IS MODERN MEDICINE DANGEROUS?

By LEWIS THOMAS

Attitudes toward the medical profession range from awed respect to deep suspicion. It was not surprising, therefore, that a recent book attacking contemporary medicine should have provoked a good deal of attention and controversy. Here a noted physician and medical researcher considers this latest critique and finds that its errors of judgment exceed its insights.

Formerly chairman of the department of pathology at Yale University, Dr. Thomas is now president of the Memorial Sloan-Kettering Institute for Cancer Research in New York City. He won the National Book Award in 1975 for his collection of essays, *The Lives of a Cell : Notes of a Biology Watcher*. His article is reprinted from *The New York Review of Books*.

As a physician, I've had a hard time with Ivan Illich's new book *Medical Nemesis : The Expropriation of Health* but not, as you might be thinking, because of wincing or hurt feelings at all the harsh things Ivan Illich wants to say about contemporary medicine. Indeed, most of his arguments, taken singly, are not all that bad, or all that wrong. It is possible to read the whole book through, nodding much of the time in general agreement with one point after another. The hard part comes when it is finished, thousand-odd footnotes and all, and you try to figure out what Illich wants to have done about it.

The footnotes are impressive at first sight, occupying in fine print at least a third of the book, and symbolizing scholarship, rigor, and a firm grasp of the subject. They give the reader rather more confidence than he may actually be earning from the book, and there is, regrettably, no footnote to the footnotes to suggest how extraordinarily selective they are.

If, for instance, you'd like to look further into the literature of medicine in order to find out what, if anything, medicine is really good at, you'll find no help in the fine print. You will find no reference to Alexander Fleming or Howard Florey or Selman Waksman — who were responsible for the early antibiotics — or George Minot and George Whipple, who devised the liver treatment for pernicious anemia, or John Enders, whose work helped produce both the polio vaccine and the measles vaccine, or even Jonas Salk or Albert Sabin, who perfected the polio vaccine. No Sir William Osler, the doctor's doctor. Walter Cannon is mentioned, in a footnote, not for his great work in physiology but only because of something he once wrote about voodoo death. Robert Koch and Rudolf Virchow are in footnotes, but not because of their scientific work, only because they helped to compound what Illich presumes to be a generally false epistemology of disease by launching, respectively, medical microbiology and pathology.

This could make for annoying reading, if you were misled at the outset, as you might well be, into expecting any sort of balanced appraisal of contemporary medicine. This is not Illich's intention, and once that is clear, the annoyance wears away.

The Perils of Medical Care

There's a lot to agree on, when Illich gets down to pounding out his arguments. Everyone knows that modern medicine can do harm when used unwisely and excessively. Iatrogenic illnesses—those caused by treatment itself—are a real problem. There is too much unnecessary surgery done, and (probably a more serious matter) too much unnecessary medicine. It is the scale of the problem that is arguable, and Illich argues only the one extreme side: health care has been turned into a "sick-making enterprise":

> *The pain, dysfunction, disability and anguish resulting from technical medical intervention now rival the morbidity due to traffic and industrial accidents and even war-related activities, and make the impact of medicine one of the most rapidly spreading epidemics of our time.*

There is some overkill here, or at least overmaim. Does Ivan Illich really mean that iatrogenic illnesses (caused by medical treatment) match in incidence and severity the deaths and permanent crippling injuries of all the country's auto accidents? And industrial accidents? *And* those of the Vietnam war? Or is he using the term morbidity very carefully here, and simply calculating the total *number* of iatrogenic episodes (which could be a very large number if you include all the transient skin rashes and mild fevers due to allergic reaction, especially to antibiotics), and then matching this number against the total injuries (not deaths) caused by cars, industries, and the car?

But this would be grossly unfair; one cannot really compare a rash to paraplegia, nor can it be stated so flatly that iatrogenic disease is worse than war without offering some firm facts about comparative death rates. I've never been able to find reliable data anywhere on the incidence of iatrogenic death resulting from needless surgery or as a complication of drug therapy, and I expected to be helped in the search by the array of references in Illich's abundances to the technical literature turned out, on checking, to be descriptions of a much milder set of problems than the picture of human devastation called up by Illich's prose. (In a recent study from the University of Florida, it was found that only sixteen patients out of 7,423 died of drug-associated causes, and most of the sixteen were terminally ill beforehand, with fatal malignancies being treated at the last ditch with antineoplastic drugs). There are, in real life, a great many untoward reactions to drugs, and there are too many unnecessary operations; it is a matter of genuine concern, no question about it. But it is not at all the threat to human survival that Illich makes it out to be.

A Loss of Dignity

The rest of Illich's case rests on his persuasiveness about these matters, all dealt with in the first thirty-six pages of the book. If you become convinced by this section that modern medicine has little or nothing of real value to offer, with that little overwhelmed by its destructive and lethal effects, then the following sections on "social" and "cultural" iatrogenesis must seem logical extensions of the same theme. Medicine is bad luck for societies because of the useless and harmful overmedicalization of almost everything, from ordinary unhappiness to ordinary dying. Cultural iatrogenesis is even worse, in Illich's view; it is the loss of nerve and the giving up of autonomy and dignity on a societal scale.

These are interesting and provocative ideas, whether or not you agree with the first thirty-six pages. We Americans *are* overmedicalized, tending to become a psychoneurotic people. Never before has there been so much public anxiety about health and its jeopardy, at the very time when we have achieved the healthiest society in history. We have a longer average life expectancy (seventy-two years) than ever before; our death rate is running at less than 1 percent per year, substantially below our birth rate. But we seem to be more worried than ever, about cyclamates and air pollution, food additives, sludge, sonic booms, *germs*, above all *germs*. The television commercials deal mostly with minor ailments, piles, headaches, stomach gas, bad breath, smelly feet and the like. But they are so skillfully staged as to make even dandruff seem a sort of threat to life. We are nervous about the fallibility of the human form, distrustful of the way we are made, and so we turn more than ever to the doctor or his surrogate, for checkups, for reassurance, for advice about how to live a life.

There is, in this failure of confidence in ourselves, a certain loss of autonomy, even dignity. Illich is right about this.

But the news is not as solidly bad as he asserts. He has left out some things. The thought ought to arise, but does not in this book, that things could be a great deal worse. Had it not been for the biomedical science which began in the late nineteenth century we might, for instance, still have at our disposal only the medical knowledge and technology of Montaigne's time, three centuries earlier, but with a system for delivering health care built on today's scale. Montaigne, who detested medicine and doctors with hotter eloquence than Illich does, would have been swept off his feet by such a system, overwhelmed, bled and purged to death, poisoned to death by heavy metals and noxious plant extracts, goaded to death by incantations and charms, leeched away.

Give up Medicine?

Illich seems to believe, with ardor and intensity, that medicine has become worse rather than better. To be sure, he concedes briefly and hastily, almost as though uncomfortable with the thought, that a few useful things may have happened, antibiotics and chemotherapy for infection for example, or immunization, or vitamin B-12 for pernicious anemia, may be insulin for an aspect of diabetics, a few other odds and ends; but he has a generally low regard for medical therapy and believes that on balance it does considerably more harm than good. And anyway, he seems to say, the few effective measures available to medicine in, say, dealing with infection, are far outbalanced by a long array of health disorders for which medicine has nothing to offer beyond dangerous meddling.

Give it up, says Ivan Illich. Root the doctors out, and all the rest of the bureaucracy along with them. Return to the people their responsibility for selfhealing. Demedicalize illness, disability, and dying. Above all, get rid of those hospitals. Go back, society, to nature. Learn to live with pain abide early death, naturally.

The real trouble with this book, in my view, is that Illich so overestimates the power of medicine and its science. He asserts that medicine has fully matured, run its full distance, and has failed. Everything we are likely to know we have already learned, and we are not helped by the information. Medicine has become a high technology and, like the other manifestations of industrial society, including compulsory fast transportation and mass education, it simply doesn't work. Therefore, give it up and rescue mankind.

What Illich doesn't know, or anyway doesn't reveal in this book, is that medicine has hardly begun as a science, is still at its earliest beginnings, just now about to emerge as a coherent scientific discipline. Compared with the rest of biology, or with the harder physical sciences, medicine is still largely a pre-Darwin, pre-Newton enterprise. We have *not* learned everything. There is nothing like a unifying theory we can work with. The early and astonishing insights into the phenomenon of infection cannot be extrapolated to other diseases about which we are still almost totally ignorant. We do not yet understand the underlying mechanisms of the major illnesses which plague humanity, and therefore much of what is done in the treatment of illness must still be empirical, trial-and-error therapy. We are compelled by our limitations to resort to shoring things up, applying halfway technology, trying to fix things after the fact. Most diseases, if the truth be told, cannot be prevented because we do not comprehend their mechanisms.

Soluble Puzzles

This is the truth. We are very good at some things in medicine, most spectacularly in the infectious diseases, but there are lots of other afflictions which we cannot influence one way or the other. We can cure lobar pneumonia, a commonplace cause of death thirty-five years ago, outright; we can prevent and cure tuberculosis; tertiary syphilis is now almost a fossil disease; polio and smallpox have departed. But we cannot do more than palliate schizophrenia; we are defeated by more than half the varieties of cancer; we are bewildered by multiple sclerosis; chronic nephritis must lead to renal failure (with the artificial kidney or kidney transplantation as our only last resort); coronary thrombosis and stroke cannot yet be much affected by any technology, nor, for that matter, can they be prevented. We could prevent lung cancer if we only knew how to prevent smoking, but we don't. Senile dementia is still the ultimate and unavoidable humiliation for many of us. We do not yet comprehend the process of dying, and death is universally perceived as an outrage, a violation of nature. We have a long way to go, a lot to learn.

But the way is now open to science, and this is the great point, clean missed by Illich. Having proved, once and for all, that science *can* provide conclusive measures for disease control, we have begun to discern clues, feasible scientific approaches to each of the major diseases still at large. The biological evolution of the past quarter century—from the discovery of DNA to the analysis of the body's immunological system—has opened things up, and there are no longer any disease problems standing there as blank mysteries. They now have the look of soluble puzzles, even though we haven't solved them. A new way of thinking scientifically has been developing in medicine, and it is justified by this century's yield of new information, most of it the product of research in the last twenty-five years.

There is another point, taken from the history of medicine within our lifetime. Whenever we do achieve a genuine insight into a particular disease, deep enough so that we can figure out what to do precisely for prevention or cure, the measure turns out to be both simple and inexpensive. The cure of typhoid fever by antibiotics has changed a life-threatening disease lasting eight weeks or so, demanding the most costly kind of hospital care imaginable, into a trivial illness lasting less than a day and costing a couple of dollars. Meningitis, polio, sub-acute bacterial endocarditis, neurosyphilis, scarlet fever, and diphtheria in no sense present economic problems today.

Where we run into the insupportable costs and unbearable technologies described by Illich is in the care of those diseases by which we are still mystified. We would not be arguing confusedly about a nuclear-powered, four-pound artificial heart of plastic and metal, costing hundreds of millions to develop and entailing impossible ethical decisions once developed, if only we knew enough about the central factors involved in coronary occlusion to reverse the process or prevent it.

We Need More Science

What we need is more science, not less. We should not be talking about abandoning modern medicine; it is not yet really here. When we have it as a genuine science, truly perceptive and charged with insights, the technology of medicine will be easy to deliver, and will no longer cost the moon.

Perhaps there will always be, as Illich maintains, human problems that are not the business of medicine, in which we are likely to do more harm than good by meddling. Unhappiness, discontent, anomie, worry about meaning, ill will, grabbiness, and loss of nerve are huge problems for our society, but they are not medical problems. Medicine's professional task is the prevention and cure of illness, most of all the prevention of premature death. If it can stick to this line, taking advantage of all the biological science coming into view, learning more whenever the opportunity arises, admitting ignorance more candidly than is its old habit, medicine will earn its keep among useful human endeavours.

القرآن الحکیم

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کیسٹوں پر مشتمل پہلی مرتبہ اردو ترجمے کے ساتھ

ہدیہ: ۴۵۰ روپے

قاری محمد علی شرف الدین یمنی

اُردو ترجمہ اور آواز

مولانا محمد سلیم الدین شمسی (مرج البحرین)

یہ کیسٹ ہمارے تمام ڈیلروں سے دستیاب ہیں۔

EMI پاکستان لمیٹڈ

HYPOPADIAS : SURGICAL ROUTINE ON OUR SERVICE

at Dow Medical College

KHALID M. DURRANI, M.D., F.R.C.S. (Canada),
Diplomate American Board of Plastic Surgery
Professor of Plastic Surgery

Hypospadias is essentially a ventral dystopia of the external urethral meatus, of ongenital origin.

