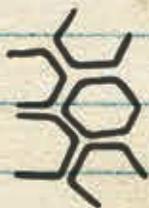
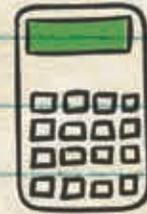


JIVAN

NEWS AND VIEWS OF JESUITS IN INDIA



Pierre Teilhard de Chardin, SJ
PHILOSOPHER, PALEONTOLOGIST
& GEOLOGIST



Christopher Clavius, SJ
MATHEMATICIAN AND
ASTRONOMER



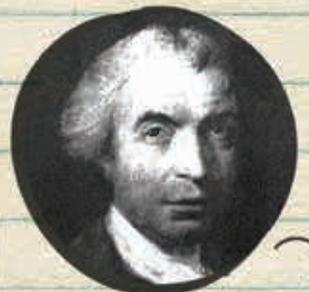
Matteo Ricci, SJ
MATHEMATICIAN AND
ASTRONOMER



Pietro Angelo Secchi, SJ
ASTRONOMER



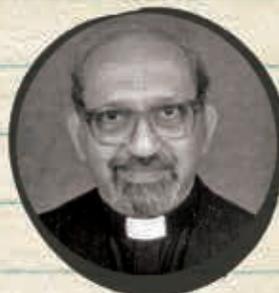
Hermenegild Santapau, SJ
BOTANIST



Roger Joseph Boscovich, SJ
PHYSICIST, ASTRONOMER,
MATHEMATICIAN &
PHILOSOPHER



C. Racine, SJ
MATHEMATICIAN



Cecil John Saldanha, SJ
BOTANIST



Jesuits in Science

FOOTPRINTS

Where was I Lord?

When I was created in my mother's womb,
You knitted my sinews and structured the bones,
You gave me a face, a name, an identity.

When I suckled my mother's breast,
Held tight my father's hand,
As we marched off to school;

When I dreamt multicoloured dreams,
Held the rainbow and picked a star,
When nothing was impossible;

When my hormones like wild horses raged,
Even as I kissed my first girl,
Beginning to glimpse at the mysteries of love;

When the beast in me raved,
Stooping low and hiding my face,
Ashamed even to look at myself;

When the beauty in me blossomed,
Forgetting myself I could embrace
Eternity once more;

You were there! You were there!
Oh ground of my very being!
Now I am found...

Kinley Tshering, SJ
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(From the collection of Poems and Meditations
on The Spiritual Exercises of St. Ignatius of Loyola)



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As a service of information for the South Asian Jesuit Assistency, Jivan is sent to Jesuits and their colleagues, Collaborators and friends. Articles appearing in Jivan express the views of the authors and not of the Jesuit Conference of South Asia. The Editor regrets he is unable to return any hard copies of articles or photographs sent, so please keep a copy of whatever you send for publication.

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LETTER TO THE EDITOR

The Problem of Lay Collaboration

Dear Editor,

In the last few years much has been said, written and done by Jesuits in the name of 'lay collaboration.' Efforts are being made to give our lay collaborators much greater authority and decision-making power in many of our apostolic works, even appointing them Directors of some of our best institutions. What is actually happening is that in the name of 'lay collaboration' we seem to be going overboard and withdrawing almost completely from all 'collaboration', virtually 'handing over' these key institutions to lay people and washing our hands off all responsibility for running them. Though we continue as trustees and owners, very often, not a single Jesuit is seen doing any significant service in the running of these institutions. Little or nothing is done to preserve their 'Jesuit character.' How can this be called 'collaboration?' How can these institutions be called 'Jesuit apostolates?'

We would do well to remember that in the past, before this talk of 'lay collaboration' began, there was much greater partnership with lay people in most of our works. Jesuits and their lay staff used to work happily together as one family in most of our enterprises. Our staff was quite content to work under our leadership since we were seen as men of integrity, highly competent, and very dedicated men of God. Reliable surveys of staff opinions also confirmed that the vast majority of them preferred a Jesuit at the helm.

Historically, we also know that this approach inspired many vocations to the Society. It also ensured that younger Jesuits were given a formation that equipped them, intellectually and spiritually, to provide high quality work and excellent leadership in the service of the Church and society. The kind of 'lay collaboration' being promoted today could eventually lead to Jesuits losing their identity and their leadership role, and bring about a lowering in their all-round standards and professional competence. There would be no real challenge for them to look forward to since any difficult or demanding task could be conveniently passed on to lay people. Why then would Jesuits need to study hard and equip themselves to face the complex problems the world throws up today?

The problem of 'lay collaboration' also gets more complicated in a predominantly non-Christian country where non-Christians, even those opposed to our values, could get appointed as collaborators. They could radically change the character of our organizations! Finally, would young people be inspired to join the Society if they perceive Jesuits as being irrelevant and living comfortable lives while lay people carry forward our institutions working for the 'Greater Glory of God and the greater service of our neighbours?'

JOSEPH M. DIAS, SJ
Andheri (East), Mumbai

JESWITS

MYRON J PEREIRA, SJ | pereira.myron@yahoo.in



"Remember, Arthur, the future of the Society lies in computers. They're just wonderful! They never ask for money. They obey your every command. They don't chase girls. And most of all, they're very very smart."



"What to do with the ex-provincial? Send him to the moon. We Jesuits have already mapped some places there."



"What's this 'WiFi' communication? All my years, I've been praying just like that!"



POSA Speaks

GEORGE PATTERY, SJ

To be holy is to become a nuisance!

We are witnessing unusual times in our days. The near total grip of the right-wing fundamentalism and neo-liberal economy on the socio-political map of the world is worrisome. There is uncharacteristic justification of the unacceptable. Rage and restlessness characterize the global scenario.

The Dalits and farmers are marching in India; their 'akrosh' is yet to get a form and shape. Rapes, lies and mob lynching get acceptance in the corridors of power. The minorities of all types are branded as aliens in a politically occupied country. There is fear in the air as identities are being threatened.

Are these the birth pangs of something new and different? Is this the beginning of another revolution or will it give birth a new transformation through evolution? What does it mean today to be a citizen, to be a believer, to be a Christian?

In his exhortation Gaudete et Exultate Pope Francis says: "God is mysteriously present in the life of every person, in a way that he himself chooses, and we cannot exclude this by our presumed certainties. Even when someone's life appears completely wrecked, even when we see it devastated by vices or addictions, God is present there." Can we transpose this to the social conditions today? In the midst of all the socio-political chaos and confusion, God is labouring in and through them. The path that Jesus proposes in the Sermon on the Mount confirms this. A believer is invited to go against the flow, making us challenge society by the way we live and, as a result, becoming a nuisance.

The way we live in society challenging the exclusive ideologies, make us a nuisance, an inconvenience to those around us. Pope Francis is calling us to go beyond dull mediocrity and religious elitism. How do we articulate a new inclusivity in the midst of excluding ideologies? How do we propose a religious presence that goes against the flow of majoritarianism? How do we hear the cries of the silenced and the excluded? Do we hear the challenge that Franco placed before us in the April issue of Jivan? "Jesuit organizations (in South Asia) are not distinguished by creativity and taking risks. This reflects a culture where safe havens or comfort zones grow unimpeded." Can we ignore this challenge? How can we Jesuits become a nuisance to the overpowering majoritarianism and the all attractive corporate comfort zones?



Editor's Desk

VINAYAK JADAV, SJ

Science - The Divine Milieu

Science, dealing with the laws of nature, is closest to God and the mystery of creation. Scientific laws and principles therefore provide the deepest of spiritual insights and inspiration. Science and religion both ultimately attempt to represent and explore Truth in its totality. The former represents matter and the latter spirit. If spirit is matter transcended and matter is spirit incarnate, then there is also an ontological relationship between science and faith. Therefore, if we keep exploring the spirituality beneath science rather keep evolving a spirituality of science we will realise that science is itself spirituality.

The first law of Thermodynamics (Law of Conservation of Energy) states: Energy can neither be created nor destroyed; energy can only be transferred or changed from one form to another. This simple law can also be applied to the difficult situations of life when our seemingly lost psychic energy has actually gained us new spiritual energy to face similar or even worse situations in the future. The Resurrection of Jesus too can be understood in the light of His death transformed into new life.

Le Chatelier's Principle of Chemistry is: If a dynamic equilibrium is disturbed by changing the conditions, the position of equilibrium moves to counteract the change. When life is settled well and conditions arise that upset it the unsettled state has the natural tendency to move eventually towards a settlement. Buddhism teaches it by the doctrine of Impermanence "Anicca" or Anitya i.e. nothing is permanent and everything is passing. The Heisenberg Uncertainty Principle of quantum mechanics ultimately emphasizes the fleeting state of the atom. Physics or Chemistry, the law of nature therefore is that the total mass of the system remains constant despite the transitory changes within it. The totality can be equated to God, who balances the system by counteracting any imbalance created within the universe.

The Jesuit geologist and palaeontologist Pierre Teilhard de Chardin is best known for weaving science and spirituality together. For him to be in science was to be in 'The Divine Milieu' and research was the highest form of adoration. He could integrate his scientific experience of the universe with his personal faith. Here is an account: *In the course of a scientific expedition, he found himself one day in the Ordos desert where it was impossible for him to offer Mass. This happened it seems on the feast of the Transfiguration, a feast for which he had a special love. His thoughts therefore turned to the radiation of the Eucharistic presence of Christ through the universe. He did not confuse that presence, the effect of transubstantiation in the strict sense, with the omnipresence of the divine word. His faith in the mystery of the Eucharist was not only ardent: it was also as exact as it was firm* (The Mass on the World).

May science be for us the Divine Milieu to attain the Love of God and a path culminating in the Cosmic Christ.

P.S. We thank Fr. Job Kozhamthadam for the special assistance in this 'Jesuits in Science' issue.



The Jesuits: “The Scientific Order” of the Catholic Church

Jesuits and Science – a close link

Whenever one says that Jesuits played a major role in the origin and development of modern science, invariably several eyebrows are raised in disbelief and even disagreement. But even a cursory look at the history of modern science, particularly in its infancy, tells us that it is true. Many internationally reputed scholars have endorsed it time and again. To mention a few, William Ashworth writes: “There is one order that stands out from all others as the scientific order without rival in 17th century Catholicism, and that of course is the Society of Jesus.” George Sarton, well-known historian of science, says: “One cannot talk about mathematics in the 16th and 17th centuries without seeing a Jesuit at every corner.” Carolus Sommervogel lists 631 Jesuit scientists in the first two centuries of Jesuit history. This is a very high since at the time of the Suppression there were only 2171 Jesuits. Jesuit astronomers at the Collegio Romano were the first to confirm independently the telescopic discoveries of Galileo.

Nor was this international recognition gratuitously conferred. 35 Lunar Craters and four asteroids have been named after Jesuits. Seismology is called the Jesuit science in recognition of the great contribution the Jesuits have made to this branch of science. Several Jesuits were members of the Royal Societies in various nations. Galileo, Descartes, Mersenne, De la Hire, Jean Delambre, etc. were well-known scientists educated by Jesuits.

