THE THOUSANDTH BIRTHDAY

alternative title

PERILOUS BOON

Synopsis

PART I. A PERILOUS DISCOVERY

Chapter

1. Perplexed Guests

Dr. Adrian May, a biochemist employed by the Goodseed Memorial Foundation, is visited by a younger brother and sister-in-law. They are amazed to find Adrian, his wife, Phoebe, his horse and his dog, all looking so young. They try in vain to make Adrian divulge the secret of their youth.

2. Dr. May's Life-prolonging Hormone

Adrian, working on the reversibility of vital processes, finally developed a hormone that causes total reversal of ageing and appears capable of prolonging life indefinitely.

3. The Burden of a Premature Discovery

Although the publication of Adrian's discovery would bring him wealth and fame, probably a Nobel Prize, he is careful to keep it secret, because he knows that, on an already overpopulated planet, greatly prolonged life would be disastrous to humanity. To his amazement, an agent of the Soviet government offers to buy his formula. Then Gilbert Sorobin, his young assistant, wishes to leave because he feels that his chief lacks confidence in him. These developments induce Adrian to take his problem to the directors of the Goodseed Foundation.

4. The Secret Conference

Behind closed doors, Adrian discloses the whole situation to his

colleagues. Amazement! The public relations officer recommends publishing May's findings immediately, because of the probability that some other laboratory would make a similar discovery before long. The agricultural expert advises the prompt destruction of the life-prolonging formula and everything related to it, to avoid acute overpopulation and consequent disasters. Nobody agrees. Finally, Adrian proposes that he continue to perfect his method in a secret laboratory.

5. Gilbert and Marcia

A lovers' meeting. Gilbert Sorobin visits Marcia and they discuss his resignation. She thinks it unwise.

6. Invitation to Renew Youth

At a second secret meeting, the directors of the Goodseed Foundation decide to establish a laboratory in a remote trans-Andean valley, where Adrian and his staff can continue their researches in the greatest privacy. Adrian invites colleagues who wish to renew youth to join him there.

7. Marcia's Dilemma

Adrian invites Gilbert to accompany him to South America as assistant director of the new laboratory. He may take a wife, but they must agree to remain at the station for an indefinite period. Gilbert asks Marcia to go to South America as his wife, but, pledged to secrecy, he cannot tell her the purpose of the new laboratory. This makes her hesitate to join him.

8. A Spinster's Hopes

Florence Parelli, the distinguished director of the Foundation's program for child welfare in developing countries, considers

Adrian's invitation to join him in South America and renew her youth. She decides to accept.

9. A Priest Accepts

Father O'Shaughnessy, S. J., Ph. D. director of the anthropological section, considers Adrian's invitation in the light of Catholic doctrine and also decides to accept.

10. A Lovers' Misunderstanding

In a quiet woodland dell, Gilbert and Marcia discuss their problem. She refuses to accompany Gilbert without knowing more than he is permitted to reveal. They separate, and both are miserable.

11. To live or to Die

Various directors of the Foundation consider Adrian's invitation to renew youth. Some decide to join him at the secret station rather promptly; others, after they are older. Ralph Carlson, the sociologist, badly crippled by poliomyelitis since boyhood, has no desire to prolong life.

12. The Betrothal

Marcia's father suggests that she trust Gilbert. They marry.

13. "For Ever Wilt Thou Love..."

Adrian bids farewell to his aged mother, distressed that he cannot prolong her life without jeopardizing the secret. On the voyage to South America, Adrian at last divulges to Marcia the purpose of the new laboratory, and she is glad that she trusted Gilbert.

PART II. THE THOUSANDTH BIRTHDAY

14. Appraisal of a Long Life

Adrian May awakes on his thousandth birthday and asks himself whether it was good to have lived so long. Reviewing his past life and present circumstances, he decides that it was. His wife, Phoebe, awakes and congratulates him on having lived longer than any other human. She reminds him that no other marriage had ever lasted so long.

15. Callipolis

After working in his garden, Adrian and Phoebe board an electric tramcar to go to Callipolis, a typical city of the Great Renewal, where he is to give a television broadcast to a grateful world that is celebrating the birthday of its most distinguished citizen. The car is filled with people who appear to be in their late teens, although many are centuries old. The sexes look and dress alike. A view of the beautiful city and some of the living arrangements of the new society.

16. History of the Great Renewal.

Adrian's birthday address, broadcast by satellites to the whole Earth. He tells how his secret was preserved while wars, famines, and finally a devastating plague drastically reduced the global population. This catastrophe bred worldwide the firm determination never to let population get out of control again. In this endeavor the world was aided by Gilbert Sorobin's discovery of a method to delay sexual maturity with no detriment to physical or mental development. After population control had been achieved, the life-

prolonging hormone was made available to everybody.

17. Prospective Parents

A view of a house in Callipolis and its inhabitants. Since the death rate has been reduced to 0.5 per thousand per year, very few children are needed to maintain the population. Each community selects its prospective parents from among volunteers, by a secret ballot. Vera Vismia proposes to Bion Paston that he join her in standing for election. If chosen, they will receive treatment that cancels the effects of the sex inhibitor and makes them capable of begetting children for a limited period. They shrink from the changes that will come over them but generously wish to give life to others, because they have found their own lives so rewarding. They win the election in their community and join couples from other communities in a televised engagement ceremony, part of Adrian's birthday celebration.

18. The Ancient Enemy

While others are celebrating, Elaine Perama dies at the age of 458 from a disease that the doctors have forgotten how to treat, profoundly affecting friends unacquainted with death.

19. Children of the Great Renewal

After the public ceremonies, Adrian celebrates his birthday with his family and that of Gilbert and Marcia, including young children. They swim in a river and eat supper beside it. Although Adrian is nearly a thousand years older than his great-great-great-great-great grandson, they feel closer than parents and children did in the old days. In response to a child's question, Adrian compares the children of the Great Renewal with those of the twentieth century. As they walk home in the dark, Adrian hopes that he will live to celebrate his two-thousandth birthday.

THE THOUSANDTH BIRTHDAY

by

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San Isidro del General

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CONTENTS

FOREWORD

We humans are long-lived animals, surviving, if all goes well, much longer than most other mammals, including some much larger than ourselves. Yet, from of old, men have complained of the brevity of their lives. To prolong our conscious existence, whether in the flesh or in some disembodied form, is one of the most ancient, deepest, and most persistent of human aspirations. The mortuary practices of many peoples, notably those of the ancient Egyptians, have been profoundly influenced by this hope; religions and philosophies have grown up to support it.

Why do we grow old and die? We might suppose that the body, like any machine, wears out with prolonged use. However, this overlooks the fact that living organisms have powers of restitution and self-renewal that have never yet been built into any lifeless mechanism. Another possibility is that certain substances, by-products of metabolism, slowly accumulating in the tissues because they are inadequately excreted, eventually cause their deterioration. Although insoluble "age pigment" does collect in certain organs, including the brain and heart, it has not, to my knowledge, been demonstrated to be harmful. A more likely view holds that senescence is genetically programmed, like growth, the emergence of the milk teeth, the onset of puberty, and other events in our life history. One indication of this is the graying of the hair on the head long before that elsewhere on the body — proof that this does not occur because the organism has lost

its capacity to produce pigment.

Senescence, then, seems to be due, not to any fundamental incapacity of the human body to preserve its full vitality indefinitely (our teeth, which are replaced once, could conceivably be renewed repatedly) but to the fact that we are, so to speak, designed to grow old and to perish. This was a necessity of evolution, which cannot proceed without a succession of generations that, little by little, diverge from the ancestral type. Without death, we might still be amoebas, or whatever else our remotest progenitors happened to be, rather than men. We are not mortal because we are men; we are men because all our subhuman ancestors were mortal, and we have not yet outgrown this inherited debility.