I intend to take up only the surgical management of this condition and would like to concentrate on two major problems that must be set right when present.

1. The first is abnormal micturition. Everybody has the right to be able to urinate standing up, as Culp put it. With hypospadias, the stream is directed downward as in ladies. *(Fig. 1).*

2. The second major problem is that of ventral curvature of the penis. This makes erection difficult and may even render coitus impossible. *(Fig. 2).*

We have developed a routine over the years wherein we correct these two deformities in two stages. The individual procedures are by no means original with us but their combination into one general routine has given us encouragement to continue with their use.

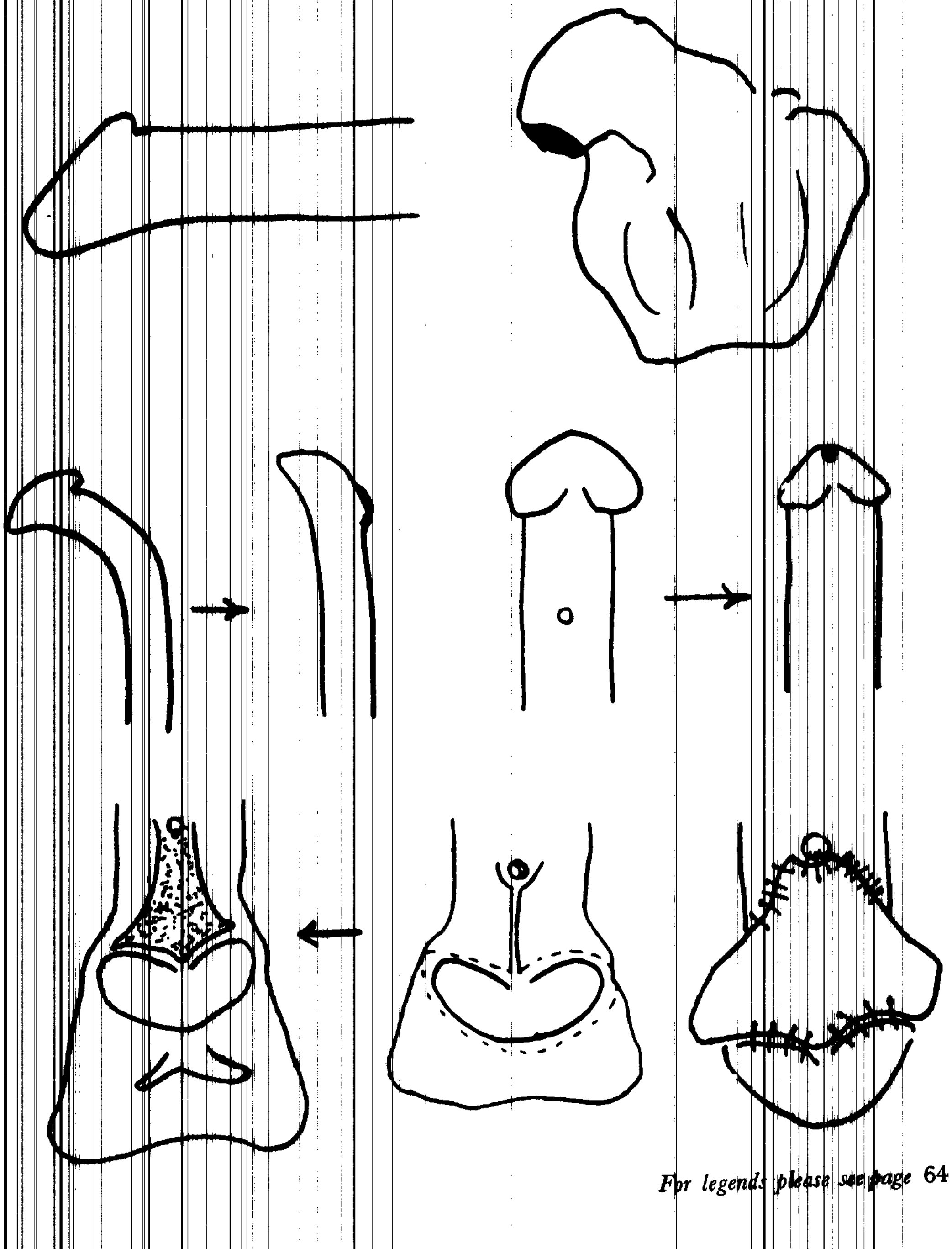
The first stage, which we consider as the more important one, consists of orthoplasty or straightening of the penis. *(Fig. 3)* A proper foundation is laid at this stage for subsequent neourethroplasty which constitutes the second stage *(Fig. 4)*. The first stage is undertaken anywhere between 6 months and a year of age and the second stage about six months later.

At the first stage the exact morphology of the deformity is determined and assessment of all available redundancy of tissues is made with the purpose of redistributing the integument over the organ during the two stages of reconstruction.

Minor tags, bridges and crypts usually present in the region distal to the meatus are eradicted to obtain a smooth roof for the future urethra. Skin is then incised longitudinally between the meatus and the corona glandularis, bifurcating the incision posteriorly to encircle the meatus about halfway around. Anteriorly, the two leaves of the prepuce are freely separated with a pair of dull pointed scissors inserted through this incision and the incision is then carried circumferentially a couple of millimeters from the corona, cutting only the internal leaf of the prepuce. Prepuce is then opened up in the form of a single proximal based flap.

All fibrous tissue is then excised in order to obtain full release of the penile curvature. Contrary to common belief, it is not the fibrous remnant of a corpus spongiosum or so called *chordee* that pulls the penis down. More often it is a thickening of the tunica albuginea encircling the corpora cavernosa on all sides, including the intercavernous region, which maintains this ventral curvature.

Enough should be excised to get full straightening of the penis and especial attention must be paid in the region around and dorsal to the external meatus. Distal 1/2 cm. or more of the urethra will often have to be mobilized in order to get at this tissue and allow the meatus to slide back into place and the glans to acquire a more normal posture (*Fig.* 5).



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After all hemostasis is secured, the skin deficiency created by this increase in the ventral surface area is fulfilled by bringing the prepuce down like a visor and suturing its free edges to the corresponding edges of the defect *(Fig. 6)*.

A buttonhole for the glans is appropriately created in order to satisfy all raw edges and suture performed with any fine material. This of course is the Beck procedure, first described in 1917. It is also known as the Ombredanne technique.

With a scale, the distance is now measured between the proximal border of the external meatus and the tip of the glans and this same distance is transferred to the midline of the scrotum, starting at the penoscrotal junction and measured backwards. Two parallel lines, about the width of the penis apart, are drawn along this length and a flap of skin and subcutaneous tissues raised and intubated. Scrotal defect in turn is closed by wide undermining and approximation in two layers *(Fig. 7)*.

This tube will be the covering for the new urethra to be fashioned at the next stage.

Enough time should elapse between the two stages to allow maturation of the tube and subsidence of inflammation. We allow a minimum of 6 weeks in adults. Children are sent away for 3-6 months before the next stage is undertaken.

At the second stage perineal urethrostomy is first performed and neourethroplasty is then started.

Parallel cuts are made on the ventral surface of the penis, far enough apart to be able to make an adequate urethral channel according to the age of the patient and the size of the penis.

Posteriorly, these incisions meet a little behind the external meatus and anteriorly they are staggered laterally in the coronal region to pick up some extra skin left here during transplantation of the prepuce. They end where the new meatus is intended to be and short cross cuts are made here to enable easy intubation of glandular skin which is rather inelastic *(Fig. 8)*.

Over a proper sized catheter the urethral channel is closed, after necessary undermining, with a running suture through the dermis *(Fig. 9)*.

Posterior end of the previously prepared scrotal tube is sectioned, split in the midline, continuing the incision in the midline of the penis into the raw area just created by construction of the urethral channel.

The tube tissue, now in the shape of an open flap is just laid over the raw area and sutured to its edges with fine material, keeping one or two drains in place *(Fig. 10)*.

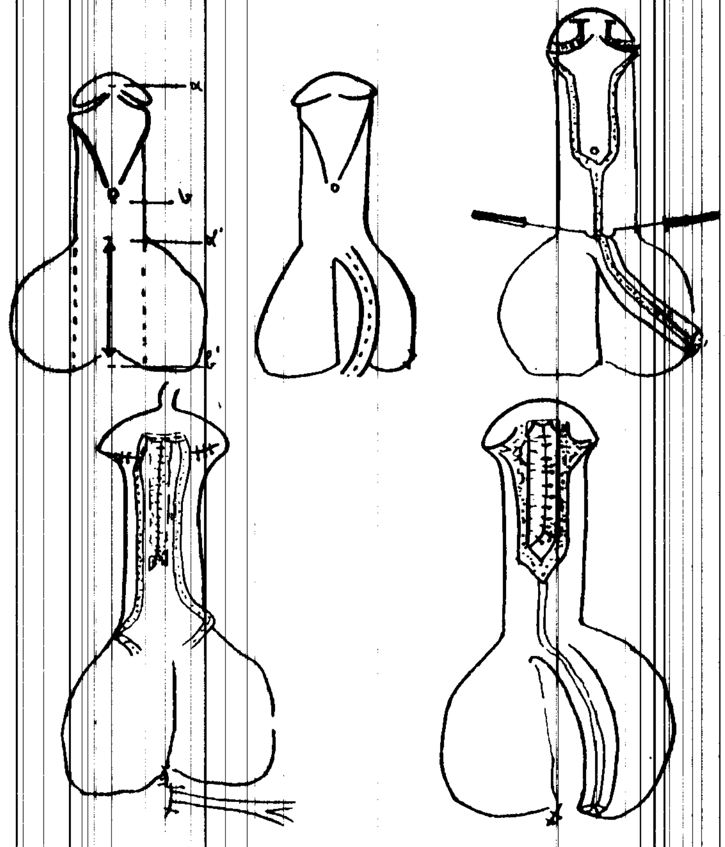
First dressing is changed after 2 days, when the drains are removed. Urethrostomy is removed in about 7-10 days and the sutures in about 14 days.

The main advantages of this technique are :

1. The offsetting of suture lines of the urethra and of the overlying skin cover.
2. No tension on any suture line. You can take as much of the ventral penile skin as you need for completing the urethral conduit, without worrying about closure of the residual defect.
3. The chief disadvantage is that the covering skin is hairbearing and looks odd. According to some of our married patients even this is an advantage in certain ways :

LEGENDS TO FIGURES

Figure 1. Abnormal micturition needs correction.
Figure 2. Ventral curvature requires release.
Figure 3. Stage I surgery : release of curvature — orthoplasty.
Figure 4. Stage II surgery : neourethroplasty.
Figure 5. Excision of fibrous tissue and straightening of penis; Opening up of preputial leaves and button-holing for glans.
Figure 6. Completion of Orthoplasty.
Figure 7. Designing of scrotal tube for use in Stage II.
Figure 8. Stage II : incisions for neourethroplasty and opening of scrotal tube preparatory to use as covering flap.
Figure 9. Urethra completed.
Figure 10. Scrotal tube laid over and surgery completed. Note perineal catheter for temporary urinary diversion.



GENE SPLICING: PROCEEDING WITH CAUTION

A new strain of wheat that could derive its own nitrogen fertilizer from the air — or a plant pathogen that might race through the world's croplands like some sort of infectious prairie fire?

A bacterial "factory" where insulin and perhaps other precious human hormones might be inexpensively mass-produced — or a maverick bacterial strain now able to make a deadly toxin for which neither humans nor animals have developed any protection?

A means of setting right certain heritable diseases, such as sickle cell anemia or Tay-Sachs — or a short-circuiting of separate evolutionary lines of development that have taken millions of years to proceed?

Polarized questions, reflecting polarized opinions. Such has been the brief and controversial history of a new biological technique properly known as "recombinant DNA" and more popularly referred to as "gene splicing," "gene grafting," "gene manipulation" or "mix-and-match genes."

DNA is the familiar acronym of deoxyribonucleic acid, th molecule of heredity. The constituent biochemical parts of this molecule are everywhere the same, whether found in the smallest virus or in the great blue whale. But it is the particular sequences into which these parts are organized, and the number of such organized sequences (or simply, "genes") that make the virus a virus, the whale a whale, and every other creature, ourselves included, in between.

Recombinant DNA, then is a meld of genes from two different species. Perhaps an easy way to visualize this is to imagine an organism's genom (its complement of genes) as being rather like a looseleaf binder, with each page therein representing one gene.

In recombinant experiments, scientists open the rings of two distinct organisms, say, yeast and bacteria, and remove one, two or several genes pages from the former. After inserting these into the bacterium's binder, they snap it shut and the microbe now has the proper instructions to make whatever protein or proteins are called for by those yeast genes.

