NEWS & VIEWS

Work Apace at Srisailam Underground Power Project

A power project under the ground encased inside a three km. Long tunnel in hillock! This is the Srisailam Left Bank Hydro-electric project, which is being constructed at a cost of Rs. 2,324 crore with Japanese aid and whose first unit of 150 MW, out of six, is scheduled to be commissioned by June 2000.

Entering the underground Power House, which is 220 m below ground level, one comes across hundreds of workers, some of them engaged in chiselling the roof of the artificial cave while some carry out head loads of sand, while electrically-operated overhead travelling cranes move carry heavy equipment. Heavy duty fans keep the working place habitable.

The powerhouse will have reversible pumps. The units will be operated as pumps, drawing off peak surplus thermal energy available in the system and will add valuable peaking capacity. They will be run as conventional units during the monsoon season.

Three underground caverns are being built here. The power house cavern is 230 m long, 25.7 m wide and 55 m high and the transformer cavern 176.25 m long, 16.2 m wide and 27 m high. The surge pool, into which water falls after going through the turbines, is 76.5 m high, said to be the highest such pool in India.

The Srisailam Project is unique as it incorporates the latest techniques in construction, which has been developed by the Japanese. The six pump turbines, motor generators and associated auxilliary equipment, the 400 KV gas insulated switch gear and the 400 KV XLPE insulated power cable required for all the six units of 150 MW each have been received at the site.

According to authorities, 21 lakh cubic metres of earth had been excavated, with the balance one lakh units expected to be completed in the next six months. A total of 2,50,000 cubic m of concreting had been done, with 90,000 cubic metres remaining.

Source: The Hindu, Nov. 2, 1999

Smoke in Indonesia

It feels like the end of the world. The sun has vanished behind a haze of smoke. Cars are driving with their head-lights ablaze at three o'clock in the afternoon. And the earth is on fire.

Indonesia's fires do not always range through the forests. They sneak through the peat swamps of Kalimantan and Sumatra, invisible at times to both human eye and satellites alike. They dive meters deep into the peat and surface wherever the soil is dry and the wind is strong. They are man-made; started to clear land for small-time farmers and vast commercial palm-oil plantations.

The extraordinary thing is no one seems to care. From Banjarmasin to Palangka Raya in central Kalimantan, a distance of nearly 200 km, you are never out of sight of a smouldering fire. There are very few flames, mainly smoke. But farmers are still lighting new fires to clear the land for farming. And there is no sigh of an effective way to stop.

In central Kalimantan, government officials admitted fires had burned out two villages in areas where, only days before, they had denied the existence of any danger.

Estimates of the damage range from 100,000 ha to 700,000ha, including villages, wildlife reserves, timber concessions and palm oil plantations. Jack Rieley, a peat bog specialist at the University of Nottingham in the UK, estimates that the fires in Indonesia could release more carbon dioxide into the atmosphere in six months than all the power stations and cars in western Europe emit in a year.

Malaysia, the worst affected of the five neighbouring countries plagued by smoke from Indonesia, has sent more than 1,000 fire-fighters to nearby Sumatra. Australia has lent two water bombers and three US military transport aeroplanes have arrived, each capable of dropping 3,000 gallons of water per flight.

But there is little evidence that Jakarta has rallied serious resources to battle the flames or that the small-time farmers and large palm-oil plantation owners who began the fires will change their ways. There are even allegations that the government is partly responsible.

Beyond the ferry at Pulang Pisau, across the Kahayan river, lies the start of "the project". It is a huge exercise in human and agricultural engineering, a plan to clear one million hectares of Borneo's peat swamps to plant rice and resettle 30,000 farmers from Java and Bali to grow it.

The area, larger than northern Ireland, is almost entirely peat bog, which agronomists say is poorly suited for rice. Vast areas are being cleared along the roadside, by bulldozer and, according to local farmers and environmentalists, also by fire.

The fires came from the Project, says one shopkeeper at the side of the road, pointing at blackened fields. They just let it burn, and then they started clearing the land for the rice fields.

Sumatra Timur Indonesia and Wijaya Karia, government contractors for the Project, have carved up the territory with canals to drain the swamps and have converted 18,000 ha of swamp to rice fields so far. But Sutrisno Ruslan, regional director for public works in Palangka Raya, says the contractors were not responsible for the fires. He blames resettled farmers and local tribes people. One transmigrant gets 2ha. May be they are too lazy to clear it up and just set it on fire, he says. Owners of the palm-oil plantations are even worse, says Mr. Ruslan : They rushed to open new plantations because the price for palm oil is good, and just set the fields on fire. That caused the biggest fires.