In any long-lived animal, evolution is an exceedingly slow process. In innate characters, body and brain, man has changed little in the thirty or forty thousand years since Cro-Magnon people adorned the walls of their caves with drawings of animals so accurate and spirited that they still excite our admiration. The great advances that humanity has made since that remote epoch have been cultural rather than evolutionary in the strict biological sense — changes in the traditions, customs, material equipment, and skills that we pass on to our descendants rather than in the genes that we transmit to them. The conditions of modern life do not favor progressive evolution; on the contrary, they are more likely to promote the genetic deterioration of the human stock. In such circumstances, senescence and death lose their evolutionary significance. Yet we continue to grow old

and to die.

In recent times, life expectancy at birth, in the technologically more advanced countries, has become about twice as long as it was everywhere some centuries ago, and as it remains in the least advanced countries today. Nevertheless, our potential or genetically programmed life span has hardly increased since ancient times, when those fortunate enough to escape all the hazards of infancy, disease, and war often survived for eighty or even ninety years. Yet we are constantly gaining greater control over biological processes, and it seems not impossible that some slight genetic change, or some hormonal alteration, could delay senescence and greatly prolong human life.

This possibility raises a host of questions. Would a great increase of longevity, even of our best years, be desirable? Could we preserve our zest in living for, let us say, several centuries? Or, lacking sufficient novelty to sustain our interest, would we weary of the repetitious business of living, and die of ennui, if of nothing else? And what social changes would be called for by a greatly prolonged life span? What alterations in our birth rate, our educational system, our insurance and retirement plans, and many other details of life, would be needed? Indeed, the recent considerable increase in life expectancy in all the more prosperous countries has demanded adjustments that have not yet been effected, or not adequately made, and this is a major source of present troubles. Any further increase in longevity, without compensatory social changes, could be utterly disastrous.

In this book, I try to answer some of these questions. To make it more vivid and readable, I have imagined the experiences of a scientist who, by means of his own discovery, lives to celebrate his thousandth birthday in a transformed society, composed largely of people ancient in years but young in body and spirit. The book can be read either as a fanciful story or as a forecast of "the shape of things to come." The best science fiction has often been both.

Part I

A PERILOUS DISCOVERY

PERPLEXED GUESTS

"Good afternoon, Adrian. You're looking younger every year. It's amazing! How do you do it?"

"You're looking very well yourself, Fred. It's hard to realize that you've passed the half-century mark."

"I keep fairly well and can't complain, yet I feel age creeping up on me. But you seem to grow younger rather than older. What's the secret of your perpetual youth?"

"Proper diet, exercise, enough sleep — what everybody knows, and few practice."

"And perhaps some biochemical magic, shall we say? Or did you find Ponce de León's fountain of youth on your recent trip to Florida?"

"The fountain, of course, Fred. I'm on my way to the airport to meet my brother. Can I give you a lift?"

"No, thank you, Adrian. I'm going the opposite way."

From the spacious entrance hall of the research laboratories of the Goodseed Memorial Foundation, the two scientists passed through the open door into the brightness of a midsummer afternoon. The shadows of maple and sycamore trees lay heavily upon the smooth green lawn. Gratefully inhaling the aroma of freshly mown grass, Dr. Adrian May, head of the biochemical

laboratory, turned left toward the car park, while his colleague, Dr. Frederick Thorne, geneticist, continued on foot down the shady pathway that led to the town.

"Biochemical magic!" mused Adrian, as he drove along the speedway to the municipal airport. "Magic of the chemistry of life! Thorne is sharp, and he has been trying for a long while to worm my secret from me. Biochemical magic! He could not have expressed it more concisely. Undoubtedly he suspects much, but I wonder how much he actually knows? And how much longer can I brush aside him and the others with pleasantries about the fountain of youth?"

As he neared the airport, Adrian fell to wondering how he would find his younger brother, George, a prosperous businessman in a distant city. He and his wife, Lilian, were coming for a weekend visit, their first in a dozen years.

With his habitual promptness, Adrian was waiting when the big airliner arrived. Intently, he watched the scores of passengers file down the landing steps, clutching their miscellaneous possessions, from umbrellas and briefcases to babies and caged canaries. Disappointment surged over him as the last of the passengers left the cabin and he recognized no familiar face among them. But no! Could that elderly gentleman, impeccably dressed, with a carefully folded overcoat over his arm on this mild summer day, be his little brother George? And the stout, gray-haired lady following him, could she be his sister-in-law Lilian? Yes, they certainly were! But how the years had weighed

upon them! With a start, he realized how old he might have looked at the age of sixty-four.

"But Adrian, you have hardly changed at all since we last saw you, thirteen years ago!" exclaimed Lilian as she pressed a sisterly kiss upon his cheek. "If anything, you look younger. Anyone would say that George is the older of you brothers, yet he is six years younger."

"Only five," Adrian corrected her. He did not wish to be meticulous, but he was eager to soften, however slightly, the contrast between his brother and himself.

"I hope that Phoebe is well," said George.

"She's quite spry, thank you. She asked to be excused for not coming to meet you, but she is very busy today preparing for our guests. Household help is hard to get in these parts."

"We understand. It's no different where we live."

On the homeward ride, the conversation centered on sons and daughters, nephews and nieces. Adrian and Phoebe had two children, a son and a daughter, who together had already given them three grandchildren. George and Lilian had three sons and two grandchildren.

The Adrian Mays lived in the country, in a pleasant two-story house surrounded by lawns, flower beds, fruit trees, and a small pasture where a horse grazed. When she heard the car approaching, Phoebe came out to welcome her guests. The sisters-in-law embraced each other warmly.

"How young you look, Phoebe! I never imagined that a grandmother could appear so youthful. There's hardly a wrinkle in your

face or a gray hair in your head, and I don't believe that you dye it. It's amazing how young you both look. I can't get over it."

"Here's Spotty come to greet you," said Phoebe, calling her guest's attention to a black-and-white terrier who frisked around them with wagging tail. "He seems to remember you after all these years."

The visitors dutifully patted the little dog's head.

"But this can't be the same dog that you had when we were here in 1955," insisted George. "He would now be at least fourteen years old, and at fourteen a dog shows its age. Spotty looks, and acts, like a puppy."

"He's the very same Spotty."

After the visitors had washed and changed their clothes, they strolled around the shady grounds with Adrian, while Phoebe prepared the supper. As they approached the paddock, Traveller raised his head from the grass that he had been cropping, neighed softly, and came running up to the fence, expecting a caress, or perhaps a banana. George threw away the cigarette that he had been smoking and rubbed the horse's velvety muzzle. A follower of the races, he considered himself a judge of horses and regarded the animal with a critical eye.

"Beautiful creature!" he exclaimed approvingly. "When did you get him, Adrian?"

"He's the same horse that we had when you were last here," replied the brother. "Don't you remember him?"

"H'mm! That horse can't be more than eight years old, and

we were last here thirteen years ago. It doesn't seem possible. Time seems to stand still here. You, your wife, your horse, and your dog show no trace of the passing years. If anything, I should say that you and she look younger than I remembered you to be. The only changes that I notice are in the trees, which have grown bigger, and the neighborhood is more built up, as is happening everywhere in this overcrowded land. How do you all manage to stay so young? Look at me! I'm five years your junior, and anyone would say that I'm the elder brother. And Lilian, I believe, is a year or two younger than Phoebe, who looks much younger. What is your secret?"

"Yes," added Lilian, "tell us your secret recipe for staying young. We envy you. To feel oneself growing old is not pleasant."

"There's no great secret. In the first place, a life devoted to scientific research, such as I lead, is less wearing on the nerves than a business career, such as George follows. And this difference can hardly fail to be reflected in our wives; I have no doubt that you, Lilian, have more exacting social obligations than Phoebe has. Then it is my business to know something about the rules of health, and we try to follow them. We do not smoke, for example, and we try to sleep at least eight hours every night."