The capability to take genetic mechanisms apart and reassemble them according to will can be traced back to the late 1960s and early 1970s when, as is often in the case of science, several researchers at different laboratories independently and more or less simultaneously made the same discoveries.

The discoveries dealt with substances called "ligases" and "nucleases." These compounds are enzymes, or biological catalysts, naturally produced by bacteria for their own defense; ligases enable bacteria to repair nicks in their DNA chains, and nucleases are used to chop off encroaching strands of foreign DNA.

Isolated from bacteria and produced in quantities, ligases and nucleases provided biological researchers with two essential tools for the making of genetic montages; a pastepot and scissors.

By themselves, however, the pastepot and scissors were not enough. Some means were needed of transferring a newly created montage to the interior of bacterial cells, where large numbers of identical copies (biologists call them "clones") can be made in short order. That transfer agent was found in "plasmids."

Plasmids are small rings of extra DNA found in the cells of certain bacteria. Because these rings, usually containing just a few genes, are not part of the bacterium's single chromosome, they have been dubbed "genetic loose change." Whatever they are called, plasmids are biologically negotiable coin because they can introduce their genes into the host cell's chromosome or they can exchange themselves among other bacteria and there have their genes incorporated into those chromosome DNA chains.

With plasmids (easily separated from regular chromosomal material), biologists now had all they really needed for recombinant DNA experiments; pastepot, scissors and a delivery service to the factory. The "factory" is almost always a bacterium known as *Escherichia coli* because it doubles its population every 20 minutes and because scientists know so much about it.

E. coli is to a microbiologist what a white mouse or guinea pig is to a biologist. Its genetic properties are very familiar to scientists by now, even if much of the specific details of genes themselves have yet to be worked out. And so it is for this reason that *E. coli* is the preferred "lab animal": after a large quantity of plasmid DNA has been harvested from bacteria, it is possible for scientists to sort out the familiar from the unfamiliar DNA. Any strange DNA that shows up in analyses must come from genes other than those of *E. coli.*

That, in fact, was what Professor Paul Berg of Stanford University in northern California was planning to do back in 1971 — until he received a very urgent telephone call one day.

Like many other scientists in the United States and other nations around the world, Berg — a biochemist — was interested in cancer. In particular, he was interested in a class of substances called "animal cancer viruses" or "tumor viruses".

Certain viruses have long been known to cause tumors in a wide range of laboratory animals: mice, rats and chickens, for example. And while no virus has yet been definitely linked to any form of human cancer, the fact that some of these infectious agents induce tumors in lower mammals, as well as transforming (making cancer-like) cultures of human cells in test tubes, has placed them under grave suspicion.

Berg was on the verge of investigating one such tumor virus, known to biologists everywhere as "simian virus-40." So-called because it was first found in monkeys, SV-40 is a small and apparently simple virus of only three genes. It does not cause tumors in monkeys, but it does when injected into mice and other laboratory animals.

It was Berg's plan to stitch SV-40's three genes into a plasmid and then introduce the plasmid into *E. coli.* Within a short time span, Berg would have isolated the three genes, identified the one which triggered tumors and begun to learn why it did so. He did not carry out this plan.

And the reason he didn't was attributable to that telephone call. The caller was Robert Pollack of the Cold Spring Harbor Laboratory on Long Island, New York. Pollack had learned from one of Berg's Stanford colleagues about the proposed SV-40-in-*E. coli* experiment and it worried him.

Specifically, he was concerned that some of those altered bacteria might escape from Berg's laboratory and, with the tumor-causing gene now part of their genetic machinery, somehow work their way into a human host. Since *E. coli* is a common occupant of the human gut, Pollack was alarmed by the possibility, no matter how remote, that the experiment might set in train an epidemic of human cancers. Couldn't the work be postponed, Pollack asked Berg, until its safety had been established?

Although Berg at the time felt that Pollack's fears were unfounded, the Stanford scientist — widely regarded by scientists everywhere for his professional and personal attributes — could not say with absolute certainty that indeed they were unfounded. And Berg admitted this, after he had discussed the SV-40 investigation with other scientists and discovered that such misgivings were not restricted to the Cold Spring Harbor Laboratory researcher.

The issue was raised later, in the summer of 1973, at a scientific conference in New Hampshire. Dr. Maxine Singer, a cancer researcher with the U.S. National Institute of Health and a cochairman of one particular session at the conference, noted the excitement that the then-recent discoveries had been generating throughout the biological co mmunity.

"Nevertheless, we are all aware that such experiments raise moral ethical issues because of the potential hazards such molecules may engender," she said to her colleagues. "Because we are doing these experiments, and because we recognize the potential difficulties, we have a responsibility to concern ourselves with the safety of our co-workers and laboratory personnel, as well as the safety of the public."

By the end of that morning, a letter had been drafted to the presidents of the U.S. National Academy of Sciences (NAS) and its Institute of Medicine. Signed by 11 scientists, including Singer and Berg, the letter asked those organizations to examine the many ramifications of this new and challenging avenue of scientific inquiry.

Moreover, so that they might share this concern with as many of their peers around the world as possible, the 11 scientists asked that the letter be published in two widely circulated and well-respected journals, the American *Science* and British *Nature*. And until such time as an international conference could be convened, and the nature and dimensions of the potential risks of this new technique assessed, the signatories to the letter asked their colleagues everywhere to defer two types of experiments and to do a third with utmost caution. Scientists were asked specifically not to improve the antibiotic resistance of bacteria, not to put any kind of animal virus into them and not to insert genes for known toxins, such as botulism, into organisms that do not normally carry them.

In more technical terms the deferred experiments were identified as those which would:

—confer resistance to an antibiotic drug, by means of recombinant methods, to bacterial strains presently vulnerable to such drugs. As a correlative, genes that code for a toxin were not to be transplanted to bacteria which do not possess them in nature;

—blend, in the test tube, animal tumor virus genes with bacteria which are capable of living in human beings.

The experiments to be done with great care involved plasmids and animal genes. Go ahead and do them, said the 11 scientists, but do them carefully.

In February 1975, nearly 150 scientists from the United States, Great Britain, France, Germany, Holland, Japan, the Soviet Union and Australia gathered at the Asilomar Conference Center on Californoa's Monterey Peninsula for the International Confegence on Recombinant DNA Molecules. There, for three and one-half days and long, long nights, they talked. And argued. And debated. Sometimes heatedly, even angrily. And sometimes with wit and humor. Wouldn't it be wonderful, mused the puckish British biologist Sydney Brenner, if the genes of an orange could be combined with those of a duck; the jest brought on a great roar of laughter from the men and women in the audience.

In the end, the Asilomar conferees worked out a broad consensus on how, and under what conditions, recombinant DNA research should proceed. They set forth categories of risk for different types of experiments (low, moderate and high) and specified the sorts of physical and biological safety steps that should be taken for each risk class so as to obviate any possibility of a catastrophe occurring.

"If we can make these barriers so that each has, say, only one chance in a million or 10 million of happening," Brenner said, advancing a philosophy of risk-reduction that was eventually to infuse this research, "and you have five or six or 10 such barriers, the possibility of anything drastic happening becomes very, very remote."

The barriers envisioned by Brenner and the others attending the conference were to be of two types: (1) physical and (2) biological. Meant to be used in concert, the former was seen as a means of containing recombinant organisms within the laboratory and the latter as a means of impairing any "escapee" microorganism's ability to survive in the world outside the laboratory.

In the United States and in Great Britain, committees were appointed soon after Asilomar and charged with the responsibility for developing specific criteria which would implement the conference's consensus. The American criteria, which came to be known as the "NIH (National Institutes of Health) Guidelines," spelled out four different levels of physical containment, P1 through P4, and three of biological containment, EK1 through EK3, for the conduct of recombinant DNA experiments:

—A P1 facility, which might be likened to a minimum-security prison, was defined as one where such simple sterile techniques as handwashing and decontamination of work areas, coupled with a ban on smoking and the eating of food, would be sufficient to hold in check those recombinant DNA organisms judged to be harmless.

—A P2 laboratory was defined as basically similar to a P1 facility, but with more stringent procedures and access limited to authorized personnel only. Comparatively speaking, P2 is a local jail.

—Following the analogy of different prisons, a P3 laboratory would be on the order of a maximum-security facility. In addition to all of the procedures set forth for P1 and P2 facilities, a P3 laboratory would require recombinant experiments to be done in "biological safety boxes" (in effect, work tables with enclosed sides and ventilated hoods). Laboratory technicians would wear gloves. Moreover, the pressure inside the laboratory would be maintained at something less than that outside the laboratory — so that any leaks would be *into,* not *out of,* the structure.

—A P4 laboratory, the ultimate barrier against the most dangerous pathogens, would be the equivalent of a maximum-security prison situated on an island in the middle of an ocean. Elaborate in the extreme, it must possess monolithic walls, ceilings and floors to qualify for a P4 rating, along with air locks, mandatory showers and clothing changes for technicians, waste treatment systems for discarded liquids and exhausted air, and many other requirements.

Not willing to trust entirely in walls and doors, the NIH panel also recommended these levels of biological containment be developed:

—EK1, the "EK" standing for the "K-12" strain of the *E. coli* bacteria. Actually, when scientists talk about using *E. coli* in various biological experiments, they mean the K-12 strain—a strain that was isolated from the human bowel in the early 1920s and grown only in laboratories ever since. Although critics of the new genetic research often cite the presence of *E. coli* in the human gut as a reason why these bacteria should not be used in DNA experiments, they appear to be ignoring the sharp distinctions between the K-12 strain and the 50 or so other variants of *E. coli* that normally colonize human and animal bowels.

Although members of the same taxonomic family, these bacteria are similar to each other as members of the chicken genus can be said to be similar. But there are important differences, just as there are differences between the cage-reared, barely ambulatory, chicken bred for mass-marketing and wild gamecock. Decades of laboratory living have left the K-12 bacterium as poorly equipped to survive in the human gut today, where it would have to compete with more vigorous "wild" strains of *E. coli*, as that prospective fryer chicken would be matched against the gamecock.

Because of this, the NIH panel found that the K-12 bacterium, along with certain plasmids or bacteriophages (viruses that infect bacteria) acting as the transfer agents for the transplanted genes, would make a suitable host-vector system for low-risk experiments.

EK2. For experiments possibly involving a higher level of risk, the panel called for development of a still weaker host-vector system, one that could not survive in the outside world if, somehow, it should ever escape from a laboratory. Accordingly, Professor Roy Curtiss of the University of Alabama Medical Center took some K-12 bacteria and built in 15 different genetic mutations. The result was a new bacteria strain, named "chi-1776" in honor of America's Bicentennial celebration, so enfeebled and so dependent upon an artificial laboratory environment that it dies in the real world. Curtiss fed some 10 thousand million "1776s" to rats and not a single living bacterium could be found in the animals' droppings; the NIH guidelines for EK2 status require that no more than one bacterium out of 100 million survive a single passage through an intestinal tract.

—EK3. This si an EK2 host-vector system, verifiedby extensive testing.

The NIH panel published these guidelines in the summer of 1976 and made them binding upon all scientists working on federal grants. Many scientists active in the field of recombinant DNA regarded the guidelines as strict, stricter, in fact, than their own experience and professional judgment would call for, but they accepted them in the interests of public safety "Scientists today," said Maxine Singer, "recognize their responsibility to the botulism into organisms scientific work."

But far from being water thrown on the fires of controversy the NIH guidelines were as so much gasoline; the flames of dissent seemed only to crackle higher. The city council, for example, of Cambridge, Massachusetts, held public hearings on the subject when it became known that nearby Harvard University was planning to build a P3 laboratory for the conduct of recombinant DNA research.

The council asked the university and its neighbor, the Massachusetts Institute of Technology (MIT), to refrain from such experiments until such time as a citizen's review board could assess the adequacy of the NIH guidelines. It was an unprecedented action, but with exemplary diligence the review board—consisting of nine members ranging from a housewife and a factory worker to two physicians and a philosopher—made itself conversant with the new biology and showed, as it declared in its report, that "a predominantly lay citizen group can face a technical scientific matter of general and deep public concern, educate itself appropriately to the task, and reach a fair decision."

The decision was to endorse the adequacy of the NIH guidelines, with some reservations, and to allow the research at Harvard and MIT to proceed.

Within the short span of a few months, however, other cities and states around the United States began holding their own inquiries into the subject: Ann Arbor, Michigan, where the debate was particularly acrimonious; Bloomington, Indiana; Madison, Wisconsin; San Diego and Stanford-Palo Alto, both in California; and New York State.