This well-earned reputation was not limited to Christian Europe only. It extended to South Asia and the New World of the Americas. Several scholars like M. Razaullah Ansari have pointed out that “the Jesuits were the first Europeans to introduce modern Western astronomy into the South and South-East Asia.” In China the Jesuit astronomer trinity -



Image Source : Google

Matteo Ricci (1552-1610), John Adam Schall von Bell (1591-1666) and Ferdinand Verbiest (1623-1688) - was accorded the rare honour of national heroes. In India, the first credited scientific discovery was made in 1689 by a French Jesuit astronomer Jean Richaud, (1633-1693) in 1689. He discovered the binary nature of alpha-Centauri and alpha-Cruis. In 1876 Eugene Lafont of St. Xavier's College, Kolkata, was one of the co-founders of the Indian Association for the Cultivation of Science (IACS, the equivalent of Royal Societies in other countries), along with Mahendra Lal Sircar. Jesuits were the first to introduce telescope in India. Raja Sawai Jai Singh (1688-1743) of Jaipur invited Jesuit astronomers to help him in his effort to bring Indian astronomy on par with astronomy in the West. Coming to contemporary times, more than 80 species of plants have been named after Indian Jesuit scientists and their research centres. A rare insect has been named after an Indian Jesuit. Jesuits in India continue this great tradition through their prestigious research institutes and reputed colleges.

Two Periods of Jesuit Science in India: Pre-Suppression and Post Restoration

The Society of Jesus was suppressed in 1773 and restored in 1814. This suppression was mainly due to political and non-religious reasons. As far as Jesuit involvement and contribution to science in India is concerned, there were some differences between the two.

The Pre-Suppression Period

This first period was largely marked by individual initiatives.

There were many talented Jesuit scientists, mostly from Europe, who made valuable contribution to science in India. They had no established institutional support. Their contribution was mostly in accurate determination and prediction of the position of heavenly bodies and astronomical events, accurate estimation of longitudes and latitudes of different cities, making accurate and reliable maps of the country, geographical exploration, etc. Today these may look simple and insignificant. But they were very valuable and much needed at that time. For instance, S.N. Sen, the well-known historian of Indian astronomy, laments over the pathetic state of geographical knowledge available in India in the 18th century: “In the eighteenth century the pioneering efforts of reconstructing the geography of India along scientific lines were handicapped by the paucity of data on geographical latitudes and longitudes, particularly the latter, and, where available, by their unreliability.” In such circumstances, the Jesuit contribution was a real blessing.

Perhaps the most notable instance of Jesuit contribution to the development of science in India in the 18th century was their collaboration with Raja Sawai Jai Singh (1688-1743) of Jaipur. Jai Singh himself was a gifted astronomer and made every effort to get the best of experts, facilities, and equipments. He had observatories built in Jaipur, Delhi, Mathura, Benares, and Ujjain, and had drawn up a master-plan to make Jesuits in charge of them. Obviously, he was very appreciative of the Jesuit astronomers.

The Post-Restoration Period

This period saw strong institutional involvement and support. This paradigm shift had many salutary benefits. It saw many outstanding colleges and other centres of learning, particularly scientific learning, coming up at strategic locations, attracting

talented professors and students. It gave stability and continuity to the scientific programmes. Jesuit colleges like St. Joseph’s Trichy, St. Xavier’s Kolkata, St. Xavier’s Mumbai, etc. became nationally reputed training centres for budding scientists. The late Dr. Abdul Kalam, Jagdish Chandra Bose, R. Chidambaram, Kasturi Ranjan, Paul Ratnasamy, etc. were some of the eminent scientists to emerge from these institutions.

Personal Testimonies

The personal testimonies from some of the alumni of these institutions reveal the quality and commitment of these temples of learning. For instance, Abdul Kalam wrote these memorable words in March 1998: “All that I am today I owe it to St Joseph’s [Trichy], and to the Fathers and Professors of my College. The formation I have received in my Alma Mater has enabled me to serve the nation creditably.” India’s Nobel Laureate Sir C.V. Raman has similar words of appreciation: “St. Joseph’s College, Tiruchirapalli, had played a great part in the development of higher education in Southern India. Many of its former alumni who have taken the Honours Course in Physics from that College have subsequently been research students in my laboratory and achieved conspicuous success. They now hold distinguished positions in various parts of India.”



There is one order that stands out from all others as the scientific order without rival in 17th century Catholicism, and that of course is the Society of Jesus. ”

-William Ashworth

Jesuit Scientific Research Institutes in India

A network of well-appreciated, innovative and productive research institutes in various parts of India stands as a living testimony to the continued interest and involvement of the Jesuits in science and technology. Some of the more important ones: Centre for Biodiversity and Biotechnology, Palayamkottai, Centre for Natural Resources, Tiruchirappalli, Centre for

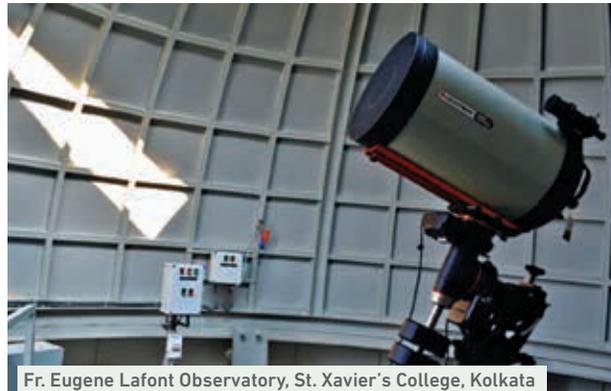
Taxonomic Studies, Bangalore, Entomology Research Institute, Chennai, Loyola Institute of Frontier Energy, Chennai, Biotechnology Research Institute in St. Aloysius College, Mangalore, Loyola Centre for Research and Development, St. Xavier’s College, Ahmedabad, etc.

Jesuit Scientific Institutions

There are other very active scientific institutions attracting many visitors and research scholars. The Trichi Museum, The Shembaganur Museum, St. Xavier’s College Observatory (1879) in Kolkata, Blatter Herbarium (1906) in St. Xavier’s College, Mumbai, are some of them.

Jesuits and Science-Religion Dialogue

Today there is a growing awareness globally that science and religion are partners in a common mission of building up a better humanity and a better world. Jesuit scientists have always been convinced that one can be a successful scientist and a faithful religious. In fact, their life and work has been a living testimony that science and religion are not contradictory, but complementary. Indian Institute of Science and Religion (IISR) Delhi, JDV Centre for Science-Religion Studies (JCSR) Pune, etc., have been serving the nation for over 20 years.



Fr. Eugene Lafont Observatory, St. Xavier's College, Kolkata

People-Centred & Nature-Centred: Two special thrust areas of Jesuit Science

People-Centred – The Pastoral Dimension

Jesuit scientists never lost sight of the fact that a Jesuit is a man of God and a man for others. Hence the pastoral dimension, caring for people, particularly the poor and the marginalized, has always been uppermost in their engagement in science. Different Jesuit scientific institutes have paid special attention to this.

Nature-Centred – Appreciating and Caring for Nature

St. Ignatius and the Jesuits had a very positive view of nature. Hence the science they engaged in was centred on the beauty and grandeur of the universe. Astronomy, study of plants (especially medicinal plants), climatic conditions, weather forecasting, seismology, etc. had a special place in their scientific quest. At the same time, there are the great contributions of Jesuit mathematicians, the outstanding work of Roger Boscovich in atomic theory, etc. The emphasis on the study of nature is particularly noticeable among Jesuit scientists of India.

The Ignatian Roots of Jesuit Science

The Jesuit engagement in modern science was firmly rooted in the spirituality and fundamental charism of the Jesuits. A Jesuit is a contemplative in action who blends harmoniously the interiority of the Spirit with the exteriority of action. Again, the Society of Jesus was founded for “the greater glory of God and the salvation of souls.” This twin goal involves essentially the glory of God and the service of humanity. Many scientists, particularly in the early period of modern science, believed that this was the goal of science as well. For instance, Kepler, the father of modern astronomy, believed that astronomers were priests of the Almighty since they were ministers of the Book of Nature, just as ordinary priests were ministers of the Book of Scripture. This two-book view was quite prevalent in the time of the early Jesuit scientists. Several publicly professed

that this was the reason why they took up science. For instance, Joseph Tieffenthaler (1710-1785) who worked mostly in North India wrote: “I have spared no trouble, and undergone great hardships to disclose the mysteries of nature thereby to acquire a greater knowledge of the Creator and fix my mind on things heavenly.” A positive attitude to nature was fundamental to the Ignatian worldview and spirituality. This is particularly obvious in the *Contemplatio ad Amorem* of the Spiritual Exercises of St. Ignatius.

Here St. Ignatius asks the retreatant to enter into communion with God through a contemplation of nature. Seeing God in all things, particularly in creation, is another fundamental constituent of Ignatian spirituality. This kind of a positive attitude to nature is fundamental to modern science. Openness to new possibilities of serving God and humanity was another special feature of the Ignatian approach. This attitude also resonated well with the perspective of modern science. All these considerations make it clear that the spirituality and charism of the Jesuits predisposed and encouraged them to engage in modern science without giving in to any contradiction or inconsistency.

Conclusion

We are proud and grateful inheritors of the great Jesuit scientific tradition. Jesuit engagement in science has been an important contributor towards nation building in India. This tradition must continue, particularly in this century of science and technology. Unfortunately, today we see the discouraging spectre of science growing more and more while Jesuit presence in science diminishing. Not all Jesuits can be scientists – they need not. But all Jesuits can have the scientific spirit, the scientific temper – and they should, since they are called to be leaders of their community dominated by science and technology. Scientific spirit involves recognition of the importance of science, and appreciation of the achievement of science. At the same time we need an awareness of the potential of science to do harm to humanity and the cosmos. Scientific spirit involves developing a sense of wonder at the grandeur of our mysterious universe, and a childlike curiosity to approach this mystery. Scientific spirit means experiencing a sense of belongingness to this universe and an active realization that we are not arrogant masters, but humble custodians of this universe. Once we imbibe this scientific spirit, we will be able to appreciate science and encourage our younger brothers to take it up seriously in the genuine Jesuit tradition. Then our great tradition will continue and prosper. Let us hope and pray that the Catholic Church, in general, and the Society, in particular, continues to carry forward the great Jesuit scientific tradition.

The author is currently Director of IISR (Indian Institute of Science and Religion), Delhi, and Professor Emeritus of Jnana-Deepa Vidyaapeeth, Pune.

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Jesuit contribution to Life Sciences in India

Jesuit contribution to Life Science in the early days had focussed more on Classical Botany and less on Zoology. The Jesuit pioneers were mostly drawn to Natural History and were self-made men of science.

Without abandoning the Classical aspect of Life Science Jesuit researchers today are integrating recent advances in Biosciences.

The Origin

In the pre-Restoration era of the Society of Jesus Georg Joseph Kamel (1661-1706), a lay brother who worked in the Philippines, was trained as a botanicus et apothecarius (botanist and pharmacist) at the Jesuit College in Brunn. His book *Herbarium Aliarumrquestirpium in insula Luzone Philippinarum* from 1697 to 1698 is widely known. João de Loureiro (1717-1791), a Portuguese missionary and botanist, published the *Flora Cochinchinensis* (1790).

Taxonomic Research

Taxonomy is a branch of Life Science which deals with classification of organisms. After the Restoration in 1814 Western India and the southern region of Tiruchirappalli and Shembaganur of Palni hills became centres of botanical research. Blatter, Caius and Santapau from St. Xavier's College, Bombay, sustained the momentum given by the pioneers. Ethelbert Blatter (1877-1934) identified five floras and wrote sixty papers on Indian flora. He established the Blatter Herbarium. Jean Ferdinand Caius (1877-1944), a trained chemist, did research in medicinal plants at St. Joseph's College in Trichy, and later at St. Xavier's College, Bombay. His research was on the poison apparatus of snakes and remediation against snake poison.



Rapinat Herbarium that originated in Sacred Heart College, Shembaganur, Kodaikanal

Hermenegild Santapau (1903-1970) got his doctorate at the Royal Botanical Gardens, Kew, London and published the *Flora of Purandhar and Kandala*. As the Chief Botanist of India and later as the first Director of the Botanical Survey of India, he laid the foundation for Indian Taxonomic Research. He trained Jesuit taxonomists Joseph Pallithanam, (1915-1984), Cecil Saldanha (1926-2002), K.M. Matthew (1930-2004) and L.H. Cramer (1924-2008). The latter collaborated for the Revised Handbook to the Flora of Ceylon. This group of four taxonomists set the standard for taxonomic research in different parts of India.