George looked at his brother pointedly.

"Is that all?" he asked.

"Those are the main things," Adrian replied evasively. "Come, I'd like you to see Phoebe's rock garden before it grows too dark. She's very proud of it."

Adrian felt uncomfortable. He was not a diplomat but a scientist, accustomed to give straight answers to straight questions. For some years, however, he had found himself under an increasing burden to conceal and to evade, in matters touching both his scientific work and his personal life - to resort to deception, as though he were a criminal or a spy. He did not relish it in the least; but despite much earnest thought, he had found no better solution to the problem he faced.

After supper, the brothers sat on the porch in the twilight, talking, while Lilian, helping Phoebe with the dishes, tried hard to extract from her sister-in-law the secret of her continuing youthfulness.

"Oh, Adrian, who is a wizard at chemistry, regulates our diet scientifically, and occasionally he gives us injections of vitamins, a special formula of his own. Since we began taking them some years ago, I not only feel, but look, younger."

This was as far as Lilian could get. Phoebe herself did not know why she, her husband, and their pets kept so young.

DR. MAY'S LIFE-PROLONGING HORMONE

When Dr. Adrian May went to work as a research scientist in the biochemical laboratory of the Goodseed Memorial Foundation, he chose for his special field of investigation the reversibility of biological processes. It has long been known that many of the changes that occur in living organisms are cyclic or reversible. One of the simplest examples is the interconvertibility of sugar and starch: under the influence of appropriate enzymes, soluble sugars solidify into grains of starch, and these can be mobilized as sugar again. In animals, muscular action depends upon the alternating contraction and recovery of the molecules in the muscle fibers. In birds and other wild creatures, the testes alternately grow and shrink, passing from the expanded, active stage to the shrunken, quiescent stage, year after year. But perhaps the most familiar example of the reversibility of vital processes is sleeping and waking, a phenomenon almost universal in the animal kingdom, and even found among plants.

In the embryonic development of many vertebrates, certain organs grow, function for a while, then dwindle away — obvious examples of the reversibility of organic processes. Those who have hatched frogs' eggs may have watched the embryos develop long tails and feathery external gills, which shrink and vanish as the aquatic tadpoles metamorphose into amphibious frogs. After much painstaking experimentation, Dr. May succeeded in controlling these processes. By injecting into a tadpole minute amounts of a carefully prepared hormones, he could make its tail grow and

shrink repeatedly, while a similar alternation of enlargement and absorption occurred in the gills and other less obvious organs.

As years of dedicated research were added to dedicated years and the list of vital processes which he could experimentally reverse grew longer, Adrian found his mind turning more and more to a searching question: If some biological processes can be reversed, may not this be true of all of them? The totality of the vital processes of any organism carry it through embryogeny and growth to maturity, senescence and, finally, death. Wholly to arrest these processes at any stage would result in immediate death, for to live is to undergo process, to change. Apparent exceptions are found in plants dormant during seasons of cold or drought, in hibernating and estivating animals, and, above all, in seeds, which in rare instances may remain viable for scores or even hundreds of years. Although such resting organisms retain their vitality, they can hardly be said to live, in the dynamic sense of the word. Their vital processes have not been utterly halted but are so exceedingly slow that they are difficult to detect. Probably no man would count it a gain to have a century added to his life, if the whole increment were passed in sleep — unless, indeed, he could expect to awake and live the remainder of his active years in an era happier than the present one.

Although the totality of the vital processes of an organism cannot be stopped without bringing on death or a suspension of activity that resembles it, they might be reversed with more desirable results. Might it not be possible to prolong an

animal's life substantially, perhaps even indefinitely, by a series of carefully controlled reversals: by letting it grow old for a while; then reversing all the processes which lead to senescence and making it grow physiologically younger; then, before it passes into infantine helplessness, halting the retrograde movement and permitting the normal processes of maturing and ageing to resume their sway?

A man of forty, for example, might by such reversals become what he was at twenty, then mature for another two decades, then be slowly restored to youth once more — so that his physiological age would fluctuate repeatedly between two limits, although his chronological age would, of course, continuously increase. Thus might the prime of a human life be prolonged for many years, perhaps even until secular changes in the solar system made this planet no longer habitable by man, or some ~~fatal~~ accident cut life short. But even a few years added to the middle span would be far preferable to the extension of doddering or pain-racked senility, that questionable gift of modern medicine to humanity.

These thoughts flashed into Adrian's mind without warning, one day while he was making routine observations on his tadpoles. For two nights he was kept awake by the grandeur and daring of his conception. Then he was sobered by thinking of all the obstacles that stood in the way of its realization. He tried to brush aside the idea as a scientific fantasy, but an insistent question kept recurring to his mind: If some of the processes of maturation can be reversed in frogs, why not in higher animals?

To him as a research scientist, the question presented a challenge that he could not evade. Without permitting himself to cultivate grand illusions, he would at least make a few experiments in this field.

Adrian did not suppose that the same hormone that reversed development in tadpoles would be effective in warm-blooded vertebrates, but perhaps with some modification it might work. He had developed an uncanny skill, for which he was famous, in shifting about the atoms in large organic molecules, often with unpredictable results. He acquired some white rats approaching the end of their normal life span and, as a preliminary experiment, injected into them small amounts of the frog hormone. After some weeks, the rats seemed to have become a little less senile, but the change was not convinwing. Taking this same hormone as a basic pattern, he modified it in various ways, in one batch adding a side chain to the molecules, in another shifting the position of some nitrogen atoms, until he had several samples of the stuff, each differing slightly in molecular structure from the others.

In carefully controlled experiments, Adrian treated a number of senile rats, mice, and guinea pigs with different samples and eagerly awaited the outcome. One preparation proved to be lethal. Another, differing only slightly in molecular structure, caused loss of appetite. Others seemed to have no effect at all. But one sample, which he had designated by the symbol H59, had marvellous potency. After a few weeks, the decrepit rats treated with it had become active and playful. Three months after treat-

ment began, a female became pregnant, although she had already passed the age at which laboratory rats reproduce.

Adrian's elation at the outcome of his experiments was tempered by dread. Although an enormous amount of work remained to be done before his procedure could be safely applied to humans, he had little doubt that in time he, or somebody else, would succeed in doing for men and women what he had already done for rats. This might go far toward satisfying man's age-long thirst for a more joyous existence, indefinitely prolonged. The ancient promise of religion might be fulfilled, at least partially, by modern science. So far, so good! But the probable demographical consequences of his discovery were terrifying.

Adrian was primarily a biologist and only secondarily a skillful chemist. Unlike certain pure chemists, biologists with some understanding of population dynamics fear the contemporary "population explosion" more than the hydrogen bomb. To them, to halt the unprecedented increase in human numbers and stabilize the population is the first and foremost problem of humanity, upon the solution of which that of every other major problem confronting mankind ultimately depends. Even if some of the most extravagant claims for scientists' ability to produce synthetic foods for many times the number of people who now exist should prove to be well founded, who would care to dwell in a world in which one could hardly move without bumping into his neighbors, in which strict governmental regulation would be necessary to control and provide for the immense masses of people, in which wild nature, with all its beauty and interest, had been nearly

everywhere trampled underfoot by teeming humanity? And the denser the population becomes, the more urgent will be the need to prevent its further increase. What would happen to a humanity already multiplying with alarming speed, if the life-span of individuals were to be indefinitely prolonged? Adrian shuddered at the thought. We thirst for a longer, more satisfying life, but we seldom pause to consider what would happen to the world if the present average life-span were to be so much as doubled.