Central to these many hearings, forums and public debates have been concerns about the limited extent of the NIH guidelines (they do not apply to private industry or to research laboratories not receiving federal funds), the creation of "new forms of life" never before seen on earth (and, therefore, presumably posing a threat to the globe's animal and plant kingdoms), and the wisdom of using a bacterial host-vector system—*E. coli*, plus its plasmids or bacteriophages—in such experiments when it can also take up residency in humans.

Indeed, industry—and at least half-a-dozen of the major U.S. pharmaceutical houses—did its own cause little good when it insisted that its compliance with the NIH guidelines be placed on a "voluntary" basis, rather than a mandatory one, and that it be exempted from two particular requirements: (1) limitations on the volumes of recombinant DNA material that might be produced and (2) full disclosure of experimental processes. (Industry was worried about its proprietary rights.)

The upshot in the United States is that the Carter Administration recommended to the Congress that all such research be placed under federal controls, whether the experiments are done by universities under contract to the NIH or by private industry with its own funds.

"We are not saying that research be halted," said Joseph Califano Jr., Secretary of the U.S. Department of Health, Education and Welfare. "We are urging that it proceed under careful safeguards unless and until we have a better understanding of the risks and benefits posed by use of recombinant DNA techniques without government regulation."

As for claims that such work would yield new forms of life, Dr. Singer has branded them "misleading." A bacterium normally has thousands of genes, each of which contributes its specific product to the overall structure and functioning of the cell, she explained. "The introduction of one or a few foreign genes to this complex system may be able to alter certain properties of the cell," she told a National Academy of Sciences forum in March 1977 in Washington, D.C., "but the bacterium basically remains its same old self."

Should recombinant DNA research be done with some bacterial host other than *E. coli* K-12? Would there be less hazard posed to people by some other bacterial species? Such arguments, Sydney Brenner of Great Britain once remarked, are advanced as much out of ignorance of the ecology of other prospective bacterial hosts as they are out of knowledge of *E. coli's* characteristics. Moreover, an estimated three million or so recombinations have been made using *E. coli* hosts in the last few years, according to Singer, and "we still do not know that hazardous organisms can in fact be produced from recombinant DNA experiments."

Even if no hazardous by-products result from such experiments, some skeptics like Dr. Robert Sinsheimer of the California Institute of Technology (Caltech) have worried about the new technique's short-circuiting of eons of separate evolutionary patterns. Humanity has been directly interfering with evolution for centuries, reply advocates like Professor Stanley N. Cohen of Stanford University, through the practice of animal husbandry and the cultivation and cross-breeding of various crops.

And, says Cohen, people should not be confused by talk of "evolutionary wisdom." It is, the Stanford physician-researcher has said, evolutionary wisdom that has afflicted man with genetic combinations for bubonic plague, smallpox, yellow fever, typhoid and cancer. Indeed, the history of all biological and medical science is one of a continuing struggle against such evolutionary wisdom.

In the end, this new technology may or may not help to develop new plants which would forestall the threat of worldwide starvation, and it may or may not cure certain diseases. The most important benefit to come out of this research, Stanford University's Berg has stated, "will be the knowledge acquired about mammalian and human genes and chromosomes. That knowledge will make the diagnosis, prevention and treatment of disease more rational and effective."

IN PRAISE OF PERITIONAL DIALYSIS

By
MARGARET M. PLATTS M.D. F.R.C.P.
Reader in Medicine
Department of Medicine
Hallamshire Hospital,
Sheffield
ENGLAND

The symptoms and biochemical abnormalities of uraemia may be relieved by dialysis with either an artificial kidney or by peritoneal dialysis (P.D.). Writing from a relatively affluent centre to one where artificial kidney treatment must be very difficult to obtain, I do not know to what extent P.D. is used. However, I suspect that in your country, away from the large cities, where there are few doctors and none with specialised nephrological experience, that P.D. is not used so much as it should be.

Admittedly, P.D. is expensive if the commercially available solutions are used but it does not require sophisticated apparatus and is within the technical competence of any doctor or nurse. If solutions can be manufactured or improvised locally, then the procedure should not be prohibitively expensive if reserved for use in suitable cases.

Principle

Peritoneal dialysis solution, which is a physiological saline solution containing calcium and magnesium but no potassium is introduced through a cannula into the peritoneum (Table 1). Equilibrium of concentration of all small diffusible molecules then occurs between blood in subperitoneal capillaries and the dialysis fluid. This means that urea and creatinine and most other uraemic toxins pass from blood to the P.D. fluid in which they were originally absent. When the fluid is subsequently removed from the peritoneaum, ureamic waste products are also removed from the body. If, in an adult, two litres of P.D. fluid are run in and out of the peritoneal cavity hourly for about 40 hours a very useful amount of urea is removed from the body and, if the rate of urea production is not too high, the blood urea concentration will be about halved. There will be no net loss of sodium, calcium or magnesium because the concentrations of these ions in the fluid and the blood are initially about equal. Potassium will be removed from the body and this is usually desirable in uraemia to prevent hyperkalaemia.

Uraemic patients tend to be over-loaded with fluid. Excess water is removed in P.D. by osmosis because the P.D. fluid is slightly hypertonic to plasma. This hypertonicity of the P.D. fluid is due to its high glucose concentration. Firms which produce peritoneal dialysis fluids usually produce fluids with 130 mmol/L or 140 mmol/L sodium and about 1.5 or 6.5% dextrose (Table 1).

1. *The Cannula* — The sterile disposable ones (McGraw 'Trocath', Glendale, California 11201) are the most convenient but any sterile narrow gauge plastic tube will do. It should be introduced in the mid line a few inches below the umbilicus using a sharp stillette inside the cannula. The patient is sedated and local anaesthetic put into the abdominal wall. A very *small* incision is made in the skin through which the stillette and cannula will pass. The skin should fit tightly round the cannula thus making a water tight junction preferably without the use of sutures. The cannula should be positioned so that its lower end is well down in the pelvis. It will not drain if it is just inside the abdominal wall. A sterile dressing is placed round the tube which is then securely taped in place.
2. Two litres of fluid are usually run into the adult abdomen at once (less for children). The bottles or bags of fluid are attached to a Y shaped giving set *before* the cannula is inserted so that fluid may be run into the abdomen immediately the cannula is in place. Blood in the cannula is thus washed out before it has chance to clot and blockage of the cannula is prevented.

The Cycle

The fluid should be run into the abdomen as quickly as it will go, allowed to 'dwell' there for about half an hour and then withdrawn from the abdomen by putting the original containers, still attached to the giving set on a tray on the floor. The fluid syphons back in about 10 minutes. The first few cycles should be run without a 'dwell' period to prevent blood coagulating in the tube. After this, each cycle of two litres should last in all about one hour. Strict asepsis is needed when bags are attached to the giving set.

Duration of Treatment

Most treatments should be restricted to about forty cycles in forty hours. The cannula should be removed then and inserted again in a few days time if the blood urea rises. Infection of the peritoneum is much more likely to occur if cannulae are left in for more than two days.

Record Keeping

The most serious difficulties with P.D. arise through inadequate records. The patient should be weighed at the beginning and end of each treatment. An estimate of the amount of fluid he needs to lose (if any) should be made and written down at the beginning of a treatment.

Patient's blood pressure must be measured at the beginning and periodically throughout the treatment.

A special fluid chart (fig. 1) should be kept for the dialysis. On it are recorded the time and volume of fluid run into the patient. The fluid drained out of the patient must be measured either in a measuring cylinder or by weighing the bags and recorded, and a running account kept of the patient's positive or negative fluid balance. The fluid containing 1.5% dextrose will cause most patients to lose about 2 litres in 40 cycles. If a patient needs to lose more fluid than this then *occasional* litres of 6.5% glucose solution should be used as well. *Never* use continuous 6.5% solution since this withdraws fluid very rapidly and can cause shock.

Complications

The possible complications of P.D. are listed in Table 2 along with their management.

What kind of patients should be treated by Peritoneal Dialysis?

In a country with very limited resources, P.D. should only be used for patients with renal failure which is potentially recoverable. These will usually be patients with acute tubular necrosis complicating shock and in particular acute renal failure following obstetrical catastrophies. Patients with gross sepsis and multiple injuries or extensive burns are too catabolic and produce urea too quickly to be successfully managed by P.D. Patients with chronic irrecoverable renal failure should not be managed with P.D. unless a renal transplant can be arranged quickly.

But the woman who has been shocked due to obstetrical haemorrhage and now has tubular necrosis should do very well with P.D. properly managed. Other aspects of her treatment must not be neglected. It is almost universally true that kidneys of this type of patient will recover if the rest of the patient recovers. However, diuresis will not occur for about two weeks. The patient's nutrition and hydration must be maintained during this period and adequate amounts of dietary protein given. P.D. is carried out as often as necessary, to keep the blood urea below about 300 mg% (50 mm/L) and to keep the serum potassium at safe levels. Sepsis is treated bearing in mind that the maintenance dose of many antibiotics needs to be reduced in renal failure. Diuretics are not of much use in the treatment of acute renal failure.

It is more difficult to do P.D. if the patient has had a recent laparotomy but one should not be unduly deterred by this if it will prevent him from dying of uraemia.

In this age I believe that all doctors should be able to carry out a P.D. but in your country its use should be restricted to patients who have a good chance of survival with recovery of their own kidneys.

TABLE 1

Peritoneal Dialysis Fluid Composition

Dextrose	1.5 Gm/100 ml or 6.5
Sodium	140 mmol/L or 130
Calcium	1.8 mmol/L
Magnesium	0.75 mmol/L
Chloride	90 mmol/L
Bicarbonate (as lactate)	45 mmol/L

THE ROYAL HOSPITAL PERITONEAL DIALYSIS SHEET

NAME.. DIALYSIS No. ....

DATE.. SHEET No. ....

PRE-DIALYSIS

Weight..

Blood Pressure..

POST-DIALYSIS

Weight..

Blood Pressure..

ADDITIVES per cycle

Heparin..............................

Patossium............................

Antibiotics............................

CYCLE

No. of litres per cycle

In...........................

Resting.......................

Drain........................

FIG 1

Time	No.	Type Solution	Additives		Volume In	Volume Out	Balance	Total Bal.	Pulse	B/P	Observations
			Heparine	Others							

TABLE 2

Complications of Peritoneal Dialysis

Problem	*Signs*	*Action*
Perforated bowel	Watery diarrhoea +dextrostix	Remove tube Antibiotic P. and B.P.
Perforated bladder	Large volume of colourless urine +dextrostix	Remove tube
Peritonitis	Pain Turbid fluid fever	Culture fluid Continue dialysis Systemic and peritoneal
Mild haemorrhage	Bloody fluid	Continue dialysis rapidly to prevent clotting
Dehydration	Excess fluid and weight loss Low B.P.	More fluid by mouth Do not use '62'
Pain	Rectal .... Generalised	Pull tube out one inch ? peritonitis Lignocaine
Tube will not drain	Positive fluid balance Bags slow to fill	Alter patient position Squeeze bubble trap Do NOT syringe tube

SHORT STATURE

Condensed By
DR. SUHAIL ROOMI

Short stature is defined as a body height below the mean height for age.

Stature is a direct result of growth of both the axial (spine) and appendicular (lower extremities) segment of the skeleton, while the growth in height of a typical child is clearly non-linear, it can be divided into *time segments* during which the increments are essentially linear.

Tanner and Associates have provided data on increments (gains per interval of time), in height which can be used to estimate whether a child's skeletal growth is normal.

It is possible that the stature may be short and the rate of gain to be well within normal limits. This is particularly likely in infants and young children with low birth weight.

A child whose stature is below 50% (Table) but whose rate of growth is well within the normal range, will, in time, catch up in terms of absolute stature, at least to the limits imposed by parent's stature.

Therefore, while measurements plotted on a standard growth chart indicate how close to normal a child's height is at a particular age, use of standards of incremental growth enables a physician to detect a slow rate of growth before short stature develops.

The length of time over which growth measurements are made is an important element in the evaluation of growth with respect to both absolute stature and rate of gain.

A minimum interval between measurements decision about rate of gain, should be 56 days for infants (less than 5 months of age) and at least 3 months for older children.

NUTRITIONAL CAUSES OF SHORT STATURE

When a depressed rate of growth has been confirmed or short stature has been verified what nutritional causes might be suspected in a child.

a) Calorie malnutrition.
b) Mineral deficiencies.
c) Vitamin deficiencies.

When the growth rate is marginal, subclinical nutritional deficiency should be considered. Evaluation of diet (both quantity and quality) should be considered. Whether the net energy intake is adequate to meet the infant or child's needs for maintenance of basal activity of growth.

Distribution of calories among carbohydrates, fat and protein must be appropriate for age.