Fires in Indonesia could be a recurring problem unless the government clamps down the offenders

Source : AGID News letter, 1998

Lecture of Prof. Niels Krebs Ovesen

Prof. Niels Krebs Ovesen, Sr. Consultant, Danish Geotechnical Institute, Denmark visited Roorkee on invitation from Indian Geotechnical Society (IGS), Roorkee Chapter. During his visit on 23rd to 27th Feb.,2000 Prof. Ovesen delivered the following lectures,

(i) 'Geotechnical Aspects of Tunnelling for Storebealt Link - A Case Study' on Feb. 23rd at Central Building Research Institute (CBRI), Roorkee

(ii) 'Limit State Analysis in Design Codes of Geotechnical Engineering' on 24th Feb. at the Department of Civil Engineering, University of Roorkee.

Storebaelt Link is an undersea tunnel of internal diameter of 7.2 m. The tunnel was supported by concrete segments of 15° and thickness of 50cm. The concrete was of high quality and dense. The reinforcement was treated for corrosion against sea water. The maximum overburden of soil is 70m. The shield method of tunnelling was adopted with high internal air pressure. This is a rail tunnel passing through glacial till. Two Tunnel Boring Machines (TBM) were used to excavate the tunnels through glacial till.

The talk dwelt on some of the problems that arose during tunnelling and the solution adopted.

1. Occurrence of stray boulders

The glacial till contained boulders of various sizes, some of them as big as 2.5 m. The cutters started rotating when they were reduced to a small size. At this stage it became necessary to excavate the tunnel manually through that boulder. This increased the cost. As the quantity of boulders in the till deposit was not known, it became difficult to estimate the additional cost to be paid to the contractor on this count.

Danish Geotechnical Institute found a relationship between probability of occurrence and size of boulders from 45cm to 250cm in the till. This plot was included in the document to reduce extra payments to the contractor.

2. Flooding of the tunnel during excavation

Unfortunately the tunnel was flooded at one stage due to water charged glacial till. Thereafter drainage bore holes were made all along the tunnel on both sides of its walls. The water in these bore holes was pumped out to keep the soil dry. The seepage pressure was monitored by piezometers. The cost of drainage system was justified as no flooding occurred latter. However there were many subsidence holes (<10x10m in size) on sea bed along a few locations above the tunnel alignment. The cause was guessed to be over excavation by TBM. To prevent sudden flooding or collapse of lining due to this kind of subsidence, a method of subsidence-treatment was devised and executed. Geo-membrane mat was spread on the sea floor above subsidence holes along tunnel alignment. Then sand bags were dumped over this mat and stitched to the mat with reinforcements. Consequently, if there is collapse of concrete lining, the mat will be sucked in below the subsidence hole. This will delay sufficiently the time of collapse which gives time to workers for escape out of compressed air chamber and run away for life. Another accident was fire in the TBM. The fire destroyed the TBM which was replaced by standby TBM. The fire also damaged the concrete lining (5 rings). These damaged concrete rings were strengthened with steel liner. The reduced diameter of tunnel in this section was considered tolerable by railway engineers.

3. Cost escalation

The cost of tunnelling escalated by about one hundred percent. Further the time of completion was also delayed by 100 % due to boulders, flooding and fires. The tunnel was finally completed successfully in 1998. Since 1998, tunnel is functioning well and return on investment is good.

In his talk on Limit State Analysis in Design of Geotechnical Engineering, he emphasized the importance of partial factors of safety in design of earth structures. Eurocode 7 suggests partial factors of safety (i) for gravity 1.0, (ii) for variable surcharge 1.35, (iii) for coefficient of internal friction of soil 1.25

and (iv) for cohesion 1.4 to 1.6. Further there is need for cautious estimate of strength parameters of soil. The cautious estimate is a value slightly less than the statistical average of test data. The whole idea is that prediction and performance fit in very well. Every body wants to be part of success in research and design.

There are following conclusions :

(a) A code of practice represents, at best, a fine balance between the four components entering into the design process: material parameters, loads, methods of calculation and safety elements (partial factors of safety).