Adrian faced a difficult choice. To abandon these new experiments would be to forego the completion of his life's work on the reversibility of vital processes. Moreover, it would be to turn away from the enticing prospect of longer life for himself, those he loved, and all good men everywhere. What breadth of knowledge, what depth of insight, might one not achieve if he could live for a few centuries with all his faculties unimpaired! On the other hand, were the results of his preliminary experiments to become widely known, in a surprisingly short time they would be repeated and extended all over the civilized world; and before long the great pharmaceutical companies might be selling, worldwide, preparations for the prolongation of life, thereby multiplying immeasurably the problems facing a humanity pitifully unable to solve those which already confront it.

After much soul-searching, Adrian resolved to continue his experiments in secret. This was a radical departure from his usual practice, which was to announce rather promptly, in an appropriate scientific journal, any experimental results that appeared to be well-founded and significant. Such divulgation of

his findings was expected by the Foundation that employed him, for it added to the store of human knowledge and increased the Foundation's prestige. But in the present instance he felt that he was on the track of something so revolutionary that a change in policy was necessary, and he would have to take the responsibility for it on his own shoulders, without consulting the directors of his organization. For the greater the number of people who knew what he was doing, the greater the danger that the information would leak out prematurely and work havoc in the world. Even from his colleagues and assistants in the laboratory that he supervised, he must conceal the full import of his work, although this would be difficult. And while he developed his great discovery, he must continue, and even intensify, his work on more limited problems, the better to divert the attention of those around him from his transcendent project.

After Adrian had demonstrated that he could reverse the process of ageing in such laboratory animals as rats and guinea pigs, the next step was to try his method on larger creatures. His dog and his horse were showing the impress of the years, and he decided to try to rejuvenate them. He was not at all sure that the same hormone that had proved effective in rodents would produce the desired effects in animals belonging to other zoological orders, and he was uncertain as to the dosage, but he made some shrewd calculations and then proceeded to test their worth.

He had noticed, in other cases, that the reversal of a vital process took about as long as the original process, so that an

animal that matured rapidly would rejuvenate rapidly under the influence of his injections, whereas one that matured slowly would take longer to respond perceptibly to them. Before long, the stiffness of age began to depart from Spotty's limbs, and instead of lying all day on his rug, he followed his master through the fields with the same eagerness that he had shown while young. After a longer interval, the white hairs that had been gradually increasing in Traveller's bay coat began to disappear; the depressions at his temples filled up; even his dentition failed to reveal the marks of increasing age. Six years after the treatment began, when he should have been a horse far past his prime, he was gambolling about the paddock like a colt. He looked, and acted, twelve years younger than he was.

Adrian had now demonstrated the possibility of total reversal in three orders of mammals, the rodents, the carnivores, and the ungulates. The next step was to try his method on primates. The orthodox procedure would have been to experiment with monkeys and apes. But Adrian had long been distressed by the common practice of inflicting a heavy burden of suffering on man's humbler cousins, in order to discover things of possible value to mankind; and, moreover, to have conducted the tests on such large and attention-calling animals at the Goodseed laboratories would have attracted publicity that he wished to avoid. So he boldly resolved to try his method on himself.

Adrian's motives for taking this course were mixed, as most of our motives are. In the first place, it seemed the manly, courageous thing to do; and Adrian was no coward. Then, too,

he had a horror of old age, not only because of the multifarious aches and maladies which commonly afflict it, but even more because to contemplate the decline of his powers, mental and physical, was painful to him. Senescence he regarded as the greatest injustice, the cruelest punishment that life inflicts upon creatures. To grow, to expand, to see more clearly, experience more widely, understand more deeply, live more fully, is the fundamental urge of the human spirit; and although it often expresses itself in inconvenient or evil ways, as in unquenchable acquisitiveness or the will to dominate others, this principle of growth must be regarded as the chief glory of man, which has impelled him to all his most admirable achievements. At first, spirit and body are in harmony; they grow in amplitude and strength together. But, finally, there comes a time when the spirit, still thirsting for life and growth, finds itself imprisoned in a body whose powers are declining. This is the greatest anomaly, the most glaring maladaptation of body to spirit.

It is not too difficult to reconcile oneself to this situation if one believes that, after its release from the corruptible body, the spirit lives on, finding fuller expression of its powers in a transmundane sphere. But Adrian questioned this comforting teaching of religion; as a scientist, he saw serious difficulties in the doctrine of spiritual survival. In his early fifties, he was still hale and strong, and aside from his reading glasses, he required no artificial props. But lately it had become increasingly evident to him that he tired more

quickly and recovered more slowly than when he was younger, and to an active man this is one of the most distressing of the symptoms of advancing years. The prospect of halting, and even reversing, this decline was one of the strongest inducements for treating himself as he had treated his guinea pigs, his horse, and his dog.

Since the symptoms of old age creep upon a healthy man almost imperceptibly, Adrian expected that the reversal would also be extremely slow. To try to accelerate it by excessive doses of the hormone might have lamentable consequences. In order to have an objective record of what was happening to him, he had himself photographed, his blood pressure measured, and a number of other physiological tests made. Then, alone in his laboratory, and not without trepidation, he gave himself the first injection of the reversing hormone, half as much per pound of body weight as he had finally given his dog and his horse.

An hour passed, a day, a week, and he felt no effects whatever. At the end of a fortnight, he gave himself the full dose. This was followed by a slight headache and nausea; but after a number of fortnightly repetitions of the injection, he discovered that he could prevent this disagreeable aftermath by taking a few tablets of aspirin.

One of Adrian's greatest fears was that the treatment would affect his memory. It would certainly not have been surprising if, in reverting to a physiologically earlier stage of life, one forgot all that he had learned in later stages. Perhaps, at the end of a year of reversal, one would have no recollection of

anything that he had learned or experienced in the preceding year of maturation, while in the second year of reversal he forgot all that he had learned in the second preceding year, until, if he continued long enough, all his mental acquisitions would fall away from him. How embarrassing it would be to forget the faces and names of all his more recent associates and acquaintances; to have no recollection of what he said or did last year, or even last month! In such a predicament, he might be prematurely retired from his job, perhaps sent to a mental hospital. Besides, would it be worth regaining one's lost youth at the price of all the knowledge, wisdom, and precious experiences that later years had brought? Was not one of the greatest inducements for remaining in the prime of life the possibility of continuing to grow in knowledge and insight, of making ever richer one's treasury of memories?

Suppose, in the worst of cases, one forgot so completely that he was not even aware that he had forgotten. To guard against this eventuality, Adrian, before beginning his treatment, made some notes reminding himself to test his memory and placed them where he would be likely to come across them during the next few months. But as fortnightly injection followed fortnightly injection, and he was never embarrassed by failing to remember a recent acquaintance who approached as though confident of recognition, or by forgetting where he had placed something that he had last used some months previously, or by being unable to account for what he did or where he was during the weeks immediately preceding the beginning of the treatment, his fear that it

would adversely affect his memory subsided. To test himself further, he tried to recall what he had read in books and scientific journals published during this preceding interval, and found no reason to suspect that recently acquired information had slipped away from him.

From this observation, Adrian concluded that either the reversing hormone was having no effect upon him, or that its effects were limited to the body. After all, the mind does not grow old in the same way as the organism does, and its apparent decay in extreme senility is probably to be attributed to the deterioration of the organs through which it communicates with its environment. When, some years later, Adrian had become quite certain that the body could revert to an earlier stage without affecting later mental acquisitions, this discovery helped to strengthen his faith in the possibility of spiritual survival.

At the end of a year, Adrian was convinced that, at least, he had not aged since he began his treatment, but he was still not sure that he was rejuvenating. After five years, he had no doubt that the reversing hormone was affecting him just as it did the other animals that he had treated. When he compared his portrait taken five years ago with his image in a mirror, he was astonished at the differences they revealed: the furrows in his face were less pronounced; the crowsfeet around his eyes had vanished; the flesh beneath his chin was less flabby. His hair, which had been graying fast, was resuming its original shade of brown. He had become less farsighted, and had discarded the stronger eyeglasses that he had obtained when about fifty

to return to the thinner lenses that he had earlier used for reading. His blood pressure had fallen slightly. Most gratifying of all, he had more energy and could work a longer day, or take a longer walk, without feeling tired. And harmful side-effects, for which he looked in the animals he had treated no less than in himself, had nowhere appeared.