Intake of protein may be adequate to meet minimal requirements but if net energy provided from fat and carbohydrate is border-line then dietary protein may be used as an energy source rather than a source of amino acids for growth of new tissue (short stature). An insufficient quantity of the component in the diet may cause this problem.

In an infant or a young child with recurrent gastro-enteritis or intractable diarrhoea severe deficiency intestinal lactose and relative intolerance to lactose may develop.

Lactose provides 40% to 45% of the calories in young infants diet.

PROTEIN NEEDS

If the net intake of fat and carbohydrate is adequate to meet energy needs for maintenance activity and growth, protein deficiency should be considered. Protein requirements are estimated to be about 1.5 gm per 100 calorie per day during the first year of life and about 1.2 gm/kg/per/day from age 1 year until the adolescent growth begins.

Protein is provided largely by milk during the first year, later on by a combination of milk with other animal products (meat, egg, vegetable).

MINERAL NEEDS

Iron, zinc and calcium have major effects on growth. Iron deficiency anaemia which directly effects growth by reducing appetite and food intake.

Daily intake of 7-8 mg. of iron should be implemented.

CALCIUM

Sufficient calcium is essential for normal skeletal development. Excessive intake of protein or fat causes calcium to be excreted in abnormally large amounts and can lead to metabolic shortages which retards bone development.

PHOSPHORUS

Phosphorus is metabolised in a delicate balance with calcium metabolism. The ratio of tissue calcium in children is 0.5:1. An excessive intake of phosphorus can lead to calcium insufficiency even though the dietary intake of calcium appears adequate.

Binding of zinc, calcium, phosphorus and iron by phytates in cereals products has been shown to contribute to mineral deficiencies. Binding of necessary minerals by other dietary acids may be discovered.

VITAMIN 'D'

Recommended daily allowance of Vit 'D' is 400 I.U. Exposure of skin to sunlight allows synthesis of Vitamin 'D'.

RECUCED APPETITE

Reduced appetite also contributes to growth retardation.

Anaemia, marginal hormonal irregularities, chronic diseases, psycho-social factors can lead to growth retardation through reduction of food intake.

If growth, limited by parental stature or delay in onset of puberty can be ruled out, a nutritional evaluation may be fruitful.

DIET

- Amounts and types of food offered.
- Food likes and dislikes.
- Eating habits

may point to dietary insufficiency.

INVESTIGATIONS

- Serum levels of calcium, phosphorus, alkaline phosphatase.
- Radiographs of bones can provide evidence of sub-clinical rickets.
- Tests of urine concentration ability.
- Tolerance of lactose.
- Metabolic balance (calcium, phosphorus, nitrogen)

may evaluate the efficiency of digestion, absorption, use of energy and nutrient intake.

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Chronic neurotic anxiety

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GLIMPSES OF ELECTIONS 1978

ROMANTIC FEVER

FARZANA IQBAL
IVth Year

Romantic fever is a non-inflammatory and non-suppurative disorder of the nervous tissue which follows opthalmococcal encounteritis. It chiefly affects the brain and the heart in order of severity and has a marked tendency to recur.

AGE INCIDENCE. In about 80% of cases, the first attack occurs during the second decade; of the remaining, one half occur earlier usually between the fifth and tenth year of life. The primary attack rarely occurs after the age of thirty years.

AETIOLOGY. Presumably the high incidence of romantic fever in co-eds and liberal societies is due to increased likelihood of opthalmococcal encounteritis. The immediate onset speaks in favour of a direct effect of emotionotoxin on the higher centers. There is a strong evidence that the disease has immunological basis. Compared with those who make an uncomplicated recovery from opthalmococcal sour experience, patients who develop romantic fever have an unusually low antibody levels against various opthalmococcal species. The serum of many patients contains inherent auto-bodies which at intervals release a laouvotoxin that directly affects the brain and cardiovascular system giving rise to a condition called PSEUDO-ROMANTICISM, in which the patient begins to feel the brunt of innumerable admiring eyes and is elated.

CLASSIFICATION. Two forms are known :

(i) Acute romanticism
(ii) Chronic romanticism.

CLINICAL FEATURES. In acute romanticism, the attack develops immediately following encounteritis. Initially there is stimulation. The entire outlook of the patient is suddenly changed, dressing becomes a regular feature with frequent bouts of combing and tishen. This is known as 'active phase'. Tachycardia, breathlessness and romantic blush are the characteristic features. Extravagance becomes a common affair and the patients, specially the females develop a syndrome—Lingua twista americana. Other late manifestations are insomnia, chorea, nocturnal poeteria and bathrooma singalise.

The patient is least interested in studies, bunks classes regularly and flunks examinations off and on. The usual rendezvous is the college steps, parks, theatres, cafeteria but the patient may also be seen at the snack corner or on the car bonnets, visually or verbally involved.

If all goes well, the condition slowly reverts to normal, behaviour and studies gradually improve and with the consent of the parents a metallic ring is applied on the third finger of the left hand as a life-long prophylaxis against other species of opthalmococci.

Depressive form of romanticism is seen when the titre does not rise above 50%. Redemption is possible provided the brain involvement is not extensive. However, shallow breathing burning sighs, romantic pallor, grim countenence with that typical 12 o'clock look, anorexia and insomnia are the characteristic features. Late manifestations are delusions, hallucinations, psychoses, neuroses and extensive smoking plus jeanism with clotha dirteria.

Rebound depression is seen when frequent attempts fail to excite an opposite response and the patient becomes psychotic. In this case opthalmococci become indifferent. The situation is very critical and further aggravation due to the release of takin-toxin can push the patient into romantic shock.

In chronic romanticism the brain undergoes liquifactio abstractia and the cardiovascular system specially the myocardium becomes sensitive to opthalmococci. A small colony can excite a response causing profound hypertension. Such episodes gradually become so common that over a span of time the acute stage passes insidiously into chronic form. It is a combination of a depressive romanticism and rebound depression with frequent attacks of acute on chronic romanticism. In such patients, marked personality changes occur pseudo-romanticism is a common feature. Immunity is zero and recurrence becomes common. Posteria thefta is frequent with prominent dewanism.

PATHOLOGY. Strangely enough no vissible lesions have so far been detected. According to one theory the symptoms occur due to a deficiency of acklay-saleem in the cerebral cortex because of the tenfold increase in the amount of released emotionotoxin Derangement of mental faculties is worsened due to the subsequent release of takin-toxin. Hypertention, chorea, gulping, tremors, blushing, extensive urge to talk in the initial and rebound depressive states, may perhaps be thus explained.

TREATMENT. The treatment largely depends upon the nature of the case. Some species, due to their typical anatomical features can cause extreme personality changes and for a time redemption may seem impossible but since the effect is short-lived the symptoms may subside in 7-21 days.

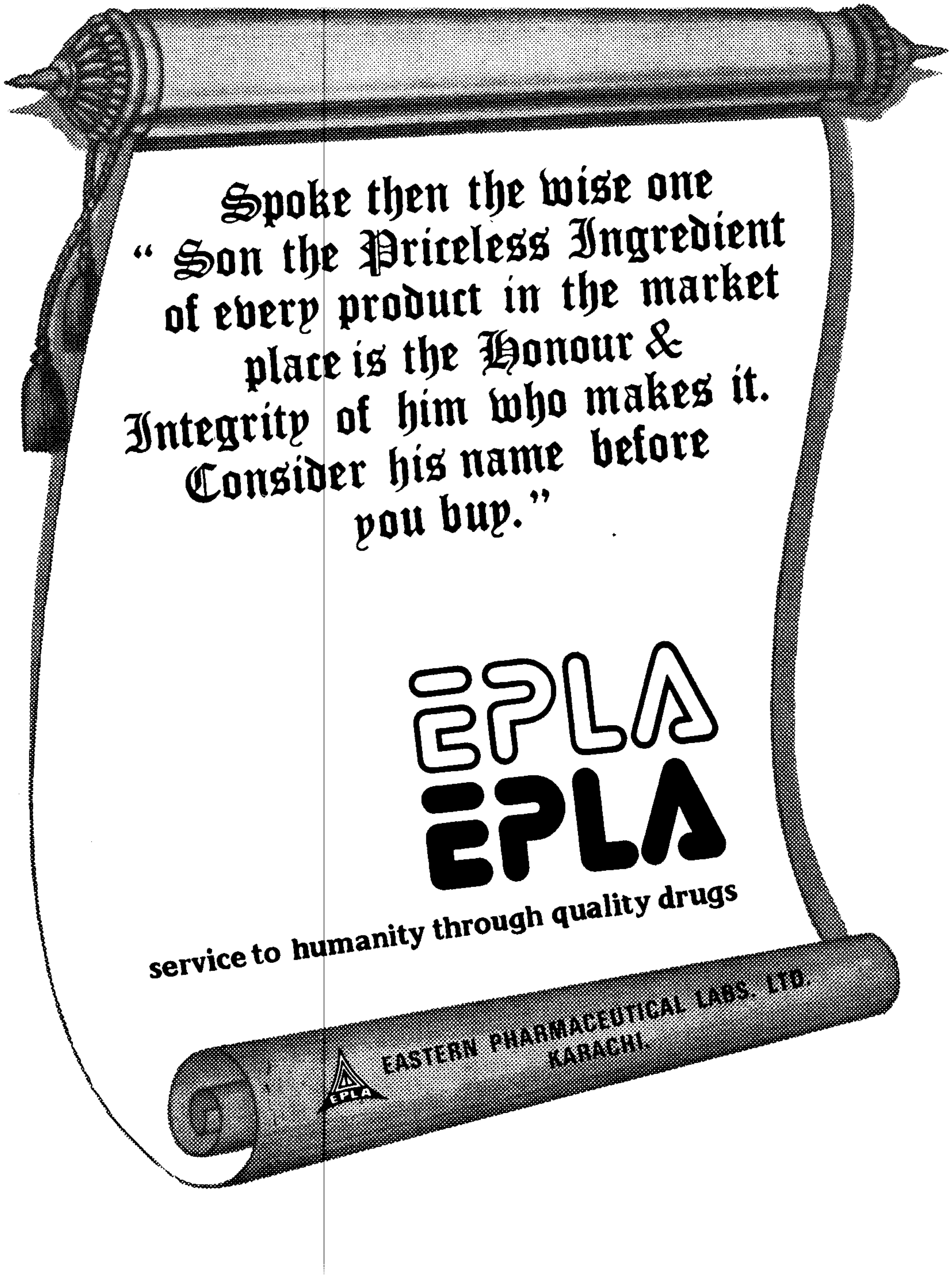
In milder forms no specific treatment is indicated. However, if the symptoms continue for over 21 days, a mild dose of DANT orally is sufficient. For stubborn cases, a heavy dosage is necessary. Relatively it has minor or no side-effects. Occasionally sensitivity is seen, in which case, the patient may develop lacrimation, grimace due to haphazard contractions of the facial muscles, respiratory rate increases. strange sounds begin emanating from the throat and finally, breathing becomes strenuous and some patients even collapse. Profound personality changes may occur; somnolence, indifference to the near ones and solitude are commonly seen.

Some patients may become aggressive, abusive and insolent. A few cases of suicide due to rebound depression have also been reported.

The other most widely used drug is MAR for topical application only. It can be applied with hands or spatulla. While applying, it should be noted that this drug should not be applied extensively to sensitive areas. It is relatively a toxic drug and over-dosage can cause skin lesions, fractures and internal haemorrhages.

SIDE EFFECTS. Contusions, lacerations, black eye, fractures, haemorrhages (internal and external) depending upon the dose applied and marked personality changes occur with psychoses, neurosis, hallucinations, delusions and the patients may commit suicide. Since MAR is an unofficial and illegal preparation, unwise and loathesome use can invite medico-legal intervention. In case of the death of the patient, life imprisonment, gallows or electric chair are inevitable. Therefore liberal use is to be discouraged.