Cecil Saldanha, (1926-2002), a well-known plant taxonomist and environmentalist, worked on Taxonomic Revision of the Scrophulariaceae of the Western Peninsular India, at St. Joseph's College in Bangalore, and set up the Taxonomy Centre. His chief contributions are the *Flora of Hassan District* and the *Flora of Karnataka*.

Environmental Biotechnology

Leo D'Souza, trained in plant breeding at the Max Planck Institute of Cologne

in Germany, evolved protocols for the large scale in vitro propagation of several forest trees like *Ailanthus malabarica*, *Butea monosperma* and *Xanthozylum*, ornamental trees like *Millingtonia hortensis*, *Lagerstroemia Flos-reginae* and a wild fern *Drynaria quercifolia*. Murraya, Vernonia and other medicinal plants used in Ayurveda. Ignacimuthu, a renowned plant bio-technologist, entomologist and Fellow of the Royal Entomological Society, identified useful characteristics in the wild genetic resources of legumes and introduced them into the cultivated varieties, so that they could become hardier and more productive. He has several publications related to biotechnology, bioinformatics, and bioethics, holding many patents. With his former student, Maria Packiam, he developed PONNEEM an eco-friendly natural pesticide. There are several Jesuits in the Indian Assistanacy who are actively involved in environmental issues and conservation. Fr. Robert Athickal of TARUMITRA drew inspiration from K.M. Matthew at the Anglade Institute. Some other Jesuits like Lancelot D'Cruz of St. Xavier's College, Ahmedabad have undertaken ethno-botanical research.



Tiruchirappalli – Shembaganur sector

Under the inspiration of J. Mallat at Sacred Heart College in Shembaganur, Professors and scholastics imbibed the scientific temper and transformed the campus into a veritable Nature Sanctuary. The Shembaganur team of S. Munch, A. Anglade, A. Sauliere, C. Montaud, Ayraud, Rapinat, Bertram, Newton, Gombert, Foreau and G. Rodriguez did extensive collections during 1912-17, which were named at Calcutta and Kew



Field exploration by Herbarium researchers

herbaria. Emile Gombert (1866-1948) drew 114 orchid portraits. Anglade's (1873-1953) illustrations of the plants of the Palani hills (1,910 plates now bound in 10 volumes) are phenomenal. Anglade with Ugarte enriched the museums of Shembaganur and Trichy. Besides, Anglade designed the unique xylarium (wood carving of 300 tree species in book form). His research on dolmens of the

Palni hills received national acclaim. Foreau (1881-1967), a bryologist, collected (several of them new to science) an impressive 424 species in addition to 31 species of Cyanophyceae and Lichens.

K.M. Matthew and his team

After the pioneers of Shembaganur, J. Pallithanam (1915-1984) and K.M. Matthew (1930-2004) consolidated earlier initiatives. The former explored the Palni hills and the Sirumalais. K.M. Matthew spent 1449 field days and his collection exceeds 60,644 specimens. His floras on the Flora of Tamilnadu Carnatic of the lower hills and plains of Tamilnadu, and the Flora of the Palni hills became a hallmark of Floristics. He resurrected the impoverished Arboretum, Gardens, Orchidarium, Fernery and above all the Museum of Shembaganur. He set up two institutes: the Rapinat Herbarium (RHT), an international herbarium, in close collaboration with the Kew Gardens in memory of Rapinat, Gombert, Wafflart and others at St. Joseph's in Trichy. The Anglade Institute of Natural History in Shembaganur is a tribute to the Shembaganur team. The Novel Environmental programme conducted at the Anglade Institute since 1984 has received world-wide recognition. K.M. Matthew was awarded posthumously the Indira Gandhi Paryavaran Puraskar in 2004. As an optimist he believed and practiced Orthodox taxonomy, not in any way leaning to today's trend of Omega (Advanced) Taxonomy. Among Jesuits nurtured by K.M. Matthew was V.S. Manickam (1944-2012) a world, renowned Pteridologist. His contribution was in the area of Taxonomy of Ferns, Cytology, Fern Polymorphism, Micromorphology,

Phytochemistry, Fern Tissue Culture and Reintroduction RET plant species. He spent more than 252 days and collected 13,500 specimens. He discovered and published 17 new species.

S. John Britto and his team

After the sudden demise of K.M. Matthew in 2004, S. John Britto began adding new dimensions to research in Rapinat Herbarium and Anglade Institute. Keeping intact Classical Taxonomic Foundations he introduced and implemented modern trends of Life



One day training programme

Sciences. The publication of The Flora of Central and North Tamil Nadu is a tribute to K.M. Matthew. The 300,000 herbarium specimens are digitised and RHT is now a digital (virtual herbarium) with all the required infrastructure. Networking in National Mission such as bioprospecting, assessment of climate change, estimation of forest cover, the Rapinat Herbarium is a partner with the DBT, ISRO, ICMR and DST. A team of Jesuits from



The Anglade Institute of Natural History with an impressive Natural History infrastructure: a Museum, Arboretum, Orchidarium, Fernery, and a valuable Collection of over 2000 water colour plant portraits.

Andhra, Calcutta, Madhya Pradesh and Hazaribag Provinces have worked out an ethno-botany of the Santals, Oraons, and others. In this multidisciplinary dimension it has entered into MoU with leading Universities for research and consultancy. It is a dream come true of the founders, especially the initiatives on environmental awareness by the Anglade Institute and Rapinat Herbarium. It continues to bear bright testimony to Jesuit contribution to Life Sciences. Britto has described 15 new species and guided 45 Ph.D. scholars.

Some recent initiatives in Life Sciences by the new generation of Jesuit scientists

Most of the scientists whose contribution is discussed above are senior Jesuits. Fortunately, the baton has been passed on to a new generation of budding Jesuit scientists who have begun making their presence felt. Their contribution is centred on three areas: medical, agricultural and environmental. Space constraint permits me only a very brief mention of a few of them. Jojo Reddy has been busy with medicinal plants in his 2-acre herbal garden in Andhra Province. He concentrates on isolating extracts from time-tested medical plants, producing nanoparticles and studying how these can be used against harmful micro-organisms and cancer cell lines. James Anthony, on the other hand, is working on developing medicines from ordinary plants to treat the fast-spreading diabetes. Erenius Toppo's main focus is on herbal medicines for liver diseases, particularly non-alcoholic

fatty liver disease (NAFLD). Prince Clarence is making great progress in his attempt to develop a herbal compound that has shown great promise in the fight against cancer. Sevanand Melookunnel has been active for many years in the field of indigenous herbal medicines, serving particularly the poor in various parts of India. He has trained many young people to carry on his great mission.

Agriculture is another area in which the young Jesuits are showing great interest. Maria Packiam of the Institute of Entomology in Chennai has been

addition, he is making great progress in his research on producing special fruit-yielding trees. Chandy Kumblankal, a specialist in Agricultural Sciences, has been working in this field for many years. He has published widely to disseminate his ideas and findings in the agricultural world.

Jesuit scientists in India are most noted for their contribution to environmental protection. Tarumitra in Patna under the leadership of Robert Athickal, the centre in St. Xavier's College in Kolkata under Xavier Savarimuthu, the centres in Shembaganur and Trichy under K.M. Mathew in the past and John Britto at present, are some well-known epicentres of this apostolate.



Training programme to tribal people

working on producing effective pest control products for farmers, made out of simple, environment-friendly natural sources. Along with Ignacimutu and the Entomology team he has contributed towards the production of Ponneem. Jojo Reddy has teamed up with the farmers in their fight against bacterial blight disease. Melvin D'Cunha's research focuses on certain plants that can enrich the soil and serve as fodder. In

Conclusion

Though the establishment of the Society of Jesus (1540) coincides with the beginning of modern science and specifically natural history, serious Jesuit scientific engagement in the Life Sciences in India began with the Restoration. We are aware that the presence of Jesuits in science all along the history of the Society with several leading personalities. The foundation for their work is to be traced to the Ignatian apostolic spirituality of finding God in all things.

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Gaudete et Exsultate : The going against the flow

'Going against the flow' aptly summarise the pontificate of Pope Francis. His prophetic gesture of washing the feet of women on Holy Thursday, his surprise visits to orphanages and hospitals as part of "Fridays of Mercy", his striking simplicity of life are a few examples this. These are ordinary deeds done in an extraordinary way [GE 17]. The apostolic exhortation *Gaudete et Exsultate* (Rejoice and Be Glad) is a call to holiness in today's world. Holiness is not confined to priests and religious but it is meant for all. One is invited to live in holiness in the hustle and bustle of life. Holiness is nothing but 'going against the flow' [GE 65-94]. Let us look at the main features of GE in the light of Ignatian spirituality.



Image Source : Google

In the Light of the Master

The chapter, "In the Light of the Master", is at the centre of the exhortation. A life of holiness flows from being rooted in Christ, having an interior knowledge of our Lord [SE 104]. While choosing the name 'Company of Jesus' Ignatius and his companions firmly believed that they had no other head but Jesus. As the exhortation underlines: "The contemplation of these mysteries [of the Life of Christ], as Saint Ignatius of Loyola pointed out, leads us to incarnate them in our choices and attitudes" [GE 20]. So Christ becomes the norm for a Christian and one's life is shaped by the beatitudes as it is the identity card of Christians [GE 63]. The beatitudes invite one to be counter-cultural, to swim against the current: being poor of heart, accepting daily the path of the Gospel, even though it may cause us problems... this is holiness [GE 65-94].

Holiness: living our lives with love

Pope Francis emphasizes: "We are all called to be holy by

living our lives with love and by bearing witness in everything we do, wherever we find ourselves" [GE 14]. Such holiness makes us more alive and more human [GE 32-34]. Holiness for a Jesuit means loving and serving the Divine Majesty in all things [SE 233]. "We are called to be contemplatives even in the midst of action and to grow in holiness by responsibly and generously carrying out our proper mission" [GE 26].

The saints "next door"

At Loyola (1521) Ignatius thought of holiness in terms of imitating the saints by doing extreme penance and fasting [AB 7]. But when he was in Rome in 1538, holiness was in finding God in all things [AB 99]. "I like to contemplate the holiness present in the patience of God's people: in those parents who raise their children with immense love, in those men and women who work hard to support their families, in the sick, in elderly religious who never lose their smile... Very often it is a holiness found in our next-door neighbours, those who, living in our midst, reflect God's presence" [GE

7]. The exhortation even speaks about the ‘feminine styles of holiness’. “I think too of all those unknown or forgotten women who, each in her own way, sustained and transformed families and communities by the power of their witness” [GE 12].

Obstacles on the way

The exhortation indicates clearly “neo-Gnosticism and neo-Pelagianism” as the subtle enemies of holiness. Narcissism which is the core of this pseudo-holiness enhances self-love, self-will and self-interest [SE 189].

Neo-Gnosticism: Christian life bereft of periphery

Contemporary Gnosticism presumes “a purely subjective faith whose only interest is a certain experience or a set of ideas and bits of information which are meant to console and enlighten, but which ultimately keep one imprisoned in his or her own thoughts and feelings” [GE 36]. Here spirituality remains only at the domain of reason and devoid of human reality. Ignatian spirituality being an affective spirituality [SE 2, 3] impels one to incarnate oneself into the reality of the marginalized.