The certainty that he was growing younger and stronger in body, with no loss of the knowledge that he had worked so hard to win, produced in Adrian an extraordinary euphoria. He seemed to have returned to those wonderful days of his youth, when his powers of body and mind were increasing so rapidly that on each birthday he could look back and marvel how far he had advanced since the preceding one. How gratifying to feel oneself growing, expanding, unfolding, becoming in every way more than one was! But youth's joy in its growing powers is often clouded by the doubt that these powers will become adequate to meet the demands of an exacting world. To come to terms with a world that it did not choose and cannot alter is often a baffling, terrifying, or even humiliating, task which casts a dark shadow over the palmiest days of youth.

These doubts and misgivings did not trouble Adrian as he felt his strength increasing under the influence of his reversing hormone. He had already demonstrated his capacity to rise to the top in a difficult field. Although there was much in contemporary society, no less than in the larger realm of nature, against which he revolted, he had reconciled himself to what he could not change and learned to live with his world. Accordingly, he

experienced some of youth's joys without youth's doubts and dilemmas. He decided that it was far more satisfying to approach life's prime from the farther than the nearer side. He was reminded of the dictum of a Frenchman that, had human life been properly arranged, we would enter the world as elderly men and women and grow younger with the passing years, to fade away in infancy.

It would have been exciting to have continued his treatment until he had became again what he had been at twenty; but if he did so, he would be forced into explanations which, for the present, he was anxious to avoid. Already his imtimates were remarking with uncomfortable frequency that he appeared years younger than he was. Accordingly, when he looked and felt like a man of forty, he decided to discontinue the injections and let senescence come on until he reached the obligatory retirement age, which was only a few years off. Then he intended to go to some part of the world where he was not known, and dwell in obscurity while he renewed his youth by a long course of injections, and waited for the world to become ready for the boon he could give it — if it ever would become ready.

After Adrian had convinced himself that the reversing hormone could be safely used on humans, he started injecting it into his wife, so that she might accompany him in the retreat from senility and avoid too glaring a contrast between her apparent age and his. Since he had no great faith in her ability to guard a secret, he kept the nature of his research as closely hidden from her as from everyone else. He simply invited her to

submit to a series of health-giving injections, containing vitamins, that he had developed and proved to be effective. And because lying was hateful to him, he added a few vitamins to his preparation.

THE BURDEN OF A PREMATURE DISCOVERY

After their week-end visit, George and Lillian returned home, perplexed by Adrian's reluctance to discuss a matter so innocently pleasant as the preservation of youth. Lilian told her husband that Adrian had grown selfish over the years, but George suspected that there were good reasons for his brother's secretiveness.

The departure of his guests left Adrian perplexed and unhappy. He was not the stuff of which spies and diplomats are made. By nature frank and straightforward, he was finding that to keep his great discovery secret demanded the ever-increasing practice of deceit and evasion - a necessity that irked him immeasurably. Then, too, it did not seem quite fair for him to retain his youth while his brother and all his friends were daily growing older, approaching nearer to life's end. He longed intensely to give his life-prolonging injections to his brother and sister, his aged mother, his elder colleagues at the laboratory, to a humanity afflicted by senescence and death. Soon his children would reach the age when they would profit by the treatment.

There were even greater incentives for throwing off the mantle of secrecy and announcing his discovery to the world. He would at once become a famous man. To join the distinguished company of Nobel-Prize winners would be one of his minor recompenses. In all likelihood, he would be revered as one of humanity's great benefactors, on a level with Jenner, Lister, Pasteur, and others who had shown mankind how to combat

disease, pain, and death. His achievement was even greater than theirs, for they had not released men from that most universal and fatal of afflictions, senility, as he was able to do. Might not his discovery raise him in popular esteem even above the great founders of religions? They had pointed the way to a blessed immortality which no one had ever demonstrably attained; his victory over senescence and death would become obvious to the most stubborn sceptic. Why should he continue to preserve an irksome secrecy, when by abandoning it he might in a few years rise to the pinnacle of fame, becoming the most acclaimed, the most revered man in all the world?

But what would be the good of prolonging life indefinitely in a world that would soon becmme a hell of densely packed humanity, if to an excessive birth rate there were added an unprecedented reduction of the death rate? Might not men, suffering from all the restraints, inconveniences, deprivations, and miseries of an overpopulated planet, before long curse rather than bless the one who had shown them how to defeat old age and hold death aloof? The danger that this would occur made it necessary for Adrian to withhold his reversing treatment even from those nearest to him, for he knew that the more people he rejuvenated, the greater would be the danger of the publicity which, for the present, he regarded it imperative to avoid.

Like many another of the wonderful inventions and discoveries of modern times, Adrian's raised a host of baffling problems which might make it an affliction, rather than a boon, to humanity. And with a more exacting sense of social responsibility

than certain other scientists and inventors have displayed, Adrian had resolved to try to keep his discovery secret until he could see the solution of some of the problems that its divulgation would soon create.

One afternoon while he sat in his office, immersed in the perplexities into which his skill as a biochemist had plunged him, there came a knock at his door.

"Come in," he called.

The door opened, and a tall, heavy-set, blond man stepped into the office. Adrian rose to greet him.

"I am Mikhail Zikov, scientific attaché to the Soviet Embassy in Washington, and I have been sent by my government to interview you," said the stranger, holding out his hand.

"Please be seated, Mr. Zikov," said Adrian, offering him a chair.

"You may recall," continued the Russian in nearly flawless English spoken with an unmistakable foreign accent, "you may recall that last year you were visited by Professor Konstantinov of the Russian Academy of Sciences. He had for years read with great interest your scientific publications and was eager to meet you personally. You very kindly showed him some of your current research, and I believe that you had a long conversation together."

"We had a most interesting conversation, I have great admiration for Professor Konstantinov's work."

"As you know, scientists in the Soviet Union are held in the highest esteem, and the government gives almost unlimited support

to their researches."

"I had heard that this was true in certain fields," remarked Adrian.

"The scope of scientific work in Russia is constantly expanding, and first-class researchers can always find support there. Have you ever thought that you would prefer to work under different conditions?"

"I am quite content here."

"We should be most happy to welcome you to the Soviet scientific community," continued the visitor. "As proof of this, I am authorized by my government to offer you a salary fifty per cent greater than you now receive, and I can assure you that the very finest working conditions and equipment will be provided for you."

"That is an enticing offer. Unfortunately, my ignorance of the Russian language would be a great handicap to me in your country. At my age, it would be difficult to adjust to an environment so different from that in which I have lived all my life."

"But you are young!" insisted Zikov. "You have a long and productive scientific life before you."

"It is kind of you to say that," replied Adrian, realizing too late than in referring to his age he had blundered. "Still, I have no desire to change."

"Would you like more time to consider our proposition? Perhaps, if greater inducement is necessary, we can offer you a still larger salary. And I may remind you that in my country

leading scientists receive special privileges, as is not true here."

"No, my decision is final. A higher remuneration is no inducement, as my children are self-supporting and I have all that I need for my wife and myself. I am an American, and here is where I belong. I can only thank you for your kind offer."

After a thoughtful pause, Zikov continued:

"When Professor Konstantinov was here last year, he received the impression that you had done a great deal of important work about which you have published little or nothing."

"H'mm," said Adrian, growing uneasy. "I wonder what made him think that."