It is always wise to begin the treatment with a mild dose of DANT, increasing gradually till a successful response is seen. In most stubborn cases a double regimen consisting of adequate doses of DANT and MAR may be instituted till a favourable response is seen. If the maximum dose therapy fails, never go for L.D. 50.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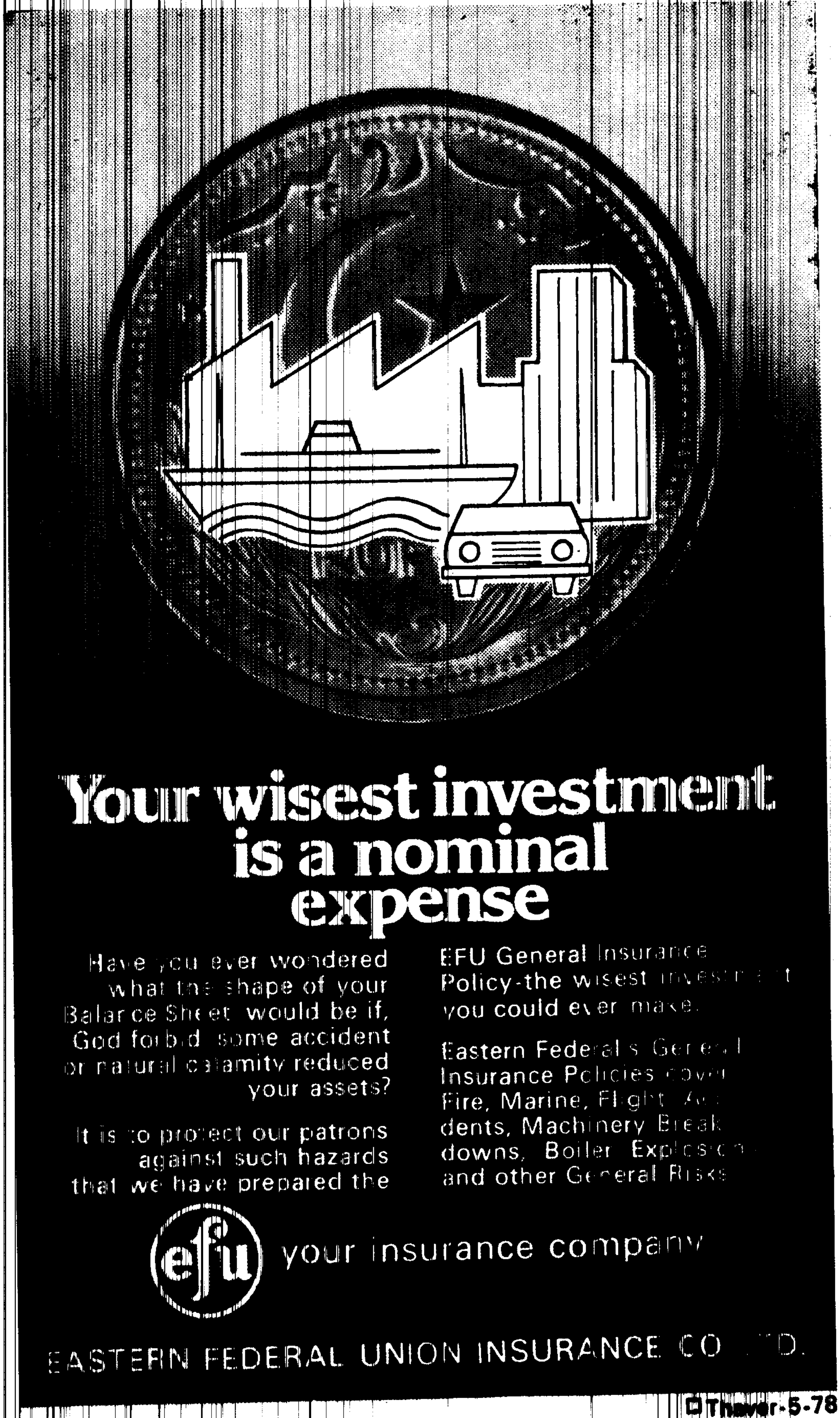

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YOU NEVER CAN TELL

When Dr. Marlin was a young medical student, he had pretty strong convictions on the stupidity of cluttering up and the world with people who are hopelessly ill and handicapped. He was a strong advocate of euthanasia. He used to argue about it with the other students in his class.

"But that's what we're here for," they protested, "—to take care of the lame, the halt and the blind."

"Doctors are here to make sick people well," Marlin always countered, "and if nothing can make them well, they're better off dead."

On his hospital duty, one night in Marlin's senior year, he delivered a baby to a German immigrant (to U.S.A.) woman in the slum section of the town. It was her tenth child, and it was born with one leg a good deal shorter than the other. Force of habit made Doc blow into the baby's mouth to get him to breathe, but after a moment he thought, "What the hell! All his life he'll have to go round with that awful game leg. The other kids will call him 'Limpy.' Why coax him to live? The world will never miss him."

But the doctor in him was strong, and somehow he couldn't stop trying to make that small pair of lungs begin working, so he started again. Finally there was the gasp he'd been waiting for, the rush of red to the baby's face, and then a feebly protesting wail.

Doc picked up his bag and left, kicking himself all the way across town. "I don't know why I did it," he grumbled. "Too many children already in that poverty-stricken home! Why did I save this defective one? The world would be better off without such cripples."

The years went by. Doc moved to a small manufacturing city and built up a large practice there. His youthful radicalism was now gone and Doc was just another plodding, always-tired physician, working like a dog to keep people alive no matter how much better off they'd be dead. Old Hippocrates had won.

Doc had his share of trouble. His only son and his son's wife were killed in a car accident, and Doc took their baby girl to look after. Doc adored her. The summer she was ten, Barbara woke one morning complaining of a stiff neck and funny pains in her arms and legs.

At first it was thought to be polio, but it turned out to be a rare virus infection that occurs so seldom it rates only a brief reference in medical text-books. In all his long practice Dr. Marlin himself had never run across a single case of it. He called in neurologists, who shook their heads. They said there was no known cure for the disease, which always progressed slowly to a greater or lesser degree of paralysis.

There's a young doctor, however, who wrote an article recently about his success in handling some of these cases," one of the specialists told Doc. "The name is Miller. I'd get in touch with him if I were you."

Doc took Barbara to the small private hospital where Dr. Miller had instituted his his new and revolutionary physical therapy techniques for victims of the various crippling diseases. Doc noticed that he walked with a decided limp.

"This game leg makes me one of them," Dr. Miller said, as he noticed Doc's glance. "I let the children call me Limpy and they love it. In fact, I like that better than my real name—Thaddeus—which always seemed to me rather stuffy. You see, like a lot of kids, I was called after a young medical student who brought me into the world."

Dr. Thaddeus Marlin swallowed hard. He remembered how, when he was a young medical student, he had said to himself, "The world will never miss him." How blind he had been in those days!

He held out his hand to the doctor who was going to make Barbara walk again.

It's better to be crippled than blind," he said.

HELPLESS LITTLE THING ?

Why is it that everyone refers to a baby as a helpless little thing ? Give a baby a home of his own, and he is the least helpless object in it. All he needs to do to have his every want filled is to let out one small peep. If help does not come at once, he need only extend this peep into a wail. And by forcing a bellow, he can throw the entire household into a tailspin from which it may not emerge for days.

He can't walk, he can't talk, he can't feed or bathe himself, and in that he has an unmixed blessing. Unable to walk, he can lie in bed all day and kick his legs — the envy of every adult who sees him. Unable to talk, he need never answer unnecessary questions, become involved in a political argument or politely tolerate a bore. When oppressed by the last, he can turn his head the other way, go to sleep, and have his actions approved by polite society.

He need never worry over what he is going to wear today or what he will eat for lunch. If he doesn't wear a stitch, he is perfectly content, and no one will raise an eyebrow. If he doesn't like his food, he can spit, blow or bubble it out, no matter who is watching, or he can disdain to eat at all. He can emit, at the end of a meal, a resounding belch, and be applauded for what two years later will be considered most unseemly.

Soon the world at large will criticize the way his hair grows, although now his admirers are enchanted because it grows at all. It will criticize the way he eats, although now all are ecstatic if he gets it down any way. If he turns out to be beautiful, good, rich, or successful, part of the world will envy him; and if he turns out to be ugly, mean, poor or a failure, the other part of the world will berate him. But now, probably for the last time in his life, he is eulogized by poets, patted under the chin by old ladies, cooed at by Scrooges, and adored by all.

Far from being helpless, he is the only human being who can take advantage of it. It wasn't idle conversation that prompted a pediatrician to muse, "In the next life I'm going to be a perpetual baby."

DO YOU ACT—OR REACT?

I walked with my friend to the newsstand the other night, and he bought a paper, thanking the newspaper seller politely. The vendor didn't even acknowledge it.

"A sullen fellow, isn't he?" I commented.

"Oh, he's that way every night," shrugged my friend.

"Then why do you continue to be so polite to him?" I asked.

"Why not?" inquired my friend. "Why should I let *him* decide how I'm going to act?"

As I thought about this incident later, it occurred to me that the important word was "act". My friend *acts* toward people; most of us *react* toward them.

He has a sense of inner balance which is lacking in most of us; he knows who he is, what he stands for, how he should behave. He refuses to return incivility from incivility, because then he would no longer be in command of his own conduct.

When we are enjoined to return good for evil, we look upon this as a moral injunction—which it is. But it is also a psychological prescription for our emotional health.

Nobody is unhappier than the perpetual *reactor.* His center of emotional gravity is not rooted within himself, where it belongs, but in the world outside him. His spiritual temperature is always being raised or lowered by the social climate around him, and he is a mere creature at the mercy of these elements.

Praise gives him a feeling of euphoria, which is false, because it does not last and it does not come from self-approval. Criticism depresses him more than it should, because it confirms his own secretly shaky opinion of himself. Snubs hurt him, and the merest suspicion of unpopularity in any quarter rouses him to bitterness.

A serenity of spirit cannot be achieved until we become the masters of our own actions and attitudes. To let another determine whether we shall be rude or gracious, elated or depressed, is to relinquish control over our own personalities, which is ultimately all we possess, the only true possession is self-possession.

PICTURE Vs. WORDS

"One picture is worth a thousand words" ?

The fact is that one picture is rarely, if ever, worth a thousand words. Some are worth only one : Phooey.

Far from being worth more than words, pictures can be downright frustrating. If you buy a new electric typewriter, what do you prefer: a glossy, glamorous picture of the machine? Or a 1000 word booklet telling you what to do with it? Pictures have their value, of course. But if they're a thousand times more versatile than words, let's see a picture of TRUTH.

And if you're still not convinced, fall in a lake and start gulping water — and then, instead of screaming the word HELP, hold up a picture of yourself drowning. If someone pulls you out, I lose my argument.

GIRLS PRE-CLINICAL EVENING

JULES VERNE'S TRIP TO THE MOON

By
NADEEM AHMAD NASIR
1st Year

The blast-off from Florida was almost flawless, and the spacecraft was hurtling toward its rendezvous with the moon. Inside, the intrepid 'aeronauts' arose from their 'couches' and decided that now was the time for a bit of celebration. One of them produced a bottle and they all toasted happily the "union of the earth and her satellite".

This distinctly non-NASA-like incident occurred not during the July 1969 flight of Apollo 11—but 114 years ago—in the fertile imagination of a French author named Jules Verne (1828-1905). Verne believed that man would one day reach the moon, and that the first man to do so would be an American—a tribute to what he called "the audacious go-aheadiveness of the Yankee."

Writing in 1865, Verne described a trip (From the Earth to the Moon and Around the Moon) which bears remarkable similarity to the real exploit of 1969.

Verne's space capsule contained three men—two Americans and a Frenchman. The dimensions of Verne's capsule and the actual NASA one were startingly, close. Verne's cylindero-conical aluminium shell was 15 feet high and 9 feet in diameter; the Apollo command module-10 feet, 7 inches high and 12 feet 10 inches in diameter.

The launch sites were almost identical : Verne chose a location near the 27 degree latitude in Florida—only about 140 miles West of Cape Kennedy—the actual launching site for Apollo 11. In the Verne narrative—Texas fought to the last moment for the honour of becoming the launching site; in actuality, Texas was the site of Mission Control (situated at Houston).

Initial velocity for the Verne Craft was estimated at 36,000 feet per second; after the firing of Apollo 11's third stage engine, velocity was 35,533 feet per second. Verne gave his capsule 97 hours, 13 minutes, 20 seconds to reach the moon. Apollo's time was 103 hours, 30 minutes. Verne's capsule orbited the moon several times, often at the exact height flown by the Apollo Command Module.

Spacemen in both capsules experienced weightlessness. Both took numerous photograph and made observatiens of the lunar surface, and the Verne men even charted the Sea of Tranquility—where Neil Armstrong and Edwin Aldrin were to take their fabulous stroll. Even the conclusions of trip were unbelievably similar. In both cases, the capsules splashed down in the Pacific, the spacemen were picked up by an American warship and returned to the mainland where they received coast to coast acclaim.

Verne was not a clairvoyant or mystic. He was a remarkable master of Science Fiction, writing in a climate that challenged scientific imagination. In the mid-nineteenth century, the steam engine and other products of science were making perceptive people realize that the world was undergoing a profound change. Verne was one of them, and he translated his ideas of the future into adventure stories. He wrote "Twenty Thousand Leagues under the Sea", before the submarine was invented; he masterminded the fastest circumnavigation of the globe—"Around the World in 80 Days", before the airplane.