Neo- Pelagianism: Christian life bereft of God’s will

“Still, some Christians insist on taking another path, that of justification by their own efforts, the worship of the human will and their own abilities. The result is a self-centred and elitist complacency, bereft of true love” [GE 57]. The SE is a combination of human efforts (SE 12: five hours of prayer) and divine grace (SE 63: colloquy). But when we put ourselves above the gospel, when we lack humility, when we place our entire trust in our talents, assets, and past glory the Society and Christianity becomes a sort of NGO [GE 100].

Inner Freedom: an ever-abiding attitude

Pope Francis underlines that “spiritual poverty is closely linked to what Saint Ignatius of Loyola calls ‘holy indifference’, which brings us to a radiant interior freedom” [GE 69]. The theme of inner freedom is found in all the key exercises of the SE and also in the process of discernment. Inner freedom reflects one’s attachment to God which is clearly articulated in the prayer of The Contemplation to Attain Love “Take, Lord and receive” [SE 234] - as the ever-abiding attitude.

Joy and sense of humour as holiness

People who are inwardly free are joyful and have a sense of humour amidst difficulties and struggles of life. “Far from being timid, morose, acerbic or melancholy, or putting on a dreary face, the saints are joyful and full of good humour” [GE 122]. Ignatius, at Loyola, was able to make a distinction between a joy that was passing and one that was lasting [AB 8]. Addressing the Jesuits during GC 36, Pope Francis said: “One of the expressions of deep joy is a sense of humour. I think it is a grace we have from God. To my way of thinking, the human attitude closest to divine grace is the sense of humour.”

Boldness (Magis) as holiness

Boldness is one of the signs of holiness in today’s world. It is the fruit of inner freedom. While responding to the queries of the delegates of GC 36 Pope Francis noted that magis is parresia. Parresia is prophetic audacity. Pedro Arrupe termed it as “a certain apostolic aggressivity”. Given what is happening in our country the need of the hour is to be bold and passionate - an essential part of our mission [GE 129-139].

Community as holiness

“Growth in holiness is a journey in community, side by side with others” [GE 141]. “The common life, whether in the family, the parish, the religious community or any other, is made up of small everyday things” [GE 143]. GC 36 has reiterated that community itself is mission. “This life together is always at the service of mission, but because these fraternal bonds proclaim the Gospel, it is itself a mission” [GC 36, d.1.9].

Constant prayer as holiness

The inner freedom enables one to have a “habitual openness to the transcendent, expressed in prayer and adoration” [GE 147]. It is living in the attitude of gratitude and remembrance [GE 153, SE 233]. In our busy schedule we need quality moments of silence to be with the Lord so as to offer quality service in the world.

Discernment as the key in Going against the flow

Christian life is a constant battle [GE 158] and there is a need to be alert and discerning to lead a life of holiness [GE 158-175]. “Always ask the Spirit what Jesus expects from you at every moment of your life and in every decision you must make, so as to discern its place in the mission you have received” [GE 23]. Here the Cross becomes our logic [GE 174]. Discernment is “an authentic process of leaving ourselves behind in order to approach the mystery of God, who helps us to carry out the mission to which he has called us, for the good of our brothers and sisters” [GE 175]. One of the tools for ongoing discernment is the ‘examination of conscience’. “I ask all Christians not to omit, in dialogue with the Lord, a sincere daily ‘examination of conscience’” [GE 169].

Conclusion: No room for mediocrity in holiness

Pope Francis says that the Lord “wants us to be saints and not to settle for a bland and mediocre existence” [GE 1]. Fr. Kolvenbach pointed out that mediocrity has no place in Ignatius’ world view [GC 34, d. 26, 26, Cf. SE 97]. Today, our Lord beckons us to holiness! Are we ready to “go against the flow’ in our life and mission?”

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ERI: A Jewel in the Crown of Loyola- Chennai



Entomology Research Institute, Chennai

Introduction: A Brief History

The Entomology Research Institute (ERI) was one of the many initiatives taken by the Jesuits of the Madurai Province to concretely promote intellectual apostolate in India. Housed in the campus of Loyola College, Chennai, Prof. T.N. Ananthkrishnan was the founder in 1963 of this internationally reputed research institute. In 1992, as he was getting old, he was looking for someone highly committed who could take care of ERI. So he appealed to the then Provincial (Fr. Aloysius Irudayam, SJ.) asking him to send me to work with him and get trained to lead ERI. Already from 1990, there was some difficulty in getting more projects since funding agencies were less enthusiastic to support research related only to insects. Hence once I joined ERI, we decided to expand the fields of research so as to bring more funding. These included biodiversity, biopesticides, biological control, insect taxonomy, molecular biology, bioinformatics, microbiology, genetic engineering, tissue culture, marker assisted breeding, biochemistry, medicinal chemistry and discovering drugs from natural resources to combat diseases. We also decided to take up extension activities to help people, especially farmers and students.

When I took charge as Director in 1996, we concentrated on interdisciplinary

research projects with societal commitment. We added one more floor to ERI with funding from the Government of Japan and MacArthur Foundation, USA. Around this time ERI also got recognition from Madras University as a separate centre to conduct research leading to doctoral degree with its own staff structure. This was an important milestone in the growth of ERI.

Mission

The institute's mission is "to create a better world through research, publications and extension activities in the realms of environment, sustainable agriculture and human welfare by evolving alternate eco-friendly technologies and by training students and farmers to become agents of environmental protection and sustainable agriculture."

Personnel

Prof. Ananthkrishnan was involved in the activities of the institute from the beginning. He was the only one who was guiding doctoral students until I joined in 1993. After my arrival we appointed five lay scientists to guide doctoral students in various fields of biology and medicinal chemistry. Fr. Maria Packiam, SJ, joined the team from 2013 along with his teaching in the College. There are also a few emeritus scientists assisting the students. From 1994 to 1996 I had the opportunity to do my Post-Doctoral

research in reputed state Universities of Germany, Switzerland, Japan and USA. This gave me additional modern skills to carry research forward.

Some achievements

In the early years, extensive studies were carried out on the taxonomy of thrips, gall forming insects, host-parasite interactions and sporophagous insects. Later, various studies on the bioenergetics, chemical ecology, behavioural ecology and reproductive ecology of plant feeding insects, tritrophic interactions between plants, insects and natural enemies were conducted. This institute also occasionally published 'International Cecidology Newsletter' and an international journal 'Phytophaga' devoted to research papers on insect plant interactions.

Science at the service of common men and women

After my arrival at ERI we started providing services to farmers, poor women and women self-help groups (SHGs). One of the first things we did was to alleviate the suffering of the farmers by encouraging the use of natural plant-based botanical bio-pesticides in place of synthetic chemical pesticides to control insect pests, thus helping them also to promote organic farming and sustainable agriculture. This was initiated to overcome the ill-effects of chemical

pesticides on the environment, animals, and humans. Hands-on training and demonstration programmes were conducted.

With the involvement of our research students and scientists we developed after many years of research a new botanical pesticide named PONNEEM. This pesticide is liked by farmers all over India and millions are benefiting by it. We have also taught farmers how to prepare it so that they need not depend every time on the company.

Novel Bio-pesticides

We have tested thousands of plants from various parts of India for their insect control efficacy, and recommended some of them to be used by farmers in preparing homemade formulations to be sprayed in the fields. Many plants have also been screened as protectants against pests to safeguard stored pulses and grains. Various plant seed oils and volatile oils were also studied for their insecticidal, insect repellent and insect growth regulating effects against agricultural pests, household pests, and vector mosquitoes.

We have also developed a few eco-friendly products from plant seed oils and volatile oils to overcome mosquito menace. Some can be spread in water bodies to control mosquito population. Others are natural mosquito repellent bio-product used as spray, incense stick and coil to keep mosquitoes away.

Novel mosquito control agents

We have identified many natural biomolecules from plants and microbes which can be used to control insect pests and microbial pathogens. Some of these are very useful for farmers. Apart from these, we have carried out extensive research in medicinal plants used by people to treat cancer, diabetes, inflammation, tuberculosis, and obesity.

An edible biscuit formula has been developed to control fat accumulation in the body. A polyherbal formulation has been developed to alleviate diabetes. Through some companies we have made



efforts to promote traditional varieties of food for better health benefits. Through our research we have multiplied many endangered medicinal plants employing tissue culture, and planted them in natural habitats. We have also supplied saplings to many traditional healers to be cultivated in their herbal gardens. We have validated many traditional claims of tribal healers who use medicinal plants to treat diseases. We have also documented their claims and published books.

We have also contributed much in conservation of endangered medicinal plants and pollinating insects. We have documented the biodiversity of insects, plants and fungi. They are preserved at ERI for future reference by scientists and others. Using insects as biological indicators, we are studying the impact of climate change on life. One insect species is named *Jacthripsignacimuthui*.

Marker assisted breeding

We have conducted many environmental awareness programmes and sustainable agriculture trainings for thousands of farmers (men and women), self-help groups, and students on various aspects related to biopesticides production, vermicompost preparation, mushroom cultivation, medicinal plant gardens and organic farming. Because of our training efforts, many have volunteered to serve as agents of environmental protection. These training programmes also help the target people to start self-employment ventures.

Every year we organize a national symposium in February. Scientists, professors and research scholars present their finding at this symposium.

Recognitions

Prof. Ananthkrishnan was selected a fellow of three prestigious national science academies. He was conferred the Pitambar Pant Award and the Rafi Kidwai Award by the Government of India. He was appointed the Director of the Zoological Survey of India, Kolkata, for a period of three years. Many insect species are named after him. Fr. Ignacimuthu, SJ was selected as a fellow of the prestigious National Academy of Agricultural Sciences, New Delhi. Besides this, he was also a fellow of many other academies in India and abroad. He was also awarded the Tamil Nadu Scientist Award, best book award, and Kamarajar Award by the Government of Tamil Nadu.

Jesuit Character

ERI has been bearing witness to some of the important characteristics of Jesuit intellectual apostolate by promoting depth of thought and creativity, rigorous exercise of the intellect, finding solutions to contemporary problems, application-oriented research, considering the needs of the poor and the vulnerable, and above all striving for the magis by taking up cutting edge research. The Jesuit hallmark of excellence is promoted very well by ERI as it is acclaimed as a centre of excellence nationally and internationally. One of the former Principals of Loyola College said: 'ERI is a jewel in the crown of Loyola.'

Looking ahead

Through its high-quality research, impact making publications, and beneficial extension activities, ERI continues to make a mark in the lives of people inspired by the Society's commitment to rigorous intellectual apostolate. The future of the institute is bright due to its commitment to magis and excellence.

The author is involved in research and publication. He is also a visiting scientist at many universities in India and abroad.

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THOUSAND WORDS





“

An unreflected
experience is a
lost experience.”

| SOCRATES



Sci-Tech for the poor: A preferential option of LCRD



The Background

Post 1969... I was completing my novitiate. We Jesuits were assiduously proclaiming our “Faith and Justice” mandate, our “preferential option for the poor”. The ‘Social Activists’ became the proclaimed flag bearers of this Vision-Mission, and the social action apostolate donned its mantle and came into its own. However, I had perceived a ‘call within a call’ to be a Jesuit scientist. Bewildered, I observed their intense response and felt challenged. I questioned myself about the relevance of my calling.

My critique of all their well-intentioned initiatives was: “at the end of the day the poor and marginalized have to face ‘the bread and butter’ question.” Were the social action groups addressing this effectively? I believe that even today they are acutely aware of the inevitability of the problem... are sincerely struggling for solutions... but have had limited success in discovering effective answers.

We live in a globalizing world, science-technology driven, and promoting a knowledge society. Our commitment to the “faith that does justice” mandate today must, therefore, be expressed by Jesuits in terms of a “science-technology option for the poor”. The science and technology of such an option must

be driven by ‘innovation’, a characteristic that is inherent to our Jesuit Charism. Such innovation is at the heart of the entrepreneurial enterprise which again is within Jesuit capabilities, as the history of “the Paraguay Reductions” in South America successfully demonstrates.