"Konstantinov is very perceptive. He is one of our most brilliant experimental biologists. Somehow he got the idea that you had synthesized certain hormones with very powerful effects."

"You must be mistakem. I do not recall that we talked about hormones at all. Our conversation was about enzymes."

"Are we quite alone here? There is no danger of our being overheard?" asked the visitor in a low voice.

"We are alone, and I am aware of no spies in this laboratory."

"We in Russia would like very much to conduct some similar experiments. What would you ask for a liberal sample of your hormone that makes animals grow younger, or for explicit directions for synthesizing it?"

"Money cannot buy what does not exist."

"But everything that does exist has its price," remarked the

Russian, with a knowing smile on his broad face. "Would you accept fifty thousand dollars for a sample of your hormone large enough for analysis and to make a few experiments? It will be paid to you in cash, in U.S. currency, and nobody but you and I need know what has passed between us."

Adrian rose from his chair and walked toward the door.

"I trust that you will pardon me for not continuing our conversation, Mr. Zikov," he said, "but I have work to do this afternoon."

Temporarily thwarted, but not yet admitting defeat, the visitor followed him to the doorway.

"I shall leave you my card, in case you wish to communicate with me, Dr. May. I thank you for your courtesy. Good afternoon."

"Good afternoon."

Closing the door behind the departing figure, Adrian sat at his desk and buried his head in his hands. However did these Russians learn about experiments which, he was confident, he had managed to conceal even from colleagues who for years had been working in the same building with him? They seemed to have eyes, ears, and noses everywhere, to know what was going on in all places. Was there, after all, a spy in his laboratory? And why were they so eager to pry his secret from him? In a flash he saw why, and was appalled by the dangers inherent in a discovery which, at first sight, promised only to fulfill one of man's most cherished aspirations, a happy life indefinitely prolonged.

Now, as in the days of the czars, men lusting for unlimited

power dominated Russia. By using his reversing hormone, those who had intrigued their way to the commanding positions in the Communist Party might retain their power for generations. Always remaining at the prime of life, with mental and physical powers unimpaired, they might each year grow in political experience, acumen, and influence, making themselves more difficult to displace. What an enticing prospect for the power-hungry! Moreover, by giving the treatment to their most able scientists, they could not only prolong their productive years but ensure higher levels of achievement, as the knowledge and skill of these selected men increased with time, thereby giving Russia an immense advantage in the military and technical fields. By withholding the hormone from the mass of the people, they might avoid the stubborn demographic problems which its universal use would entail. Or they might use the treatment to keep a larger proportion of their men at the age when they make the best soldiers and pilots. Undoubtedly, the lords of the Kremlin would try to keep the secret from the rest of the world. If they could do this, the Union of Soviet Socialist Republics might realize its dream of universal domination, under the continuing rule of a few astute politicians or a Stalin-like dictator.

Adrian had hardly recovered from the shock of the Russian's disclosure when, a few days later, his assistant, Gilbert Sorobin, asked to be relieved of his duties at the end of the following month. Gilbert was a capable young scientist who had now been working in May's laboratory for two years. The relation of the older man and his junior coworker had become more than ordinarily

intimate and friendly. Adrian loved the young man scarcely less than his own somewhat older son, who had disappointed his father by going into business rather than science.

"I have been offered an assistant professorship in the newly established Herbert Hoover University," explained Gilbert.

"This is a great surprise, Gilbert. I thought you were quite content here. Have you been offered a larger salary?"

"No, at first I shall be earning less than I now receive."

"Is it, then, because you prefer teaching, or teaching combined with research, to full-time research?"

"No, it is not that. I find research most absorbing, and I have enough projects in mind to keep me busy for a long time."

"I suppose, then, that it is just because you desire a change of scene," suggested Adrian.

"No, it is not that, either."

"May I ask, then, why you have decided to leave us."

The young man hesitated before replying.

"It is difficult to explain. You and Mrs. May have been extraordinarily kind to me. You have treated me almost like a father, and I am grateful. But there is something about this laboratory that distresses me — an atmosphere of secrecy, a lack of mutual confidence, that makes me uncomfortable. It would be understandable if we were working on government-supported projects related to national defense. But this is an independent foundation, dedicated solely to the advancement of knowledge for the common welfare of mankind. I had supposed that scientists, when not on military assignments, were open and frank with each

other, sharing their knowledge freely and letting their colleagues, especially their coworkers in the same laboratory, follow the progress of their investigations. Perhaps I was too young and idealistic. Little by little, I have been disillusioned by the small-minded jealousies and petty bickerings that I have noticed among certain well-known scientists."

The young man hesitated.

"Go on!" Adrian encouraged him.. "What you say is quite true."

"Well, I came here as your assistant, to help in your research. But for some time I have felt that I have been kept working on small problems, while you yourself are engaged in something bigger, the nature of which you do not disclose to the rest of us. Sometimes, coming in at night to attend to certain experiments that require around-the-clock observations, we find you absorbed in preparing some compound, and you brush aside our interest in what you are doing. There are certain experimental animals that you will permit no one but yourself to touch; you seem to become nervous if I so much as look at them. Perhaps I have not inspired confidence in my ability as a biochemist. At any rate, I do not feel that I am helping you as much as I would like to, nor deriving as much, professionally, as I should from close association with a scientist of your reputation and accomplishments. That is the reason why I think that I had better go elsewhere."

After Gilbert ceased speaking, they sat in silence for a long minute, the young man fiddling with his fountain pen, Adrian making curlicues on a pad on his desk. A plan that for some days had been taking shape in his mind suddenly precipitated

into a decision.

"Have you definitely accepted the offer from Hoover University?" Adrian asked.

"Not yet. I have two weeks to give them my decision."

"May I ask that you wait another ten days before sending your reply? You are right; I have not always been as open about my work as doubtless I should have been, and as certainly I would like to be. But the nature of my principal research is such that the premature divulgement of its nature might bring on one of the greatest calamities that could befall this planet. For this reason, long before I knew you, I resolved to carry on this important work with the greatest secrecy; and the best-kept secret is that which only one person knows. I have tried faithfully to keep my discovery private, but a few days ago I had reason to believe that something of its import has, inexplicably, leaked out. In any event, I feel that the time has come to lay the situation before the governors of this institution. I am finding my sole responsibility in this matter a heavier burden than I can well bear. I shall ask Mr. Goodseed to call a special meeting of the Executive Council as soon as possible. I shall also request that, as my coworker, you be permitted to attend. Then, I think, everything will become clear to you, and you will appreciate my motives for pursuing a clandestine course. Can I count upon your presence at the meeting?"

"Certainly!" exclaimed Gilbert, bursting with curiosity, and feeling immensely relieved.

THE SECRET CONFERENCE

In the panelled conference room of the Goodseed Memorial Foundation, around a long mahogany table polished until it shone like the surface of a dark forest pool, sat nine of the people who directed the operations of this immensely wealthy institution, and decided how its fifteen-million-dollar annual income would be spent "for the welfare of all men everywhere."

At the head of the table was Robert V. Goodseed, a tall man of distinguished aspect who had set aside a substantial portion of the vast fortune inherited from his father to establish this philanthropic foundation as a memorial to his deceased parents, whose life-size portraits in oil hung on the walls. He now acted as chairman of the Board of Trustees, and ex officio presided over the deliberations of the Executive Council. On his right sat Adrian May, who would be the principal speaker this afternoon. Those ranged along the sides of the table included James L. Herter, Ph. D., Director of Biological Research; Buchanan Maltbie, Ph. D., Director of Agricultural Research and Extension; Florence Parelli, Ph. D., Director of Child Welfare; Brian O'Shaughnessy, S. J., Ph. D., Chief Anthropologist; Benedict Stein, M. D., Ph. D., Director of the Medical Department; Ralph Carlson, Ph. D., Sociologist; and Wardlaw Q. Skelton, M. A., Public Relations Officer. Other members of the Executive Council were at the moment out of the country, directing the far-flung operations of this truly ecumenical organization. At the foot of the table sat Gilbert Sorobin, hardly more than half the age of the next-youngest person present, feeling self-conscious and

lonely in this august assemblage, but alert to catch every word that was said.