In his moon epic, Verne's calculation proved to be accurate because he based them on the laws of physics and immutable solidities of astronomy—the most ancient of sciences. Modern technology provided Apollo 11 with the power to escape earth's gravity; Verne endowed his capsule with the power of his precisely informed imagination.

He aimed his vessel just as NASA aimed Apollo 11—toward the position where the moon would be at the time of arrival. But Verne's propulsion power came from a 900 feet cannon containing 400,000 pounds of guncotton. It was however, named the "Columbiad" Apollo 11's command ship was the "Columbia". And not one who watched the Apollo blast-off could quibble with Verne's 1865 description :

"An appalling, unearthly report followed instantly, such as can be compared to nothing whatever known, not even to the roar of thunder, or the blast of volcanic explosions. An immense spout of fire; the earth heaved up, and with great difficulty some few spectators observed a momentary glimpse of the projectile victoriously cleaving the air in midst of the fiery vapours."

Inside Verne's spacecraft, the astronauts relaxed on sturdy couches and cooked meals with gas. They had as passengers two pet dogs, plus six chickens. They also brought along cuttings from Medoc vineyards to plant on the moon, so as to eventually be able to wash down their chicken dinners more palatably.

Verne's spacemen did not land on the moon, because they made a slight trajection error. (This was fortunate because the author had failed to provide them with space suits). But Verne had provided his heroes with a set of Firecrackers-dynamite-type rockets which the ingenious astronauts used to conquer moon's gravity and start the journey back to the Pacific.

Fantasy, fiction and fact were finally fused one autumn day in 1969—in the French town of Amiens where Verne who had dreamed the impossible dream of a trip to the moon, spent his last years. Amiens made astronauts Neil Armstrong, Edwin Aldrin and Michael Collins—it's honorary citizens.

The postscript of this article is aptly provided by Leonardo da Vinci—(1452-1519)—famous Italian Universal Genius. His predictions about flight and his "mechanical bird" strangely foreshadow across four and a half centuries what man and Apollo 11 have finally accomplished. "The great bird", he wrote, will fill "the whole world with amazement," and will fill "all records with its fame and will bring eternal glory to the nest where it was born."

Today—though a whole decade has elapsed since that historic day of July 20th, 1969—when man conquered the moon—yet the memory of the three brave men who accomplished the "impossible" as well as that of the imaginative Frenchmen who 104 years earlier had predicted it with uncanny accuracy still remains fresh in our minds—and will remain thus till man's adventurous spirit is extinguished.

"TO ERR IS HUMAN"—

"It is one thing to show a man that he is in error, and another to put him in possession of the truth."—John Locke.

Or as Josh Billings said:

"The trouble with most folks isn't so much their ignorance, as knowin' so many things that ain't so."

THE IRISH POTATO IS NOT A POTATO, AND IT DID NOT COME FROM IRELAND.
(It is a tuber plant and came from Peru.)

MUSTARD GAS IS NOT GAS—NOR IS IT MUSTARD.
(It is a volatile liquid.)

PEANUTS ARE NOT NUTS.
(They are beans.)

A JUNE BUG IS NOT A BUG.
(It is a May beetle.)

TME EGYPTIAN SPHINX IS NOT A SPHINX.
(It is the statue of the God Harmachis.)

SEALING WAX CONTAINS NO WAX.
(It is made of shellac, Venice turpentine and cinnabar.)

TURKISH BATHS ARE NOT TURKISH—NOR ARE THEY BATHS.
(They are hot-air rooms of Roman origin.)

THE ENGLISH HORN IS NOT ENGLISH—NOR IS IT A HORN.
(It is French and a wood-wind.)

THE BELGIAN HARE IS NOT A HARE.
(It is a rabbit.)

AN AMERICAN RABBIT IS NOT A RABBIT.
(It is a hare.)

A PINEAPPLE IS NOT AN APPLE—NOR IS IT PINE.
(It is a berry.)

THE WHITE ANT IS NOT AN ANT—NOR IS IT WHITE.
(It belongs to the order of orthoptera, and is brown in color.)

RICE PAPER IS NOT MADE FROM RICE.
(It is made from a pithy plant called "tung-tsau.")

MOVING PICTURES DO NOT MOVE.
(They are a series of still pictures.)

CATGUT DOES NOT COME FROM A CAT.
(It is obtained from sheep.)

THE SILVER FISH IS NOT A FISH.
(It is an insect.)

BANANA OIL IS NOT MADE FROM BANANA,.
(It is a by-product of petroleum.)

THE MULBERRY IS NOT A BERRY.
(It is a multiple-stone fruit.)

TIN CANS ARE NOT MADE OF TIN.
(They are rolled iron, thinly coated with tin.)

THE STEEL GUITAR IS NOT MADE OF STEEL.
(It is made of wood and played with a steel bar.)

THE HORNED TOAD IS NOT A TOAD.
(It is a lizard.)

NEW ADDITION TO DMC BUS FLEET

(1) *Madam Kishwar Nazli declaring the buses opening for service* (2) *"Good manouverability" Murmers Madam Kishwar* (3) *A general view of the buses.*

THE DARE-DEVIL

This jesting, fencing dare-devil was the greatest goldsmith the world has known It is from him that all daredevil heroes of modern fiction derive.

Benvenuto Cellini was the quickest-tempered swordsman in all sixteenth-century Italy, and he made his enemies pay with their lives. Battle brought laughter to his lips, and the deepest dungeon could not hold him.

Above all, this swaggering rascal was the greatest goldsmith in the world. Some of the treasures he made can still be seen in London, Florence, Paris and Vienna.

Cellini was born in Florence in 1500. From his father, who was a maker of musical instruments, he inherited the skill of his hands. As a child he would stand in front of the gold-workers' shops, lured by the rat-tat-tat of the little hammers, the snuffling of the bellows, the glow of the coals. He would edge his way inside the shops, to see the gem-cutters at work on beautiful jewels, and to watch the gold being moulded and beaten into shape.

Soon he got himself apprenticed in one of the shops. This raised a storm at home, for Papa Cellini had set his heart on making a musician of him. Benvenuto's nimble fingers on the flute could draw tears of joy from his father's eyes, but he was not the lad to practise scales all day. He would run away for months at a time to escape the hated notes, supporting himself in neighbouring towns as a goldsmith's apprentice. When he was nineteen, in a temper with his father, he set out on foot for Rome, where the Pope was said to pour out money to artists as the city's fountains poured water.

His first job in Rome was to ornament a silver box for a Cardinal. This he decorated with interlacing leaves, fruit, children and grinning masks. The shop master was so proud of the box that he showed it all over the city. Benvenuto was even prouder to be able to send part of the fee to his father, whom he continued to support handsomely as long as the old man lived. For Cellini was as quick with a gift as with a blow. During his hardworking life he supported not only a widowed sister with six children, but also another poor family and many a young art student and model.

In Rome he made plenty of money, and soon had a shop of his own. Out of it came beautiful rings and brooches, inlaid knives and daggers, silver belts for brides, a silver pitcher for a bishop. Cellini made guns too, some of which he used for shooting wild duck in the marshes around Rome.

CRACK SHOT

It was a crack shot that started off Cellini's greatest adventures. In 1527 Rome was besieged by the forces of the Emperor Charles V of Austria, under the command of the Constable of France. Cellini, a volunteer guard upon the walls, peered through the fog and chanced to see the enemy plant a ladder against the walls. Raising his gun, he brought down the group's leader with one shot. Later Cellini wrote the story of his life, and in it he says that the man he shot was the Constable of France himself. Was Cellini merely boasting? History records that on that very day the Constable was killed by an unnamed sentry.

Cellini was now given command of the swivel gun on top of the mighty Castel Sant' Angelo, a famous Roman fortress. The Pope himself, Clement VII, came out to watch Cellini's marksmanship as he pounded the enemy's trenches.

When the war was over, the Pope made Cellini coiner of the Vatican mint. Cellini also created many gorgeous ornaments for important members of the Church. A button for a robe for the Pope required years of work before it was finished. Large as a butter dish, it showed God the Father surrounded by fifteen golden angels, all set with emeralds, sapphires, rubies, and a magnificent diamond.

Cellini fell in love many times, and he could hate as strongly as he loved. When his brother was killed in a street fight, he did not even consider calling in the law. What was the use, since the murderer was a corporal of the city guard? At last, in a dark alley, Benvenuto drew his dagger and killed the man himself.

IN AND OUT OF PRISON

When the old Pope died, and before a new one had been elected, Rome had no proper ruler. A rival Vatican goldsmith, named Pompeo, started out with ten swordsmen to find Cellini, Benvenuto happened to meet them in the streets, and in the scrimmage he stabbed Pompeo dead. Pompeo had important friends, and after this Cellini was constantly being attacked. He was waylaid by a Corsican assasin, and pursued to Venice by cut-throats. He always got the best of his enemies. But in 1537 the new Pope had him arrested and sent to prison.

He was sentenced to death, but craftily he prepared to escape. First he stole pincers from a prison workman. When fresh bed linen was brought to him by his apprentices, he stuffed pieces of his spoiled sheets in his mattress. With the pincers he extracted most of the nails from the iron hinges on the door, leaving just enough to hold it in place. So that the guards wouldn't notice anything, he replaced the nails with imitation nail-heads made of rust and candle wax. When all was ready, he knelt for a long time in prayer.

Just two hours of darkness remained when he pulled out the last nails from the hinges, and slipped silently out of the cell. With the knotted strips of sheet in coils on his back, he got on to the parapet, then let himself down into the court.

Night still lingered as he watched the sentries, timing his dash for the outer wall. Swarming up it with the aid of a pole he had luckily found, he fastened the remaining strips of sheet to a stone on top of the wall, and started down to freedom. But either the linen or his exhausted arms gave way, for he fell, breaking his leg.

He bound up his leg and crawled to the city gate. It was locked, but he somehow pulled out a great stone from under the doors and slithered under in agony. Beyond the gate mastiffs set on him. But a servant of the Cardinal of Venice recognized him, and took him to his master's palace.

As bad luck would have it, this Cardinal wanted a favour from the Pope. Now a bargain was struck and, in return for granting the favour, the Pope got Cellini back. He was thrown into a dungeon, deep at the bottom of Castel Sant' Angelo—a black pit where he lay delirious for days.

Away in France, King Francis I had expressed the wish to have this Benvenuto Cellini as his court goldsmith. So another Cardinal went to see the Pope, and Cellini was taken from his dungeon and sent to the most brilliant court in Europe. He was given splendid rooms to live in and plenty of assistants. He received many orders for works in gold, silver and bronze, including a huge golden salt-cellar, which today is the pride of a museum in Vienna.

PERSEUS

The king and queen, the Cardinal and nobles, often came to visit Cellini's shop. All seemed well. But Cellini had reckoned without a certain powerful lady at the king's court, and he neglected to ask her opinions on his work. Thanks to her scheming, little that Cellini planned for Francis I was ever completed. So in 1545 he returned to Florence, where he worked for Duke Cosimo de'Medici.

Cosimo suggested that Benvenuto make a statue of Perseus, the legendary Greek hero who slew Medusa—that evil creature with the body of a beautiful maiden but with hissing serpents instead of hair, and a face that turned men to stone.

Cellini made model after model in wax and plaster. At last, after nine years' work, he produced a figure, larger than life, that satisfied him. Now to cast it in bronze! This was one of the hardest tasks in sculpture ever attempted. Cellini had to devise his own furnace, moulds and metal alloys.

Here is the way Cellini himself described his task : "At last I called out to set the furnace going. Pine logs were heaped in, and my furnace worked so well that I had to rush side to side to keep it going. After striving for several hours, I had to fling myself on my bed as a sudden fever attacked me. When, two hours later, I strode into the workshop, I found the metal all curdled and the roof of the workshop on fire. I sent men on to the roof to stop the fire, and told two of my assistants to fetch a load of oakwood. When this caught fire, oh! how the metal began to stir in that awful heat, to glow and sparkle in a blaze.

"All of a sudden there was an explosion, with a tremendous flash of flame. I discovered the cap of the furnace had blown up, and the bronze was bubbling over. I opened the mould immediately, but the metal did not flow as rapidly as usual, because the base metal in the alloy had been consumed by the great heat. Accordingly I sent for all my pewter plates and dishes, to the number of about 200 pieces, and cast them in one by one. Now my bronze was in a perfect state for filling the mould. Seeing my work finished, I fell on my knees and with all my heart gave thanks to God."

The statue of Perseus was placed in a gallery opening on a square in the heart of Florence. There today, in immortal bronze, stands the hero holding up Medusa's head. For this work of art alone, Cellini ranks amongst the greatest sculptors.