Xavier Research Foundation (XRF)

The Xavier Research Foundation (XRF), Ahmedabad is a Gujarat Jesuits’ daring venture to walk this talk (the Province has put its money where its mouth is, and has established a significant corpus to support this work). Its short history of thirty years bears out that the talk is right though the walk is strewn at times with obstacles and hurdles; but the latter have not been insurmountable and we are on the move in the right direction and getting there!

Loyola Centre for Research and Development (LCRD)

The XRF began through a forerunner institution, called the Foundation for the Health and Human Sciences (FHHS), started in 1987. It was tucked away in a small room of St. Xavier’s College, Ahmedabad. Within a year its significance and success

prompted expansion and doubling of space. It was shifted to an independent building on campus and named the Loyola Centre for Research and Development (LCRD) and inaugurated quite appropriately on July 31, 1991, by the Governor of Gujarat. It continued to be administered by the St. Xavier's College Society.

The Xavier Residence Jesuit community made this move to give research on campus a concrete visible face, and on the occasion of the double Jesuit jubilees being celebrated then. It wished to explore research in science and technology, and other disciplines, in the service of the poor.

In 1995 the Provincial encouraged the setting up of a new independent trust, the Xavier Research Foundation (XRF), to administer the LCRD as an autonomous research unit. Significantly, it was his intention that this Jesuit Research Centre, through such a step, be safeguarded from being usurped by statutory government injunctions aimed at takeovers of our educational institutions. It reflected once again a distinct Jesuit choice and commitment!

Vision and Mission of LCRD

The vision- mission of this apostolic venture motivates it to work on low-cost table-top technologies to enable the livelihood options for our marginalized and discriminated target communities. This has always been a key goal on the radar screen of the Centre. In the thirty one years of its existence it has refined its understanding of its Vision, Mission, and Values (VMV). Today it drives scientific research in all fields towards innovations, to fuel livelihood options through entrepreneurship, and forges ahead to incarnate the Jesuit option for the poor, in the area of Science and Technology so that its benefits to its poor and socio-economically disadvantaged stakeholders is visible and tangible.

It is heartening and fulfilling for me to go to the Centre every morning. I am moved to see how this VMV touches and inspires not just me as a Jesuit, but equally importantly, the Centre's staff of around twenty: professional scientists, research assistants, computer support staff, and administrative staff. Besides, there are research scholars and dissertation students from various parts of the country.

Some achievements of LCRD

A measure of its scientific success is that today it is a recognized Research Centre of the Gujarat Forensic Sciences University (GFSU) and as its Director I am recognized as a guide for Ph.D research scholars. Similar recognitions from three other Universities have enabled me to currently guide seven students, and an eighth is expected to join in the present academic year.

The calibre of the output of XRF can be measured by the posters, presentations and papers it has produced, and the prizes these have won repeatedly at different regional, national and

international events. Further, in 2009 the Ministry for Micro, Small and Medium Enterprises (MSME), Government of India (GoI) recognized it as an incubation centre for entrepreneurship and a unit called the Xavier Research Foundation - Business Incubator (XRF-BI) was set up. Since then over a dozen innovative scientific ideas have received grants from MSME and research work on their proof of concept has been carried out at XRF-BI. Eight of these have resulted in products that we now look forward to move towards income generation and livelihood options.

In 2013 the LCRD was recognized as a Scientific and Industrial Research Organization (SIRO) by the Department of Scientific and Industrial Research (DSIR), Ministry of Science and Technology, Government of India. The recognition was extended in 2016 for three more years. This status is significant as it makes the XRF eligible for grants from State and Central Government statutory science and research bodies. A woman

scientist at the centre was awarded a Department of Science and Technology (DST) grant to initiate tribal women in rose (a special variety) cultivation and value addition.

Reaching out to the socially marginalized

In our work of interfacing such groups to the Sci-Tech arena we have implemented projects to train SSC and HSC dropouts from our rural and tribal areas, in plant tissue culture (an important technique in modern biotechnology). In these projects we have seen and proven effectively that our tribals are capable of mastering and handling these technologies.

Our role must be to avail them of the opportunity so that they can then mobilize these technologies for sustainable livelihood relevant to their needs and circumstances. When the world today is seeking relentlessly to establish a knowledge society, we are also called to safeguard the traditional science and technology knowledge of our marginalized communities from exploitation. Harmonious integration of these with current world Sci-Tech is called for and is implied in the preferential option of Sci-Tech for the poor.

Looking Ahead

In this scenario this is where the Jesuit of today must be! This is where we as a Jesuit band at the XRF ARE! We look forward meaningfully and happily to continue the walk. The LCRD completed its silver jubilee in 2012. Silver done... we are now going for gold.

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Loyola Institute of Frontier Energy (LIFE)

People oriented Research

The 'care of souls' and 'deep learning', mentioned as the hallmark of the Jesuits in the Formula of Institute (nos. 1 and 9), should be the propelling dynamism of every Jesuit in his service of people, for 'the Jesuits attempt to discover, shape, renew or promote human wisdom, while at the same time respecting the integrity of disciplined scholarship' (GC 34, 404). Whatever a Jesuit does should have relevance and meaning for the people he lives with. In today's world of science and technology, the advancements should be focused on the needs of the people and Jesuits, as men of learning, should work for enriching and enhancing the quality of lives of the people, especially the needy in society. Keeping this in mind, Loyola Institute of Frontier Energy (LIFE) at the Loyola campus in Chennai has been promoting research, not merely for the sake of advancing knowledge but mainly for application and use in day-to-day life.

Beginning and growth

Francis P Xavier, SJ, returned from the USA in 1992 after his doctoral research. He then discussed with a few faculty members and explored the possibility of concerted efforts to promote people-oriented research. In 1995 he founded Loyola Institute of Frontier Energy (LIFE) in a one-room office-cum-lab (which later grew into a three-storey building). LIFE could provide spacious labs for Physics, Chemistry, and Biology with an instrumentation centre (for sophisticated equipment), library, and an auditorium. LIFE has opened up research facilities for MSc, MPhil, and PhD scholars.

Vision/Mission of Research at LIFE

The vision of LIFE reflects the expectation of GC 34: "Jesuit universities will promote interdisciplinary work; this implies a spirit of cooperation and dialogue among specialists within the university itself and with those of other universities" (GC 34, 413). The research activities at LIFE focus on the needs of the people: energy, environment, and ethics. Though researchers are mainly from three disciplines (Physics, Chemistry, and Biology), they work on the common needs of the people especially in the Indian context where there is need for solar energy; where the environment needs to be protected from pollution and other adverse elements affecting ecology. Also, LIFE monitors whether the research in today's world is based on bioethics.



Loyola Institute of Frontier Energy (LIFE) at the Loyola campus in Chennai

Architects of LIFE

The initial team, under the leadership of Francis Xavier, SJ, consisted of Dr Selvanayagam, Fr. John Pragasam, SJ, Dr Nagaraja, and Dr Vincent. Later Fr. Jeyaraj Boniface, SJ, and Dr Merline Shyla joined the team. Dr John Mary, Dr Vijayakumar, Dr Victor Antony Raj, and others continue with research now. Dr Swaminathan, an alumnus of Loyola College, after his research and administration with Union Carbide rendered his service not only as a consultant but also as mentor to many of the doctoral students, especially in Chemistry. As the scope of research broadens, the activities of LIFE will be extended and a fourth storey put up.

Achievements of LIFE

Already in 1995 the concept of multidisciplinary research was realized. Right from the beginning the research team was particular in dissemination of information based on research. The research scholars meet once a week and share their progress in research. National/international seminars are held annually and the proceedings are brought out for the benefit of others. At the end of each academic year, the progress made in research by each scholar is critically reviewed by external experts and valuable suggestions offered. In order to promote further research a journal, Convergence, was started that periodically publishes interdisciplinary research articles based on energy and the environment.

Some of the topics of the annual Conferences were: 'Materials for Energy and Environment' (2018), 'Engineering Response to Climate Change' (2016), 'Green Energy for Sustainable Development' (2011), 'Sensor-Development for the Assessment and Management of the Environment' (2009), 'Biodiversity, Bioresources and Biotechnology for Sustainable Livelihood of



Endowment Lecture at LIFE

Rural Community' (2008), 'Environmental Biosensors' (2007), 'Environment and Bioethics' (1999), 'Material for Energy Conversion' (1998), 'Conducting Polymers' (1995), etc.

The contribution of LIFE has been commended by NAAC committee while assessing Loyola College for academic autonomous status. LIFE was instrumental in getting the unique tax exemption (for research) from the Government of India in 2013 for Loyola College Society.

Relevance

In keeping with the spirit of GC 34, which states that 'for the poor, they (Jesuit Universities) serve as major channels for social advancement' (GC 34, 405), LIFE takes pains to bring fullness of life to the needy and the marginalized. A few of the research areas, that are people oriented, are indicated here.

In India where there is bright sunshine round the year and where electricity is expensive, solar energy needs to be exploited. Using organic photoconductors research was carried out for application in solar panels. A few innovative strategies that are underway at the Energy Nanotechnology Centre of (ENTeC) of LIFE are plasmon impregnation into Dye-Sensitized Solar Cells (DSSCs) and Perovskite Tandem Solar Cells (PTSCs) with a dual light-trapping mechanism, aimed at improving cell performance several times over.

There is a universal shortage of drinking water. Water pollution is addressed making use of organic filters or purifiers. This is a boon to those in rural areas who have very little access to pure drinking water. Developing gas-sensors is another area of research to help monitor the quality of air.

Due to air-pollution, sea-breeze, etc. corrosion is needs to be addressed. Electrochemical behaviour of implantation metals

under different environment, and corrosion resistance of green inhibitors are studied. Corrosion of biological implant metals are studied, especially corrosion resistance of biomaterials in blood plasma. This would have medical applications.

Industrial effluents, with heavy metal ions such as chromium, mercury, etc. affect the fish which ingest them. This in turn affects the kidneys of humans when fish is consumed. This is another important area of research in ecological study and environmental protection.

Using the satellite map the vulnerable areas in the city are studied so as to inform the Government of possible floods in order that pre-emptive action can be taken.

In order to develop environmental-conscious citizens, LIFE has conducted a number of awareness programmes for students, and helped in developing baseline data on biodiversity through projects funded by the Government of India.

These are the major areas of research at LIFE. Other related research is going on.

The quality of a tree is known by its fruits. The students of LIFE are today serving not only the nation but are at global service. LIFE is proud that her students are serving in other nations: UK, Belgium, Singapore, Japan, New Zealand, Portugal, Tanzania, Italy, etc. They continue to work for humankind in order to make this universe more liveable. A few patents, the outcome of research at LIFE, have been registered. The social relevance of research at LIFE has attracted Major Research Projects (completed/ongoing) from the Government and private agencies like DST, SERB, DBT, BRNS and Times of India.