After the latest comer had hurried to his seat, Mr. Goodseed arose and deliberately closed the door.

"Gentlemen," he began in an even, cultured voice, "you have been called today to consider a subject of the greatest importance, not only to this Foundation but to humanity as a whole, to the welfare of which this Foundation is dedicated. I myself still hardly know what it is about, but I am assured by those whose judgment I trust that it is a matter that should be treated with the utmost secrecy, at least until we decide that it can safely be made public. For this reason, we deliberate this afternoon behind closed doors. Better to ensure secrecy, no secretary is present, and no minutes of the meeting will be taken. All of those here have proved by long and devoted service their loyalty to this Foundation and to the best interests of humanity, which it serves; we rely upon their good judgment and discretion."

Then, noticing Gilbert sitting at the opposite end of the table, he added:

"In addition to the members of the Council, we have with us today a young scientist who has been closely associated with the conductor of the important experiments about to be disclosed to you, whom he feels should be admitted to our deliberations."

The young man blushed and looked down at the table as the eyes of all present turned toward him.

Turning to Adrian, Mr. Goodseed concluded:

"Dr. May, will you please explain the purpose of this meeting."

"When I joined the scientific staff of this Foundation," began Adrian, "it was understood that I would continue research in the field of my doctoral dissertation, the reversibility of vital processes. Among my early work was the demonstration that some of the processes involved in the metamorphosis of tadpoles into frogs could be repeatedly reversed. By injecting appropriate hormones, I caused the tadpole's tail, external gills, and other organs to shrink and enlarge many times over. This work was published and attracted considerable attention in biological circles.

"As I continued to explore the range of biological processes that could be reversed, a challenging question kept recurring to my mind. Might it not be possible to reverse the totality of the processes which lead to senility and, finally, death, thereby prolonging life indefinitely? After many trials, I succeeded in synthesizing a hormone that not only halted senescence in such experimental animals as rats and guinea pigs, but actually made them become younger, in appearance and by any physiological test that I might apply to them. Some that had passed the age of reproduction became capable of breeding again. When I stopped the periodical injections of the rejuvenating hormone, the animals aged once more, at about the normal rate. Renewing the treatment, I could again cause them to grow younger, physiologically; and as far as my experiments go, there is no limit to the number of times that senescence in these animals can be reversed, thereby keeping them alive indefinitely."

The people around the table sat in rapt attention, their eyes

fastened upon the speaker. When he paused momentarily, no sound but the ticking of the clock on the wall could be heard.

"From rodents," continued Adrian, "I passed to larger animals, demonstrating that I could not only arrest, but even reverse, senescence in a dog and a horse. I shall be glad to show these animals to any of you who care to see them at my home. For the present, I shall limit my demonstration to a single experimental animal — myself.

"When I had proved the possibility of total reversal in rodents, carnivores, and ungulates, the next step seemed to be to try the method on primates. In order to work as discreetly as possible, I decided to make the test on myself. A dozen years ago, when in my early fifties, I began treating myself with a slightly modified form of the hormone that had proved to be effective on my horse. Results were slow to appear, for at the optimum dosage reversal proceeds at about the same rate as senescence, so that a year of ageing is cancelled by a year of treatment; a stronger dose may lead to unpleasant complications. After a few years, however, I was convinced that I had ceased to age. After a few more years, I was certain that I was growing younger, in all essential features. My gray hairs were disappearing; the lines in my face were softening; my eyesight improved; my blood pressure fell; I could work longer without tiring and recovered more rapidly from fatigue. In short, I looked, and felt, a younger man. It is my firm belief that if I had continued my treatment long enough, I might stand before you looking no older than my young friend yonder. But for reasons which you may already have divined, two years ago I stopped giving the injections to myself; and since

then I seem to be ageing about as I originally did during my forties. I was born sixty-four years ago. I have been working for this Foundation for nearly three decades."

When he paused, a murmur of excited comments filled the room.

"It's fantastic!"

"He looks no more than forty."

"If I had not known Adrian as a grown man forty years ago, I could not believe that he is past sixty."

"I had suspected for a long while that he was up to some such trick."

"The most marvelous scientific development of our time!"

"The greatest discovery of all times!"

"It's potentialities for good, and for evil, are staggering."

After the first flurry of excitement had died away, Adrian continued:

"It seems hardly necessary to explain to this gathering why I was so anxious to preserve the utmost secrecy about what I was doing. Some of us biologists, taking Malthus to heart, became concerned about the perils of a too-rapidly expanding population long before the contemporary population explosion became a matter of widespread discussion and alarm. You can imagine what would soon happen to this poor, over-exploited planet of ours, if births continued at the present excessive rate while our life-span were prolonged beyond anything hitherto believed to be possible. And this prolongation would not be the extension of senile decrepitude, that specious blessing that we owe to modern medicine, but of the most active and productive

years of human life.

"Consider, too, the adjustments that would need to be made in family relations, in the retirement age, in pension laws, and in a hundred other spheres. It has seemed to me that we should have some answers to the problems that my discovery may create, before making the method widely available. But I was certain that, if some intimation of what I was accomplishing were to be spread abroad, the problem of total reversal would be tackled in many biological and pharmaceutical laboratories, with the probability that somebody else, perhaps a whole team of able investigators, would duplicate my results, probably even improve upon them. And I was not at all certain that other discoverers of the method would be restrained from publication by fear of the havoc they might cause in the world. Think how much money a pharmaceutical corporation might make by putting a rejuvenating hormone on the open market!

"Despite all my precautions, some wind of what I have been doing seems to have leaked out. A fortnight ago, an agent of the Soviet government offered me employment in Russia, at a greatly increased salary. When I declined to go, he offered me fifty thousand dollars in cash for a sample of the hormone, or directions for preparing it. This convinced me that it was high time to let my colleagues into my secret, so that we may all deliberate together as to the best course to take. Should I destroy my preparations and formulas; should I publish the latter; or should we take some intermediate course? But before turning over this meeting to discussion, I wish to apologize for having concealed my most important researches from my colleagues, contrary to the

practice of this Foundation and to the conditions under which I was employed. I trust that you will forgive me."

"No apology is necessary," said Mr. Goodseed. "No ironclad rules can be made for the guidance of those who strike out into the unknown. All that we expect of the members of our scientific staff is their industry, their scientific integrity, and their constant dedication to the welfare of humanity as a whole. I know that some scientists and inventors believe that their job is simply to discover, and to make their discoveries available to the public. They pass on the responsibility for making good or bad use of them to others — to the moralists, the politicians, the industrialists, the leaders of society — anybody but themselves. I am happy that you, Dr. May, have a more profound sense of the social responsibility of scientists. I congratulate you, in the name of this Foundation, on the remarkable, the almost incredible, discovery that you have made. It is a monument to your skill and dedication."

"Well done, Adrian!" someone shouted, in his enthusiasm forgetting the solemnity of the occasion. From all around the table, congratulations and expressions of amazement poured upon him.

After order was restored, Mr. Skelton, the Public Relations Officer, was the first to speak:

"In support of the view that scientists and inventors should not withhold their findings, it is pointed out that few major discoveries come all at once, out of the blue. Often a number of people have worked simultaneously, perhaps unknown to each other,

on a development for which the ground has been prepared; so that if A did not announce his discovery this year, B would come up with something quite similar a few years later. Therefore, why should not A get the credit, and perhaps also the financial rewards, for what he has striven so hard to achieve, regardless of the use that will be made of his discovery, or the other man's? Dr. May's course was influenced by the fear that if so much as a hint of the possibility of reversing the ageing process got around to other laboratories, it would lead to widespread experimentation, with the probability that one or more others would achieve results similar to his own. I should think that this very apprehension would have suggested the course that he should pursue. Since, with so much biological research going on everywhere today, it is likely that what can be discovered will be discovered somewhere else before long, little is to be gained by trying to keep Dr. May's results secret. Why should not he, and our Foundation, have the glory of being the first to discover how to defeat old age, and possibly also death?"