A code of practice is not scientific by nature (a code of practice is document of practical knowledge on modern engineering practice). It represents a tool for making rational design decisions.

(b) The problem of establishing constraints for serviceability (e.g. differential settlements and tilt of buildings) for geotechnical structures is a problem of structural interaction. It is difficult for the code writer to specify acceptable values of such constraints with a high degree of confidence. Close contact between the structural and the geotechnical engineers during the design process is an essential element in establishing such constraints.

(c) A code of practice is a common language for geotechnical/rock engineers

All his lectures were appreciated by audience of over 50 experts. Prof. Ovesen during his visit to India also visited and delivered lectures at Indian INSTITUTE OF Technology (IIT) Bombay, IGS Chapters of Chennai, Delhi, Bangalore, Calcutta and Tehri Hydro Development Corporation (THDC) Rishikesh. He has visited India four times before and has enlightened engineers during his visits through technical talks.

Source: ISRMTT Local Chapter, Roorkee

Kaizen

Kaizen is a Japanese word that has become part of English language in many Western companies. It means continuous incremental improvement of the standard way of work. Since the worker is most familiar with the actual work, there is no better person to ask for improvement ideas. There is another Japanese word TEIAN meaning proposal or suggestion. Kaizen Teian is an organised way of bringing forth the ideas of each employee, no matter how small. The traditional system in the West emphasises “few” and “big”. : a few people get big rewards for a few big ideas, Kaizen Teian is not concerned with bigness and is concerned with broadness. It encourages creative participation

of each person in the company, and draws on the cumulative effect of many small ideas. The focus of Kaizen Teian is on implementation. The worker tells his supervisor, who goes into it and discusses with him and even teaches him the skills he needs to implement his proposal. As the suggestion has emanated from the worker, proposed improvements are most likely to be within the worker's range of ability. Implemented results breed enthusiasm about contributing more ideas by all. The key to implementation is in educating and empowering the front lines to control the process. The theme is, "Ideas are valuable only if they can be implemented". Proposals that cannot be implemented are like castles in the air.

In November 1986, Masaaki Imai published a book in English called KAIZEN. He says that Kaizen improvement is quite different from innovation, which implies significant, break-through-level progress by only a limited number of trained professionals such as engineers or managers. For Japanese people, Kaizen is a symbol containing all the daily struggles on the job and the way to deal with them.

Major innovations bring about remarkable results, but they need large sums of money and the use of best technology, and even development of new products. It takes a lot of time also. On the other hand, Kaizen represents on going progress as one small invention is added to another and in which everyone can participate using common sense to make logical improvements. Modest improvements will be achieved, but major results are not possible. However, when a constant stream of small improvements flows from all employees, a powerful force is set in motion. To get a competitive edge over rivals, Kaizen and innovation are both indispensable and they are two wheels of a cart. But Kaizen is like a rickshaw which cannot compete with a car, no matter how much pressure you give to it. However, major innovations have also to be backed up by Kaizen improvements.

The second objective of the Kaizen movement is to support the development of employee's skills. The companies must cultivate the active skills of employees. Hitherto the stress was on the need to meet the established standard levels of performance. Kaizen breaks up this standard. In a test at school, the limit to a student is to score 100% while in the real world, there is no upper limit for continuous improvements, and one could conceivably achieve 120% of even 200%. The ceiling is determined only by the enterprising sprit of the employees and their determination to solve problems. Creative ability not something bestowed on a select few: it is present in everyone, needing only to be developed through a person's initiative. The supervisor must promote this by setting the proposal mechanism in motion.

The proposals should relate to the proposer's own workplace and job. The only true proposals are implemented ones. The ideal system keeps everyone informed of implemented improvements through a Kaizen reporting system.

This is a good way of keeping everyone informed of improvement activities. This is better than merely talking about "improvement activities". Companies that follow this are finding that it breathes new life into company activities.

The further you move away from your own work, the more complicated it will be to implement a proposal. Employees proposing improvements must assess how their proposals relate not only to their own work but to that of the preceding and following work processes. When other people are affected, employees cannot make solo decisions about improvement ideas. They will have to obtain permission or instructions from a supervisor and get the co-operation of other people to make their proposals work.

There is no risk involved in adjusting the height of your own chair to a level that you find comfortable, but you cannot apply the same improvement to other people's chairs. You must consult those people. Gaining consensus takes a special ability. Kaizen leads to development of abilities.