Future Direction

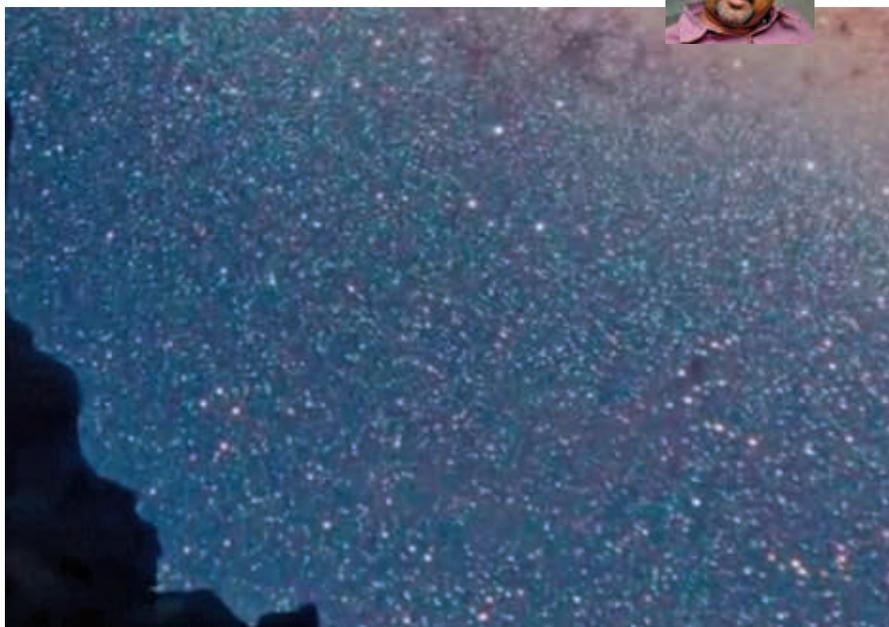
It is the dream of the founding members that LIFE should become an institute capable of offering MPhil and PhD degrees in the multidiscipline of energy, environment, and bioethics. Efforts are made to realize this. Research collaboration is another area LIFE has strived for all along. Starting with other educational institutions on campus, LIFE makes efforts to build research collaboration on the national as well as inter national levels to enhance research that is helpful to the common people. In this LIFE strives to do ever more and ever better.

The author is the Founder of Loyola Institute of Frontier Energy (LIFE). He is the Gasson Professor at Boston College, USA, for the academic year 2017-2018. He is the Global Vice President for Academics and Research in Jesuit Worldwide Learning (JWL) in Geneva.

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Jesuits and Physical Sciences



Vincent Arthur Smith (VA Smith), who worked in India from 1871-1900 as an ICS officer, observed in one of his books that among the various branches of science, Jesuits always had an inclination towards astronomy and geography. He credits Fr. Anthony Monserrate (1536-1600) as the first European since Ptolemy to draw a map of India. He is said to have recorded accurately all the mountains, rivers and cities that lay between Goa to Kabul. Fr. Claude Stamila Boudier (1687-1757) was a reputed astronomer. Fr. Calmette worked in the Carnatic Mission and discovered the similarity between the Indian and European Zodiac. Joseph Tieffenthaler (1710-1785) was a missionary geographer. He travelled extensively and wrote about the geography of India.

After the Restoration of the Society Fr. Eugene Lafont (1837-1908) of St. Xavier's College, Kolkata, laid the foundation for Science teaching, and created interest for Science research in India. Credit goes to him for producing great scientists like J.C. Bose, P. N. Bose, and P. C. Ray. Fr. Lafont started a series of popular scientific demonstration lectures for the public. During the cyclone of November 1867 he made meteorological observations accurately using an Aneroid Barometer for thirty hours. Later he built a meteorological observatory. Many secular historians call him the founder of contemporary science movement in India.

Some more Jesuits who brought Science to the people

Fr. Desire Honore (1862-1934) popularized the study of Physics and started the Physics honours course at St. Joseph's College, Trichy, in 1914. After the university reforms initiated by Lord Curzon, he was appointed examiner for Physics Honours and later on Chairman of the Board of Examiners. In 1922 after the Madras University Act was passed, he was appointed as a member of two University Commissions and was invited to report on the feasibility of founding a University in Kerala. Fr. Charles Pruvot (1871-1949) was a great Mathematics teacher at

St. Joseph's College. He popularized the study of Mathematics and was a member of several Commissions of the University of Madras. Fr. Augustine Haas (1869-1957) joined the Department of Chemistry in 1904 and worked in it for fifty years. Fr. Francis Laurent (1886-1963) taught Physics and spent his time and energy in the Physics laboratory for seventeen years. He bought very few items since most of the items/apparatus in the lab were made by him.

Two Jesuits stand out both as scientists of eminence and outstanding teachers of science – Fr. Lourdu Yedanapalli in Chemistry, and Fr. Racine in Mathematics.

Fr. Lourdu M. Yeddanapalli

Fr. Yeddanapalli (LMY) was HoD of Chemistry at Loyola College from 1946 to 1970. During this period his contribution to chemical education and research in India was outstanding. About 360 Chemistry students (BSc. Hons, MSc. and PhD), guided by him have become eminent professors, research chemists and administrators (IAS, etc.) in India and abroad. From 1970 the Indian Chemical Society (Kolkata) has been awarding biannually the Fr. L.M. Yeddanapalli Medal for outstanding research in Physical Chemistry done in India.

Fr. LMY also took keen interest in school-level chemistry courses. He attended the "UNESCO Pilot Project for Chemistry Teaching in Asia" held at Bangkok from Nov 1965 to Jan 1966. With funds from NCERT (National Council of Educational Research and Training, New Delhi) he and his group prepared textbooks, lab manuals and teachers' guides for students of Std. VI to X, and conducted two summer schools for high school Chemistry teachers. Fr. LMY was a member of several professional organizations like the Plastic Research Committee (CSIR, New Delhi), and the Chemical Research Committee (CSIR). He was also a member of the Syndicate of University of Madras (1959-62; 1964-67). His research interest covered areas like polymer chemistry, kinetics of polymerization, catalysis of gas/vapour reactions at solid surfaces and gas



kinetics. Today the teaching of catalytic science and real-life technological applications of catalysis are on firmer footing in India thanks in part to generations of scientists who came out of Fr. Yeddanapalli's 'School of Catalysis'.

Fr. Charles Racine

Fr. Racine was born at Tonnay-Charente, France, in 1897. He enlisted for active service during WWI 1916 but got an ankle injury that left him limping for the rest of his life. He joined the Society and was ordained in 1929. He spent four years in Paris doing research in Relativity for his doctorate in Mathematics. In 1934 he was awarded the coveted 'Docteur es Sciences' at Paris University. He was at St. Joseph's College, Trichy (1936-39) and was transferred to Loyola College to head the department in 1939. He remained there till his death on July 8, 1976.

Fr. Racine wrote three books and published many research papers in Mathematics. He was instrumental in placing India on the contemporary map of Mathematics. The Govt. of France conferred the Legion d'Honneur on him for his contribution to Mathematics and university education in India. He was the President of the 38th Indian Science Congress held in Bangalore in 1951. He began weaning some Indian mathematicians away from traditional Cambridge-inspired areas into the then contemporary European thinking in Mathematics. Racine encouraged his best students to join the newly established Tata Institute of Fundamental Research (TIFR). This explains why so many mathematicians who were the leaders in TIFR came from Tamil Nadu.

The Alumni from Loyola College working at TIFR got together in 1957 when they learnt that Fr. Racine was turning 60. They instituted the Racine Prize – the Shastiadapurthy Prize – to be awarded to a young mathematician with the best contribution to Mathematics. In 1987 a portrait of Fr. Racine was unveiled at the Math-Science Institute (Ramanujam Advanced Centre for the Study of Mathematics of the University of Madras), as one of ten eminent mathematicians.

Fr. Mathew Thekkakkara

Fr. Mathew is a physicist who has been working at the Goddard Space Flight Centre of National Aeronautics and Space Administration in Green Belt from 1964. He has made tremendous contribution to space exploration, and received awards from NASA.

Fr. Caius

Fr. Caius, a member of the new Madurai mission, was invited by the Bombay Presidency to set up a pharmacological unit in the Presidency. He was also appointed as the Indian representative on the Commission of the Health Committee of the League of Nations.

Loyola Institute of Frontier Energy (LIFE)

An effort was made at Loyola College, Chennai, in 1993 to bring Physical Sciences and Life Sciences together for interdisciplinary research. (For details, Ref. Article on LIFE by Fr. F. Xavier, SJ in this issue on Pg 18)

Conclusion

The contribution of Jesuits to the Physical Sciences has been at three levels. Firstly, they contributed to the growth of science awareness in the country. Secondly, some of the Jesuits have contributed substantially through their research. Thirdly, they have strengthened science in their own institutions moving to interdisciplinary research bringing both the Physical and Life Sciences together.

The author is a Historian and a Senior Fellow at Loyola Institute for Social Science Training and Research (LISSTAR) Loyola College (autonomous), Chennai.

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Ecology Contribution of Karnataka Jesuits



Eco-club at De Nobili College, Pune



deforestation on soil, flora, fauna of the district. They also studied the ill effects of forestation that used non-native trees; such forestation causes considerable imbalance in the local environment. In association with the Dept. of Sociology,

Fr. Cecil Saldanha, SJ, did his Ph.D. in Botany. After his priestly formation, he continued his interest in botanical studies and spent a lot of time in the Kew Gardens, UK. As the Vice-Principal of St Joseph's College, Bangalore, he enjoyed moving through the jungles on weekends and made a scholarly study of the Hassan Flora. Environment was his passion. He wrote a book on the Flora of Karnataka, a work supported by the Department of Science and Technology, Govt. of India. He was asked to do an in-depth study of the Andaman Nicobar as well as the Lakshadweep islands by the Island Development Authority of the Planning Commission. He was on the commission to study industrial pollution in Karnataka and elsewhere. He was the Founder-Director of the Taxonomy Centre, St Joseph's College, Bangalore. He was the recipient of awards for Ecology from the Govt. of Karnataka, and the Pitambar Pant National Fellowship for Ecology from the Govt. of India.

Fr. Cecil was a great scholar and thinker. Every project he took up showed originality and a sense of dedication. His scholarship is manifested by the many books he wrote, articles he published, and reports he produced. He was down to earth, and never waited for others to do the work for him. He would himself go in search of every detail.

He had a vision for Karnataka and India, not just for the institution. Environment being his passion, he would go to any extent and fight for justice, get things going from the industries, and the forest department. He never hesitated to speak his mind.

Fr. Leo D'Souza, SJ, Founder-Director of the Laboratory of Applied Biology (LAB) and his team at St Aloysius College, Mangalore, carried out a study on the effects of large scale

Fr. Leo studied the socio-economic effects of such changes in village life especially with regard to the occupation of persons who depend on forest produce for their livelihood. The team is working on the biodiversity of local varieties of rice, sugarcane, and ragi using molecular markers. They are also engaged in studying the possibility of using plant waste into bio-fuels.

St Aloysius College has a vermin-technology unit. It has helped to spread the message of using earthworms for management of domestic waste. Dr. Hareesh Joshy has enthused several colleges, self-help groups, parish communities to take to vermin-technology. He has developed a novel vermin bin for use in households to convert waste into useful compost. He has prepared a handbook "Effective Environment Protection" published by the Ecology Commission, Karnataka Jesuit Province.

Fr. Melwyn D'Cunha, SJ, at St Aloysius College, Mangalore, has been studying the association of Canavalia, a leguminous plant of the coastal dunes with various Mycorrhizal fungi. This association is found to bind the soil and enrich it. He is also studying the possibility of using the plant as a source of nutrition for animals and humans. In association with the Royal Technical Institute of Sweden, Stockholm, he is investigating the ultra structure of the Mycorrhizal spores. Melwyn D' Cunha, SJ, is involved in strategic initiatives in pursuit of conservation of nature and natural resources. Among the initiatives, he is encouraging all the campuses of Jesuit colleges to be clean, green and pollution free, and to ensure that flora is protected and knowledge of biodiversity is imparted to students. In 2016, Melwyn successfully raised a couple of varieties of saplings of

fruit bearing trees which are planted in and around Mangalore.

He also initiated and managed a project by the NMFP for starting a degree course. He established a pilot plant for food processing, especially local fruits and vegetables, under the Ministry of Food Processing Industries (MFPI), Govt. of India.