On February 13th 1571, he died, and so his adventures came to an end. Yet they go on for ever, while people still read his *Autobiography*. The great French writer, Alexandre Dumas, read it—and then invented his laughing cavalier, D'Artagnan, friend of the three musketeers. Since then the figure of a jesting, fencing, kiss-snatching dare-devil has fluttered from a hundred books and flashed from a thousand cinema screens. The first of them all was Benvenuto Cellini.

YOUTH

A youth is a person who is going to carry on what you have started. He is going to sit where you are sitting and attend to those things which you think are important. You may adopt all the policies you please, but how they will be carried out depends on him. He will assume control of your duties, states and nation. He is going to move in and take over your places of worship, schools, universities and corporations. All your books are going to be judged, praised or condemned by him. The fate of humanity is in his hands. So it might be well to pay him some attention.

GLIMPSES OF SPRING FESTIVAL, FINAL YEAR

GOOD OLD DAYS

"Oh, for the good old says!" How often have we heard those words! How often have we been told of those good old days and of how happy they were. In those days the weather during all the months of the summer was perfect; in the winter it was just what winter weather should be. Life was more peaceful; events did not follow one another quite so quickly; friends were more true and more understanding. There was more respect for family life, men were happy in their work, and life was a very good thing. Those past days, we are told, were very different from the present days of restlessness and doubt, of the wrong weather in both summer and winter. Perhaps we ask: "When were those happy times, when all men were brothers, and life was so easy and free?" Some will answer that they were the years before Partition. Others will place them round about 1900, while others will place them in the "90's."

In our reading also we come upon stories of the golden days of the past, but we find here that at all times during the past two thousand years men have been pointing back to the happy days of old, attempting to paint for us a picture of those happy days, and to show us how much better those days were than the times in which they were then living.

What is the reason for this looking back into the past to find happiness? Perhaps it is that at almost any time there are many people who are leading happy lives but who do not talk or write about it; but there are also many others who were happy in their young days but who have not changed with the ever-changing conditions of the life going on about them. For these people the world used to be a better place than it is at present. There are few of us who cannot look into the past and find happy days. As children, we have little or no control over the details of our lives, but we are generally happy because we are able more easily not to regard these details if they do not please us. We can cut ourselves off from the outside world and build up a happy world of our own.

It might be easy for us to believe these people who find good only in the conditions of the past were it not for the fact that these same people will, at other times, tell us how different things were when they were young, how hard they were forced to work, for what long hours they were kept at their work, how few pleasures they had, and so on. And for every book which we read telling us of the good old days there will be another telling us of the bad old days, of the hard lives of the masses of the people. Most of us would not be willing to return to the conditions of life as it was lived 30, 40 or 50 years ago. We believe that it is better to be living in the present, with all the troubles of the present day. We know that we have no right to expect to be happy all the time, and we know also that by keeping in touch with the life and the thought and the interests of our own times, we can help to make the present days happy ones, both for ourselves and for others.

We can be certain, too, that at some time in the future old people will look back to these present days and will speak of them as the "good old days."

It is very often the people who talk most about the "good old days" who at other times tell us about the very hard times they had in their own early days. In these easy-going days, they say, young people do not know what it is to work really hard, and, they continue, it is as a direct result of their own hard work that they are today the men they are. And we, of course, are left in no doubt whatever that we of the present day can never hope to be as good men and women as our fathers and mothers.

If this is the case, the country today is in a very bad way. But is it the case? If the young people of today are of poorer quality than their fathers and mothers, we may ask whether the old people of today are in their turn of poorer quality than *their* fathers and mothers, who no doubt had to face even less easy conditions. Clearly, this cannot be the case, for if we are today any better than the people of a thousand or two thousand years ago, it is because on the whole the young people at any given time have been as good as the old people, and even a little better. The material conditions of life for the masses of the people of this country are better today than they have ever been. People generally have better food, better houses and better schools. More care is taken to see that young people, as far as possible, take up work of a kind which will interest them. And almost all large business houses now provide playing fields for their workers.

Not only are these better conditions offered to the people—it is of equal importance to note that the people are making full use of the better conditions. Authorities all over the country have provided schools where those who are at work during the day may increase their knowledge in their free time, either without charge or at a very low cost; and the attendances at such schools are growing yearly. Women all over the country and in every station of life are learning the food values of different kinds of food, and people generally are moving into the better kind of houses as soon as it is possible for them to do so. More people own their own houses today than at any time in our history.

It is quite true that to learn to face up to troubles and a hard life is a valuable part of our training; but even though the material conditions of our lives are better, we still have enough troubles to face and to overcome in our own times without wishing to turn our steps back into the past in order to find still more.

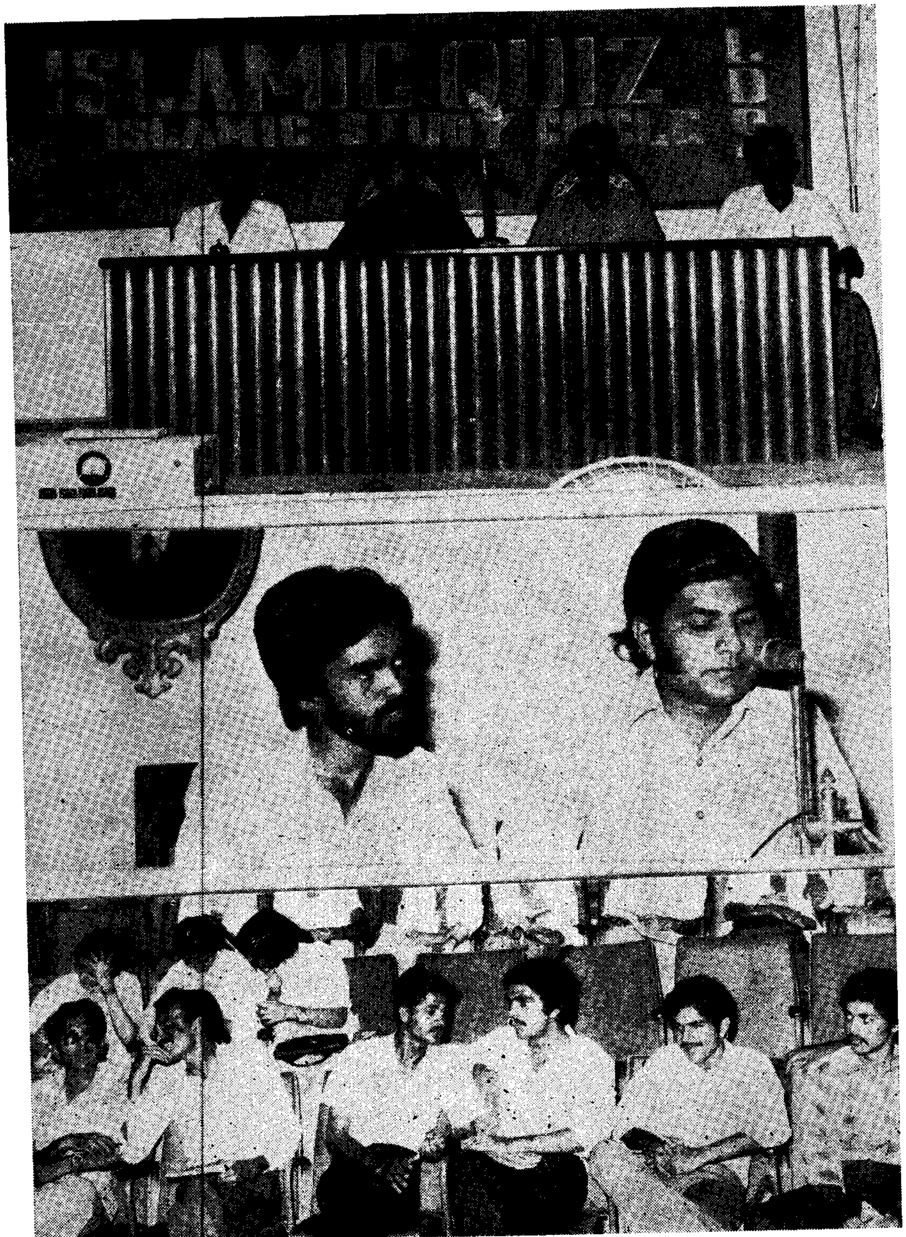
That girls and young women are today in a better position than their mothers were would not be questioned by many. They can lead very much wider and happier lives, and it is certainly not the women who talk with love about the good old days. But men have been doing it throughout the years. Here is one example. An old man writes :

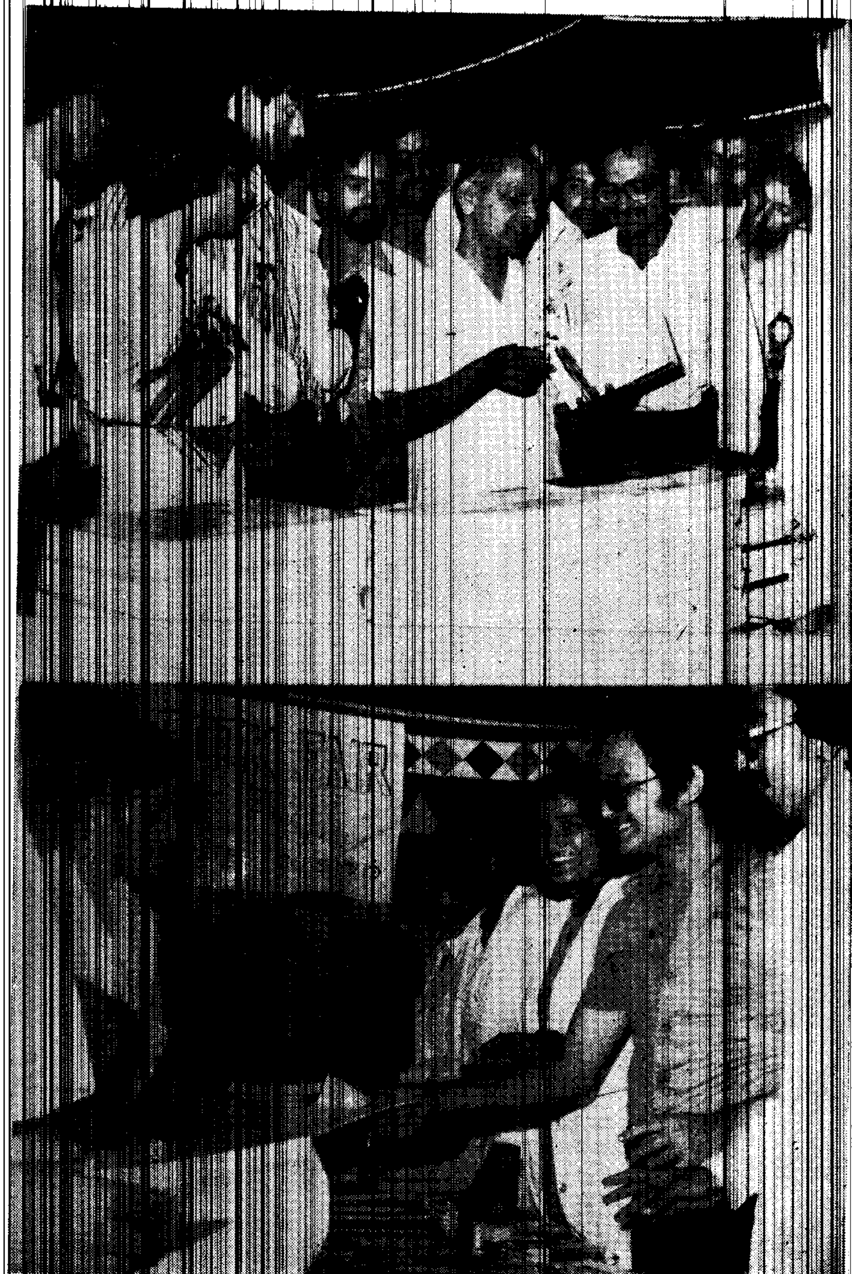
> "The minds of the young people are full of plays and shows; and if they are so interested in these things, what room is left over in their minds for learning? And," he adds, "the teachers are just as bad. With them, too, such subjects supply the material for talk more often than any others."

We feel that we have heard these words before. But when were they written? Nearly two thousand years ago ! Have we, after all, changed so very much?

SOHAIL BASHIR CHOUDHRY
IV Year M.B.B.S.

ISLAMIC QUIZ
(ISLAMIC STUDY CIRCLE) [redacted]





(1) *Prof. Fazl-e-illahi explains the importance of books to Rana and others around.*
(2) *"It's good and quite helpful too", Says Rauf "please buy it."*