Kaizen Implementation

The starting point of Kaizen is a problem. There can be creative thinking only when a problem has been discovered instead of getting used to the problem. Masaaki Imai notes in his book "Kaizen" that common sense is often all that is needed. An ordinary Kaizen proposal is much better than a creative but impractical idea. Industrial activity is subject to many limitations, such as cost, quality, payment, delivery date, safety and so on. Ideas that ignore these limitations are useless. A Kaizen Teian system does not need to be perfect from its outset. It will be unreasonable to demand perfection from a Kaizen system just introduced. Kaizen means devising measures that deal with causes of problems. Measures that fail to take into account the causes and deal only with symptoms are called repairs.

The saying goes, "Where there is a will, there is a way". This gives the equation "Will plus hard work equals results". However, working harder will not achieve unlimited results. That is because hard work is not the only element standing between will and results. The other element is resourcefulness. Hard work may not change our approach to the work. Resourcefulness means Kaizens. Good supervisors will encourage Kaizen approach.

Every workplace holds the seeds of many Kaizen proposals. The seed corresponds to the discovery of the problem, which is the first step towards Kaizen activity. Like plants, ideas start from seeds. Some ideas will wither before reaching fruition, but some will produce flowers as well as fruits we were growing them for. The difference between various proposal systems rest in the stage of growth at which ideas are recognised and evaluated. Some companies evaluate ideas only at the stage when they are bearing fruit, others

recognise ideas at the budding stage. Some companies think that the seed stage is significant and should be recognised. Others think that the employee's attitude towards Kaizen and approach to the process itself should be evaluated. In developing Kaizen activity, a three-dimensional standard must be used for evaluation. This standard covers the whole range, from seed to fruition, from accurate perception of the problem to presentation of a resourceful idea to the final effect. An essential element of Kaizen activity is the encouragement and guidance that managers provide to the workers. Even in a poor proposal, managers should focus on its strong points and thus nourish the worker's motivation. They should cultivate creative thinking and not kill it. Kaizen is doing normal things normally. All Kaizen ideas can be seen as ordinary. Kaizen is not a special gift, its very essence is seeking ordinary solutions for ordinary problems. The following lines should never be used when providing guidance regarding Kaizen proposals by supervisors and reviewers :

1. This is so ordinary
2. We have no precedent for that approach
3. Other companies do not do it that way

Examples of actual improvement proposals have been discussed. The main points to be remembered are :

1. Ideas about work are born out of work
2. Ideas about a particular area can be born only in that area

That is why, it is said that only people who do a particular job can come up with the appropriate way to improve it. People should not get discouraged when one particular ideas is not accepted. They should think and search for alternative proposal. People who have mastered Kaizen do not necessarily have special skills or talents. The ideas that are implemented are not extraordinary concepts. More often than not, the commonsense solution is the one chosen, the one even a conservative supervisor can understand.

Source – The Institution of Engineers (India),
U P Centre News Letter, March 2000

World Federation of Engineering Organisations

The principle product of Rio+5 is the development of The Earth Charter, the unfinished business of the 1992 Earth Summit. The earlier draft was expanded to include eighteen principles during Rio+5.

In the midst of all our diversity, we are one humanity and one Earth family with a shared destiny. The challenges before us require an inclusive ethical vision. Partnerships must be forged and co-operation fostered al local, bioregional, national and international levels. In solidarity with one another

and the community of life, we the people of the world commit ourselves to action guided by the following inter-related principles :