Melwyn has been involved with the Ecology Commission of the Karnataka Jesuit Province for over a decade. The creation of a water harvesting system at St. Aloysius PU College and establishing water treatment plant in the men's hostel are his initiatives.

Biodiversity studies have been carried out on campus with the assistance of staff and students in collaboration with scientists from the IISc. Mapping of the campus has given us the data on the need of carbon sequestration process by enhancing green vegetation in the campus. Rain water harvesting has been carried out in some of the buildings. BBMP has invited St. Joseph's College to the tree mapping project of Bengaluru City. The College has taken initiative to prepare seed balls in collaboration with the forest department so as to participate in their forestation project.

Fr. Sebastian Fernandes, SJ, is an agriculturalist who has spent a number of years in the midst of the lush green hills of Gudaloor estates. As the first co-ordinator of the Ecology Commission he was instrumental in giving an impetus to ecological awareness in the Province.

The Author of the article is a budding environmentalist with an MSc in Environmental Sciences. He is the present co-ordinator of the Ecology Commission of the Province. He has been involved in planning and executing various ecological programmes. He has been the coordinator of Srishtimitra, an Eco-club at De Nobili College, Pune. He was instrumental in introducing many innovative ecological programmes at DNC such as nature walk, waste segregation at source, each one plant one, and vermin-composting. He also paved the way for ecological collaboration with other religious.

The author is currently the Secretary and Treasurer of the Bijapur Mission in Karnataka. He is the Province Coordinator of the Ecology Commission.

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NEWS

NATIONAL NEWS

Socio-Cultural Analysis cum Workshop at ISI, Bengaluru

Indian Social Institute, Bengaluru organized a fifteen-day Socio-Cultural Analysis cum Workshop from April 21 to May 5, 2018. There were twenty-five participants from different Jesuit Provinces along with three ICM novices and four staff members from St. Aloysius College, Mangaluru. Fr. Alwyn D'Souza, SJ (Head of Human Rights Unit) and Ms. Kanchana (Assistant in the Unit), meticulously arranged the course and the logistics.



The course was designed to help participants engage themselves in gaining a critical and constructive outlook on society. To broaden their understanding topics like Social analysis, Cultural and Religious analysis, Political analysis, Human Rights, Dalits and Ambedkar, Indian Constitution, Media and Society, Economic analysis, Gender analysis, Society and Environment, Migrant workers, Refugees, Untouchability and Dalits, Sexual minorities, Nationalism and Hindutva, Child Rights, Communal

violence and case studies of coastal Karnataka were covered.

The course was very interactive right from the beginning with a lot of sharing, group discussions, debates, etc. This made the whole process of learning rich and meaningful. Besides, most of the resource persons brought with them rich field experiences. Another plus point was that the group was very diverse representing different backgrounds and cultures. This helped the participants understand the issue at hand from multiple perspectives.

The course was well-integrated with a special focus on contemporary issues in India.

On the penultimate day the participants, divided into five groups, gave presentations based on what they had learnt during the course. The presentations were very good highlighting, through skits and mime, the various evils prevailing in society.

On the final day there were individual presentations. Participants presented their experiences, the lessons learned and their 'take aways' for the future. During the valedictory ceremony certificates of participation were given to all. All expressed their satisfaction with the course. They also expressed their desire to work towards changing society beginning with small acts.

I SCH. ANUSH D'CUNHA, SJ

Roots & Wings, 2018: Colloquium on Ignatian Spirituality



Roots & Wings 2018, the five-week colloquium on Ignatian Spirituality was held at Sacred Heart College (SHC), Shembaganur. It was attended by 17 Jesuits from 11 Provinces. Orienting the participants Fr. R.C. Chacko (HAZ) said, “Ignatian Spirituality is a spirituality of affectivity.” Therefore, the idea is to revisit Ignatian Spirituality with personal assimilation through interiorisation, listening and sapiential reading of the Ignatian corpus – Autobiography, Spiritual Exercises, Spiritual Diary, Letters of Ignatius, the Constitutions, and the decrees of General Congregations on Mission. Fr. R.C. Chacko led the group through the pilgrim journey with a sapiential reading of the Autobiography (AB).

Fr. Jossie D’Mello (KAR) dealing with the Spiritual Exercises (SE) observed, “SE is the source and fountain of Jesuit Spirituality. It is the distinctive mark of a Jesuit and the source of our way of proceeding.”

Fr. Ignatius Tete (RAN) situated the Spiritual Diary of Ignatius (SD) in its historical context. He said the dynamics of the SD revealed two sides: a) discernment and devotion, and b) mystical experience and gifts. Thus, the SD is an inspiring model of rigorous discernment and a mirror to Ignatius’ mystical devotion.

Presenting the Letters of Ignatius, Fr. Arul Sivan, (MDU) said that Ignatius was a mystic and prophet. Interestingly in his first available letter, Ignatius sought permission to bear arms for self-protection, while the last letter on July 31, 1556 asks that charity be shown in giving lodging to a travelling young man for a couple of days. Indeed a pilgrimage from being self-centred to being other-centred.

Fr. T.A. Samy, (PAT) in dealing with the Constitutions said, “Jesuit Spirituality is a patrimony containing a way of life lived in the spirit of the SE and the Constitutions.” Fr. Samy emphasized that more than any exterior Constitution it is the “interior law of charity and love which the Holy Spirit writes and imprints upon hearts” that is important. Pointing to an apparent abrupt ending of the Constitutions he said, “The Constitutions will be complete and come alive when every Jesuit lives the spirit of the Constitutions in their life and mission.”

Fr. Jerry Rosario, SJ (MDU) took up the understanding of “Jesuit Mission Today” basing himself on decrees of the General Congregations (GC). He began by culling out the foundational meaning of “mission”. He said the word “mission” travels beyond religious domain and transcends to a new horizon. He stressed that we are not devotees of Jesus but his disciples. “Mission”, descending from the Divine, seeks promotion of justice in all walks of life – gender, economic, political, religious, cosmic, and cultural. He also highlighted the clarion call of the GCs to serve our target groups - women, tribals, Dalits, the unemployed, and suffering people in the Middle East, Eastern Europe, China, Afghanistan, Tibet, etc.

At the end one of the participants exclaimed, “It is a complete and full measure of Ignatian Spirituality. I wish other Jesuits too take advantage of this gift.”

| RAVI SAGAR, SJ (Guwahati)

South Asian Jesuit Theologians meet in Bangalore



Twenty-five Jesuit theologians of the South Asian Jesuit Assistancy gathered for the Third Seminar of the South Asian Jesuit Theologians' Forum at Ashirwad, Bangalore, from April 20-22, 2018 to deliberate on the theme Subaltern Concerns and Prospects.

Fr. Maria Arul Raja, the convenor, presenting the dynamics of the seminar, pointed out that the subaltern people are marginalised and victimised as objects by dominant forces. As victims of diverse types of marginalisation with a deeper sense of themselves as subjects they strive for alternative liberative narratives. They along with faithful intellectual insiders identify the liberative potentials embedded in the life-struggles of the subaltern people, articulate the inarticulate expressions, and walk along with subaltern people towards a life of dignity and integrity.

Raja further noted that these intellectuals facilitate the subaltern thinking through a four-stage process for liberative narratives. First, they gather questions that emerge from the life experience of the silenced masses, analyse them with the tools provided by social sciences; second, the questions that arise are related to situations of oppressions that lead to the ultimate question 'to be human or not'; third, the ultimate question enters into dialogue with life-affirming streams found in the religio-cultural world of the struggling masses; and fourth, an osmosis between liberation-seeking life questions and liberation-oriented cultural energies will result in the evolution of newer possibilities for being co-human with all.

On the first day, M.A. Raja, Jossie Lobo and Selva Rathinam presented papers on subaltern methodologies. They pointed out that such a process of theology is dynamic and critical, carried forward by marginalised people themselves as subjects, and reflect upon their own lives in the light of Word of God. The task of theologians is to accompany the subaltern people in their liberative journeys and continue to discern and interpret the Word of God in the light of subaltern experiences.

On the second day, Raj Irudaya, Arjen Tete, P.R. John, Valan Antony, and John Mundu presented papers on the ongoing struggles for freedom and dignity by subaltern peoples from four different locations of South Asia: Sri Lanka, Jharkhand, Chattisgarh, and Telangana. On the third day Sahayaraj, Victor Edwin, and John Karuvelil presented papers on subaltern concerns and ethics. Besides these presentations there was an engaging panel discussion on the CBCI policy on Dalit Empowerment. The panellists were Frs. Thomas Kuriakose, Thomas Kattathara, Stanislaus Alla, and Alangaram. Every evening there was a session to gather in the fruits of day. The presence of Frs. Michael Amaladoss and Sebastian Painadath, the two veterans of the forum, was a great source of inspiration for the younger members.

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I VICTOR EDWIN, SJ (Delhi)

NEWS

NATIONAL NEWS

Course on Critical Thinking on Contemporary India

The course on 'Critical Thinking on Contemporary India' was organized at the Centre for Culture and Development (CCD), Vadodara, Gujarat from April 17 to April 24, 2018. Twelve scholastics from five Provinces participated. It was an innovative, inspiring, eye opening, and insightful experience. The inaugural address laid the foundation for the course: Jesuits as called

to take a learned approach to ministry. The resource persons broadened our horizon to see and think critically on the present socio-political realities of our country.

We visited a labour market where workers come daily in search of work, a few slums and a village. The visits and interactions with people not only opened our eyes but

our mind, intellect, and heart as well. Our interaction with slum dwellers made us realise that cement and painted buildings do not necessarily build a city. The Government is bulldozing the rights, human dignity, relationships, security, culture, livelihood, etc. of slum dwellers by demolishing slums in the name of development. Town planning is only a systematic hidden conspiracy to

displace and uproot the poor from their habitats for the benefit of the rich. The course helped us to see the social realities from the perspectives of politics, economics, social reality, culture, religion, psychology, etc.

We became aware of the political situation of our country, where democracy is at stake. We are becoming slaves of Hindutva ideology and religious fundamentalism. People live in constant fear facing uncertainties and threats. Our leaders who are supposed to be representatives of the people do not really represent them.

The course helped us to remove our own prejudices and biases and provoked us to see reality from the eyes of those at the bottom of society. It helped us to see the root cause of the problems and provided us with a broader perspective for our future



ministries. It enlightened us on how we can incarnate ourselves among the people by becoming part of their lives. To bring about change we need to pitch our tents among the people and become one with them.

It is a challenge for us to bring change where there is authoritarianism and violence. When people are brainwashed with empty promises and lies, religion is used for political gains, and diversity is not respected, bringing about change is a challenge. It is at the grassroot level that

social sciences can play a great role by diagnosing social pathologies eventually leading to social transformation.

Thus the work of Jesuit intellectuals is to become the voice of the voiceless, fight against injustice, inequality, exploitation, and corruption. The course motivated us to engage in the wider society and not be insulated in our institutions. All the participants felt that we need to change our perspectives, ways of thinking, behaviour and attitudes before we can change society.

We thank Fr. Lancy Lobo, SJ, the resource persons, and CCD staff for meticulously planning and executing the course. Courses like these will make our Jesuit ministry more effective, affective, relevant, and fruitful.

I SCH. ANMOL LAKRA, SJ

Workshops on Discernment in Common and Apostolic Planning



Two workshops on Discernment in Common and Apostolic Planning were organized by the Assistency, one at Navjivan Renewal Centre, Delhi (April 6-8) for the representative Jesuits of the Provinces from North and Central Zones, and the other at Indian Social Institute, Bangalore (May 4-6) for Jesuits from the Western and Southern Provinces. There were twenty five participants at each. The resource persons were Raj Irudaya, SJ (ADF), Brian Pereira, SJ (Secretary, JYMSA) and Siji Varghese, SJ (Coordinator, PDOs/ADO).

