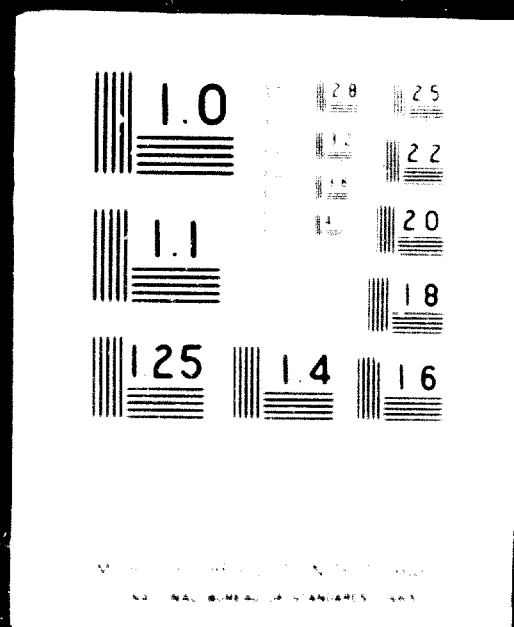


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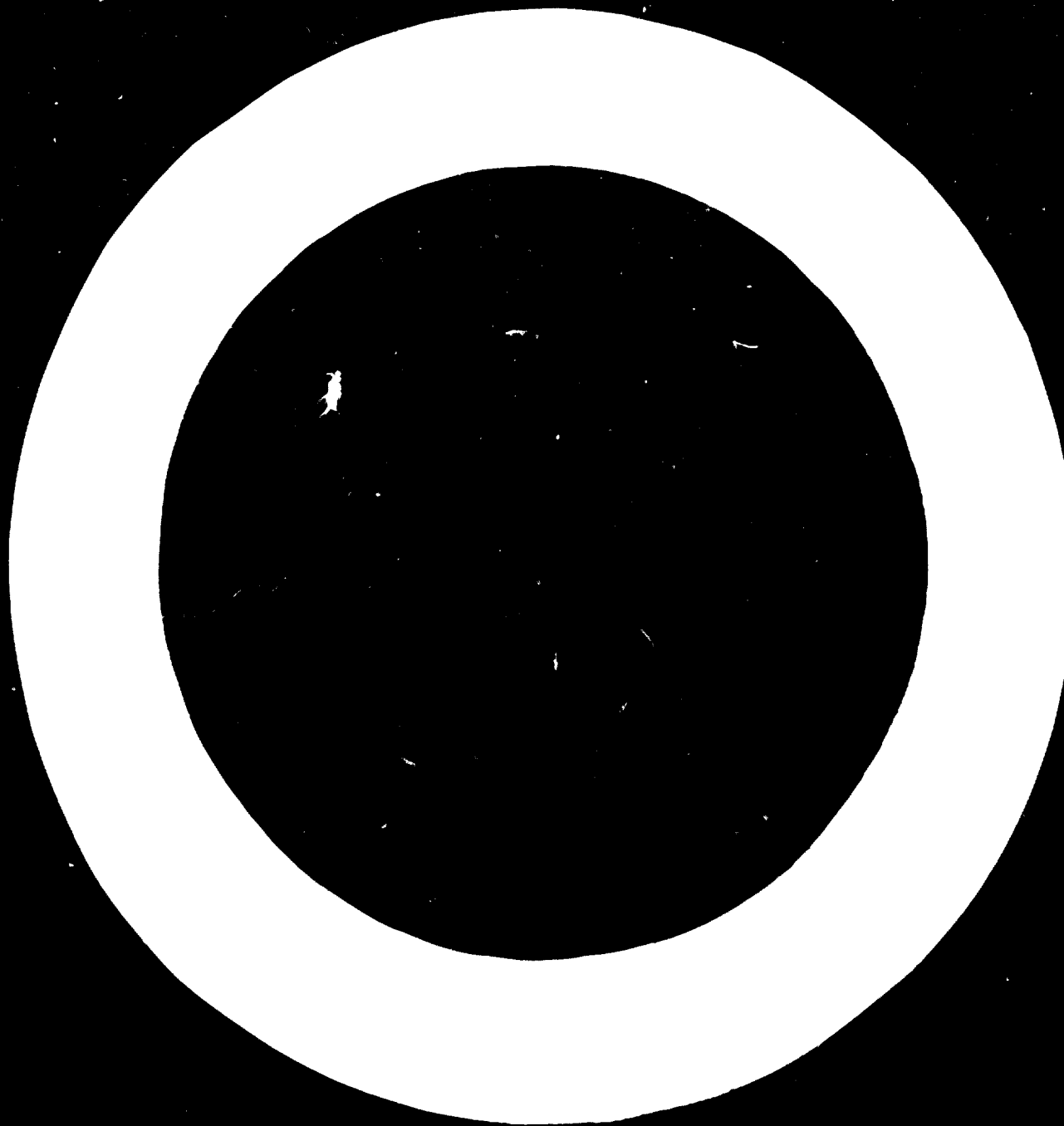
We regret that some of the pages in the microfiche copy of this report may not be up to the proper legibility standards, even though the best possible copy was used for preparing the master fiche.

time being in force, in accordance with the procedure prescribed by the Societies Registration Act, 1860 or any statutory modification thereof, with the approval of the prescribed tax or other statutory authority, if required.

Provided that no change shall be made in the rules concerning the Founder's successors without the consent of the Founder's successor for the time being.

INCOME NOT TO REVERT

12. (a) The income of the Foundation from its property or donations, whencesoever derived shall be applied solely towards the promotion of the objects of the Foundation as set out in its Memorandum of Association and no portion thereof shall be paid or transferred directly or indirectly to the persons who at any time are or have been members of the Foundation or to any of them or any person claiming through any of them provided that nothing herein contained shall prevent the payment in good faith of remuneration to any person (including a member or Governor) called upon to perform some office for the Foundation.
- (b) If upon the dissolution of the Foundation there shall remain after the satisfaction of all its just debts and liabilities, any property whatsoever, the same shall not be paid to or distributed among the members of the Foundation or any of them, but shall be given or transferred to some other Foundation having objects similar to the objects of this Foundation.



BOARD OF GOVERNORS

CHAIRMAN

Dr. C.D. Deshmukh

... Vice-Chancellor,
Delhi University,
Delhi-7

VICE-CHAIRMAN

L. Charat Ram

... Director,
Shri Ram Associates P.L.
Delhi Cloth Mills Premises,
Bara Hindn Rao,
Delhi-6

MEMBERS

Dr. Husain Zaheer

... Director General,
Council of Scientific &
Industrial Research,
Rafi Marg,
New Delhi-1

Shri G.K. Chandiramani

... Additional Secretary,
Ministry of Education,
North Block,
New Delhi-1

Dr. G.P. Kane

... Officer on Special Duty
Directorate General of
Technical Development,
Udyog Bhawan,
New Delhi

Shri G.L. Bansal

... Secretary General
Federation of Indian
Chambers of Commerce
& Industry
Federation House,
Bara Khamba Road,
New Delhi

Shri M.L. Seth

... General Manager,
DCM Chemical Works,
Najafgarh Road,
New Delhi-15

Dr. C.J. Dadachanji

... Managing Director,
National Organic Chemical
Industries Ltd,
Mafat Lal House,
Backbay Reclamation,
Bombay-1

Dr. V.B. Chipalkatti

... Director,
Shri Ram Institute for
Industrial Research,
19, University Road,
Delhi-7





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