Respect Earth and all life. Earth, each life form, and all living beings possess intrinsic value and warrant respect independently of their utilitarian value to humanity; Care for Earth protecting and restoring the diversity, integrity, and beauty of the planet's eco-systems. Where there is risk of irreversible or serious damage to the environment, precautionary action must be taken to prevent harm; Live sustainability, promoting and adopting modes of consumption, production and reproduction that respect and safeguard human rights and the regenerative capacities of Earth; Establish justice, and defend without discrimination the right of all people to life, liberty and security of person within an environment adequate for human health and spiritual well-being. People have a right to potable water, clean air, uncontaminated soil and food security; Share equitably the benefits of natural resource use and a healthy environment among the nations, between rich and poor, between males and females, between present and future generations, and internalize all environmental, social and economic costs; Promote social development and financial systems that create and maintain sustainable livelihoods, eradicate proverty, and strengthen local communities; Practice non-violence, recognizing that peace is the wholeness created by harmonious and balanced relationships with oneself, other persons, other life forms and Earth; Strengthen processes that empower people to participate effectively in decision-making and ensure transparency and accountability in governance and administration in all sectors of society; Reaffirm that indigenous and the tribal peoples have a vital role in the care and protection of Mother Earth. They have the fight to retain their spirituality, knowledge, lands, territories and resources; Affirm that gender equality is a pre-requisite for sustainable development; Secure the right to sexual and reproductive health, with special concern for wemen and girls; Promote the participation of youth as accountable agenda of change for local, bioregional and global sustainability. Advance and put to use scientific and other types of knowledge and technologies that promote sustainable living and protect the environment; Ensure that people throughout their lives have opportunities to acquire the knowledge, values and practical skills needed to build sustainable communities; Treat all creatures with compassion and protect them from cruelty and wanton destruction; Do not do to the environment of others what you do not want done to your environment; Protect and restore places of outstanding ecological, cultural, aesthetic, spiritual, and scientific significance; Cultivate and act with a sense of shared responsibility for the well-being of the Earth community. Every person, institution and government has a duty to advance the indivisible goals of justice for all, sustainability, world peace, and respect and care for the larger community of life.

Embracing the values in this Charter, we can grow into a family of cultures that allows the potential of all persons to unfold in harmony with the Earth

Community. We must preserve a strong faith in the possibilities of the human spirit and a deep sense of belonging to the universe. Our best actions will embody the integration of knowledge with compassion.

Source: IEI News, Aug, 1997

Gems

The fact that last year gems and jewellery exports surpassed their target figure reaching $8 billion and capturing 55% of the world market confirmed India's traditional supremacy in this area. India is now poised to recapture the legendary fame it had in gem cutting, polishing and jewellery making. Every reputed museum in the world has pieces of ancient Indian jewellery with its unique design, craftsmanship and high quality of stones. The gems and jewellery sector is a labour-intensive industry and, in diamond cutting, India's cheap and skilled labour has given the industry a definite edge. But both diamond and coloured gems industry is import-intensive, and, with the reduction in duties, the industry has made vast gains recently. The value addition in the diamond industry is around 25% and India has no competitors in small diamond cutting business as Israel and Russia are confined to cutting and polishing big diamonds.

India has made big strides in studded jewellery already with exports increasing by 32%. The biggest buyers of Indian diamond studded jewellery are Americans, not the upper crust but the middle income clientele. The export potential in this field is enormous as the international market for it is expected to touch $ 75 billion.

For a faster growth of gems and jewellery exports, state of the art technology and better designing facilities are needed. Fashion trends have to be closely followed as the look of the jewellery is extremely important because, today, jewellery is considered more of a fashion item than an investment. For reducing the import content, indigenous diamond exploration has to be encouraged with the help of international mining companies because there is a big possibility of mining diamonds in two Indian states namely Madhya Pradesh and Orissa. With better marketing techniques, advertisement and design, the gems and jewellery industry is set to be a fast growth area along with software.

Source: The Hindustan Times, New Delhi, April 22, 2000

Hotel on the Moon

Several major multinational companies, including leading hotel chain Hilton International, have joined the race to build the first hotel on the moon.

Three big Japanese consortiums -Shimizu, Nishimatu Construction Corporation and Obyashi International - have already spent a staggering 25 million pounds sterling in plans to build extensive leisure projects, including inflatable buildings, tennis courts, golf courses and housing colonies on the moon.

Now Hilton International has unveiled plans for a "Lunar Hilton" which will have 5,000 bed rooms in an inflatable dome twice the size of the one being build to mark the millennium in the united Kingdom, The Sunday Times has reported. The Lunar Hilton will be powered by two huge solar panels and the hotel will have its own beach as well as sea and a working farm, the Times said.

It said the company, in an obvious bid to coin a new meaning of five star, had commissioned architects to design the hotel following the discovery of water on the moon last month. It is working closely with NASA experts on the project to form a partnership to ferry guests to the complex.

Hilton has spend more than 100,000 pounds already on the blueprints for the Lunar hotel's design, the Times said, adding Japanese company Obyashi, which has the most advanced lunar project, is planning to create a self-sufficient lunar community of 10,000 people, which will be supplied with food by vegetable farms set up there.