The workshop carried a lot of significance as it was a follow-up of the World Wide Workshop (WWW) on "Discernment in Common and Apostolic Planning" organized by the Office of Discernment and Apostolic Planning, Rome. It aimed at implementing the special recommendations of GC 36 regarding discernment in common and apostolic planning, highlighted in Father General's letters to the whole Society.

The purpose of this workshop was two-fold: that the fruits of the workshop reach more Jesuits; enable the participants to be animators at the Province level. Right at the outset the words of Fr. General were recalled: "We Jesuits and our mission partners cannot keep reaching out to an indefinite number of needs. We have to make choices."

The methodology followed was a combination of input sessions, personal prayer and reflection, group sharing and plenary sessions. The inputs were mostly on the deliberation of our first fathers of the Society in Venice and Rome, the historical development of discernment in common in the Society, Fr. General's letters (especially on Universal Apostolic Preferences and Discernment in Common), spiritual conversation as a tool and method, and the apostolic planning process.

The workshop helped us to have a deeper understanding of the process of discernment in common. We came to the realization that the process of discernment is as important as the outcome of the discernment. Successful discernment in common is not an automatic process. It assumes Regular community meeting, daily Eucharist, shared apostolate, effective and spiritual leadership, spiritual conversation, personal prayer and deeper knowledge of the reality of the world.

The workshops were meticulously planned and effectively conducted. We extend our heartfelt thanks to the directors and administrators of Navjivan, Delhi, and Indian Social Institute, Bangalore, for their warm hospitality and care.

I JOSHY XAVIER, SJ & SIJI VARGHESE, SJ



Fr. Emil D'Cruz, SJ (BOM)

Every once in a while we are privileged to encounter someone who excels in both witness to religious life, and apostolic versatility. Emil D'Cruz is one such person.

Emil was born into a devout family. His parents had three sons, all of whom became Jesuits! The eldest brother, Henry, is a pastor at St. Anne's Mazagaon while the Lord has already called unto Himself the younger brother Adrian. The religious upbringing at home had a marked impact on Emil who displayed a deep love for Jesus all through his life.

A major part of Emil's apostolic life was spent at St. Xavier's College, Mumbai where he served as Professor, Rector, and Principal. He did much for the renovation of the physical structure and added many new facilities, successfully enlisting the support of the Alumni for this. As a Professor he is remembered for his quality teaching and application of statistical methods to the Social Sciences.

More than all this, Emil is remembered by staff and students alike for his personal care and the warmth of his relationships. Each interaction was a pastoral encounter through which Emil reached out and affirmed the goodness of the person pre-

sent before him. In the two days since his death, a large number of messages have been flooding in. People from all over the world have expressed how grateful they are to have met Emil, and to have been touched by him.

After retiring from College, Emil moved into pastoral ministries at Nashik and Bandra where he continued to use his talents as a pastor and friend to many. He was then called upon to serve as Socius to the Provincial. He brought to this job his wisdom and vast experience and also his infinite capacity to listen patiently to others. Many a time, an aggrieved Jesuit would pour out his complaints to Emil and then cool down before going to meet the Provincial! Emil could be firm in demanding work but he never raised his voice or uttered an unkind word.

Emil has gone to meet his Lord and Maker. He leaves behind a wonderful legacy of how to combine academic excellence with pastoral outreach, all done with admirable fidelity to the Jesuit way of life. May the Lord, whom Emil served so faithfully, welcome him into Paradise!

|| LUKE RODRIGUES, SJ



Br. Romuald Misquitta, SJ (BOM)

Br. Romuald Misquitta, or as he was fondly called Romu at home and Romy by friends, was born in a middle class Catholic family. There were two priests and two religious sisters in his mother's side of the family. I was older to him by eight years, and had to take up his studies. He had a very practical mind. He took to technical training and worked in Voltas Ltd. Only after our younger brother was settled in a job did Romy join the Jesuits.

Romy taught at the technical institutes in Manickpur and Shilpalaya. He was the Minister at Snehasadan, St Xavier's Institute of Education, and Seva Niketan. He also served at the Papal Seminary, Pune. Everywhere he was seen as a quiet, uncomplaining and assiduous worker.

In his Jubilee letter to Romuald, Fr. Adolfo Nicolas makes special mention of his prudence. He writes, "I am told that many Bishops appreciated the patience and prudence with which you drove them from and to the airport." He never spoke much and hardly ever complained. These are signs of patience. His taciturn nature led him to be prudent in his speech with any authority - Bishop or Provincial. However, the most outstanding and endearing quality of Romuald was his availability

for any service required of him.

Romu was struck with lung cancer. He was operated upon, and a lobe of the infected lung removed. He recovered completely but later developed fungal pneumonia. This made it difficult for him to breathe and weakened him. Here again, Romu did not complain of any pain or weakness, to the despair of the one in charge of the sick. It was only when the local superior saw him and felt that something was really wrong, that he almost dragged him to hospital. Upon reaching the hospital, Romu collapsed and had to be carried to bed. In spite of the diligent care of the doctors and hospital staff, he passed away.

Br. Romuald closely lived the ideal of a coadjutor brother in the Society. He had every reason to be satisfied having given himself completely to his vocation. Well could Romu have spoken the words of St. Paul, "I am already being poured out as a libation; I have fought the good fight. I have finished the race, I have kept the faith. From now on there is reserved for me the crown of righteousness which the Lord the righteous judge will give me."

|| JOHN MISQUITTA, SJ



Fr. Leopold Soares, SJ (BOM)

The poet Leigh Hunt wrote a poem about Abu Ben Adhem who was visited in his sleep by an angel. He asked the angel to note his name as one who loved his fellowmen. The angel returned the next night with a list of those whom God had blessed, and Ben Adhem's name led all the rest.

On the evening of May 3, 2018, the angel appeared to Fr. Leo Soares and noted down how he had loved God's people greatly. And lo, Jesus himself was there at the heavenly gates to welcome Leo who had truly lived out Jesus' commandment to love one another.

Leo was born in a devout Catholic home where he imbibed from his parents a deep love for Jesus and the people Jesus died for. This love was further strengthened in St. Stanislaus School and inspired Leo to join the Society of Jesus, doing everything for the greater glory of God.

Most of Leo's life was spent in the field of education. He served in schools at Nashik, Manickpur, Mazagaon, Bandra and Kanjurmarg. It was as the Principal of St. Xavier's Nashik for over ten glorious years that he left an indelible mark. Through his tireless efforts he gave the school a new vision, a new dream, inspiring staff and students alike to give of their best.

Leo was a true all-rounder. Good in studies and sports, he could put his hand to anything. His interests extended to fields such as literature, history, geography, and botany. As a teacher he was able to communicate his own passion to the students. He loved nature and would make a detailed study of the flora and fauna of the place where he was posted. Many a young Jesuit novice and junior took inspiration from him.

In his personal life Leo was humble and unassuming. Towards the end he suffered from kidney failure and had to go twice a week for dialysis. He endured this pain and suffering with a smile on his face. The presence of so many people at his funeral is a sign of how much Fr. Leo Soares loved, and was loved.

JOSEPH D'ABREO, SJ



Fr. Bernard Bara, SJ (MAP)

Bernard Bara was ever the well-groomed gentleman Jesuit, soft-spoken, clear in his thinking, decisive in his approach. He lived to his full potential – received training for his work as an educationist, a legal adviser and pleader in the company of senior judges. He came from a well-knit family in Gumla, Jharkhand.

His ministry changed with time and age. In his younger days he was with the youth either as a prefect or as Principal. He was with them in the classrooms and on the games field. He was appreciated for his mild but firm approach to students. He was the Principal of Loyola Higher Secondary School, Kunkuri. Prior to taking over as Principal he was the prefect there. He then went to Champion School, Bhopal, for three years as Vice Principal. His vast experience at Loyola, Kunkuri, was a great help when working for greater academic excellence in the challenging English Medium School at Bhopal.

He was the assistant pastor at Snehsadan, Jabalpur, while studying law. Later he worked as the administrator at Xavier Institute of Development, Action and Studies (XIDAS) for two

years, and campus ministry for ten years in the same place.

When it was time for him to retire from active life and ministry, he was transferred to Khrist Milan Ashram at Namna in Ambikapur – Lievens Home for aged and retired Jesuits. He breathed his last in the early hours on April 19, 2018. His mortal remains were interred in the campus of Loyola School Kunkuri beside his younger brother Bro. Herman, among other great Jesuits missionaries.

May his soul enjoy eternal bliss with our Lord Jesus Christ!

ALPHONSE TIRKEY, SJ

The Watermen of India



Fr. Hermann Bacher, SJ



Rajendra Singh



Aamir Khan

Rajendra Singh of Rajasthan and Fr Bacher, SJ, are considered the Watermen of India. Bollywood's Aamir Khan is joining in.

Bacher was a Swiss Jesuit of the then Goa-Poona Province and Aamir Khan is a great Bollywood star. Both wanted to set up a permanent solution to tackle the perennial drought conditions in many Maharashtra villages.

"Where the rain runs, we make it walk; where it walks we make it crawl..." was like a motto for Bacher. His participatory watershed development and eco-systems restoration, adaptive sustainable agriculture, integrated and efficient water management, and climate change adaptation, with special emphasis on vulnerable communities, farmers, and women made vast stretches green and fertile again.

Bacher's Watershed Organization Trust (WOTR) has

helped restore over 8,913 sq. kms. of degraded land. Its schemes have directly or indirectly benefitted 1.4 million people. Over 385,000 people across India and 63 countries have participated in WOTR's training and capacity building programmes.

Over 150,000 college students from drought-prone western Indian cities joined Amir Khan's 'Paani Foundation' to dig trenches ahead of monsoon rains in more than 100 villages through Shramdaan (free physical labour) of Maharashtra. Inspired by WOTR, the trenches dug by students will allow rainwater to collect and seep into the earth which will help replenish over-exploited water levels.

Rajendra Singh of Rajasthan, Fr. Bacher, and now Amir Khan, are proving one thing for sure: the Lord of Creation sends enough water to the earth. It is for us to gather, store, and use it judiciously through the year for the needs of all.



THE ROAD NOT TAKEN

An Ambidextrous School

Joe Arun, SJ
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Hardly one in a million children is ambidextrous. But at Veena Vandini School of Singrauli District every student is ambidextrous. Ambidexterity is the ability to use both hands simultaneously to write in two different scripts. Unlike right-handed people, who show strong left brain dominance, the functioning of the two hemispheres of the brains of left-handed and ambidextrous people are almost symmetrical. Some scientists believe when the fundamental structure of the brain is first formed in the womb, the choice to use both hands is influenced.



The skill of writing with both hands simultaneously increases the speed of writing and the ability to retain knowledge, and improves concentration. They can simultaneously learn and write different languages. This boosts the child's confidence. Dr. Rajendra Prasad, Leonardo da Vinci, Benjamin Franklin and Albert Einstein are some of the most famous personalities in history who were ambidextrous.



All the students of Veena Vandini School can write with both hands easily. Most are Dalits and tribals. The school was set up by a former soldier, V.P. Sharma, on July 8, 1999. The students of Veena Vandini also know several languages: Hindi, English, Urdu, Sanskrit, and Arabic. They can write fluently in English with one hand and in Hindi with the other. There are about 300 students in the school 200 of whom can write fluently with both hands. Others are being trained. These students can finish a three-hour examination paper in an hour and half. There may be other similar schools in India. But what made Veena Vandini famous was that it appealed for funds globally as it was facing closure.