Peter Inston, the British architect who has developed the Hilton lunar plans, is apparently proposing to set up a 325-metre high complex that would rival the world's biggest hotel, the MGM Grand in Las Vegas. It will include restaurants, a medical centre, a church, a school and high speed lifts that will whisk guests from one floor to another the newspaper said.

Source: The Times of India, New Delhi, April 21, 1998

Ambient Air Quality in Delhi

INDUSTRIAL AREA	1995	1999	Drop
Sulphur dioxide ($\mu g/m^3$)	24.1	19.5	19 %
Nitrogen dioxide ($\mu g/m^3$)	35.5	33.5	6 %
Suspended Particulate Matter ($\mu g/m^3$)	420	365	13 %
Lead (ng/m^3)	110	58	47 %

RESIDENTIAL AREA	1995	1999	Drop
Sulphur dioxide ($\mu g/m^3$)	16.5	16.2	2 %
Nitrogen dioxide ($\mu g/m^3$)	32.5	26.5	18 %
Suspended Particulate Matter ($\mu g/m^3$)	409	351	14 %
Lead (ng/m^3)	155	46	70 %

TRAFFIC INTERSECTIONS	1995	1999	Drop
Sulphur dioxide ($\mu g/m^3$)	42	20	52 %
Nitrogen dioxide ($\mu g/m^3$)	66	60	9 %
Suspended Particulate Matter ($\mu g/m^3$)	452	418	8 %
Lead (ng/m^3)	335	70	79 %
Carbon monoxide (($\mu g/m^3$)	5587	4241	24 %

Source: CPCB, in The Hindustan Times, New Delhi, March 2, 2000

Philosophy of Happiness

If you wish to be happy for a few hours, go to bed. You will wake up a fresh due to inner contact with your own blissful soul (*Atma*).

If you wish to be happy for one day, go for picnic, as out of sight is out of mind.

If you wish to be happy for one month, get married.

But if you wish to be happy for whole life, kindly love your work. The love for work will divert your attention every day from worries to joy of creativity.

- Anonymous

Adjustment

The reasonable man adapts himself to the world; the unreasonable one persists in trying to adapt the world to himself. Therefore all progress depends on the unreasonable man.

- George Bernard Shaw

PIONEERS

The strongest man on earth is he who stands most alone.

- Henrik Ibsen

I render infinite thanks to God for being so kind as to make me alone the first observer of marvels kept hidden in obscurity for all previous centuries.

- Galileo Galilei

Constant effort and frequent mistakes are the stepping – stones of genius.

- Elbert Hubbard

One of the most dangerous forms of human error is forgetting what one is trying to achieve.

- Paul Nitze

I think and think, for months, for years, 99 times the conclusion is false. The hundredth time I am right.

- Albert Einstein

In this world everything perishes and will perish, but, ideas and dreams do not.

- Subhash Chandra Bose

One filled with joy preaches without preaching.

- Mother Teresa

A lamp can never light another flame unless it continues to burn its own flame.

- Rabindranath Tagore

It is not the mountain that we conquer but ourselves.

- Edmund Hillary

If you would not be forgotten as soon as you are dead, either write things worth reading or do things worth writing.

- Franklin

Thoughts should be tested before they are transmitted. If our thoughts taste unkind, critical or unfair, we should refuse to release them into the dangerous world of words.

- William A. Ward

BLISSFUL THOUGHTS

If we take care of today, God will take care of tomorrow.

- Mahatma Gandhi

All things by immortal power,
Near or far,
Hiddenly
To each other linked are,
That thou canst not stir a flower
Without troubling of a star.

- Francis Thompson
English Victorian Poet

O Mother Earth,
Enrich me with the wisdom
So that I should not damage or degrade you.
Wherever, I dig out, should quickly be
Regenerated and covered with greenery.

- Atharva Veda
Source: Standard India, Vol. 13, No.9, December 1999

You can't separate peace from freedom because no one can be at peace unless he has freedom.

- Malcom X

If you wish to escape the pains and afflictions inherent in the wheel of deaths and rebirths, you must devote yourself to meditation: it is the path which leads us towards knowledge of the Self, that is to say, towards eternal peace and supreme felicity. It prepares us for the integral experience of direct intuitive knowledge.

- Swami Sivananda

Solitude sometimes is best society, And short retirement urges sweet return.

- Milton