"There is much truth in what you say, Mr. Skelton," admitted Dr. Herter, "but the timing is also important. Some of us are now beginning to believe that this Foundation, and others with similar programs, approached the problem of raising the quality of human life, especially in the less developed countries of the tropics, from the wrong end. With the best of intentions, we went ahead improving sanitation and nutrition, combatting diseases, reducing infant mortality, and, in general, doing all that we could to prolong the lives of the people. Now we are belatedly,

and not very successfully, doing what we can to stem the rising tide of a too-fecund humanity, for which our own benefactions are in large measure responsible. We might have been more foresighted. If our wisdom had been equal to our benevolence, we would have assured ourselves that we could cope with the inevitable consequences of a pronounced decrease in mortality, before we undertook to effect this decrease.

"We always get into trouble when we upset ecological balances. If we will be guided by past experience, we will not make Dr. May's discovery public until we have a constructive program for the innumerable adjustments in human life that it will call for. Although I agree that in all probability someone else will duplicate Dr. May's discovery if he keeps it secret, many years might elapse before this occurs, and meanwhile the world may become better prepared for its reception. In this fast-moving modern era, we are fighting for time. The all-important question is whether we can control certain dangerous trends before they overwhelm us."

"Father O'Shaughnessy," said Mr. Goodseed, turning to a tall, florid man who wore a clerical collar, as he was a Jesuit priest as well as a doctor of philosophy and an anthropologist of international fame, "Father O'Shaughnessy, although it is too early to be certain, we fear that our family planning program in Latin America will be adversely affected by the Pope's recent encyclical prohibiting the faithful to resort to chemical or mechanical means to limit the size of their families. In your opinion, would the official attitude of the Catholic Church be altered by the knowledge that human life could be greatly prolonged?"

"That is a difficult question. The Church, as you know, promises blissful immortal life to those who have faith and obey its commandments. Even on the most generous assumption, successive reversals of the process of growing old, no matter how often repeated, would not amount to immortality, for it is the consensus of astronomers that all life on this planet will some day be extinguished by cosmic events. Nor is it likely that human life on this earth, however prolonged, will ever be free from all the pains and sorrows that afflict it, as, according to the doctrine, our existence in heaven will be. If the Church proceeds logically from its premises, it has no reason to advocate the prolongation of human life beyond the traditional span of three score and ten years. To be perfectly consistent, it should regard the extension of a human life by chemical means as as wicked, as contrary to God's will for mankind, as its prevention by chemical means. You may recall that, in its early centuries, thousands of Christians, now revered as saints and martyrs, were so eager to exchange this life for a better one that they persisted in seeking martyrdom, despite the efforts of humane and tolerant Roman administrators, whose duty was to preserve public order, to dissuade them from conduct disloyal to the Emperor that was punishable by death. But then we cannot be sure that the Curia in Vatican City will always proceed with strict logic."

"But what about children?" asked Dr. Parelli, a motherly woman with graying hair. "If life is indefinitely prolonged, children cannot continue to be born without creating, sooner or later, an intolerable congestion. Would people care to live

in a childless world? Would we not lose something precious without children to cherish and guide, to amuse us by their frolics and artless prattle? Have you given any thought to this aspect of the matter, Dr. May?"

"Well, I suppose that there will always be room for some children, for my treatment is no guarantee against death from natural catastrophes, accidents of all sorts, and disease — even if, as has not yet been proved, it can prolong the whole span of human life, as it does in the case of laboratory animals, rather than just the better years of one's life, as I have shown in my own case. Perhaps, after all, I shall die before I reach a hundred. That remains to be seen."

"Don't you believe," asked Dr. Maltbie, the agricultural expert who looked like a retired successful farmer, "that the knowledge that they might live indefinitely would make people far more careful not to take risks, as by driving recklessly, and not to indulge in practices injurious to health, such as smoking, than they now are? After all, to cut short a life that might endure for centuries or millenia is a far greater loss than to deprive oneself of a few decades of existence. And with very much more time to accomplish what we wish to do, there will be less occasion for speed, which is the cause of so many accidents."

"I don't believe it would make much difference," declared Father O'Shaughnessy. "The reckless would still be reckless, the self-indulgent still self-indulgent. Many of those who appear sincerely to believe that righteous conduct will be rewarded by everlasting bliss, and wickedness be punished by eternal torment,

are not by this belief deterred from doing wrong. Many people appear to be constitutionally incapable of regulating their conduct by consideration of its more remote consequences. Therefore, I believe that the accident rate will remain about what it now is, or even increase, if technology provides us with machines more lethal than automobiles and airplanes. And I doubt that the knowledge that men might live much longer would make them stop massacring each other in war. If Dr. May's discovery leads to great overcrowding and competition for living space, wars may become even more frequent and destructive than they now are. Accordingly, if mankind is not to dwindle and finally become extinct, there will always be need for children to replace those who die, although doubtless far fewer than are now produced."

"Can you tell us what direct effect your treatment might have on human reproduction, Dr. May?" asked Dr. Herter.

"I have little information. In guinea pigs, the treatment is capable of prolonging indefinitely the reproductive age of both sexes. If applied to a female during pregnancy, however, the hormone passes through the placenta into the embryo and causes, as might be expected, its regression, until, apparently, it returns to the primitive unicellular stage. Doubtless the effect on humans would be the same. Thus the treatment might be used either to increase the reproductive rate by prolonging fertility, or to decrease it, as a less drastic and dangerous substitute for abortion. However, except for this explicit purpose, there is no reason why women of child-bearing age should take it. After they grow older, they have plenty of time to

combat senescence."

"I strongly approve of any safe method that prevents the birth of unwanted children," declared Dr. Parelli. "Children should be born because they are wanted and will be cherished. On all sides, we hear of the worth and sacredness of human life, yet we condone its accidental origin, like that of a weed that springs up unwanted in our gardens. The unwanted child seems to have been insulted and vilified before ever it sees the light. Perhaps some day, when our sentiments have become more refined and we achieve greater control over ourselves, we shall regard the accidental, irresponsible initiation of a human life as an offence against humanity hardly less abominable than murder."

"Well said!" and "I thoroughly agree!" and "You're quite right!" came from both sides of the table.

"If we could ensure the selective application of the treatment," said Dr. Herter, "I should be less troubled by its introduction. It would be a great thing for humanity if we could prolong indefinitely the lives of those individuals who are most excellent, morally, intellectually, and physically; but I am appalled by the thought of keeping alive, for God knows how long, all the inferior specimens — the stupid, the depraved, the violent, the congenitally deformed, the melancholy types who find no satisfaction in their own existence. Doubtless death is no inherent necessity of multicellular animals. It appears to have been imposed upon them by natural selection, as an adaptation to increase adaptability. A species of which the individuals survived indefinitely would hardly be able to adapt itself to great, secular changes in its environment, so that, despite the

potential immortality of its members, it would probably become extinct. The higher the reproductive rate and the more rapid the turn-over of the generations, the greater the capacity for evolutionary change — as we witness, for example, above all in insects. If we keep nearly everyone alive, humanity will hardly evolve to higher levels; yet scarcely any thoughtful person is satisfied with it as it is."

"Yet who will select the persons whose lives are to be prolonged, and who will deny this boon to others who clamor for it?" asked Adrian. "Doubtless the men in the Kremlin are eager to procure the hormone because they believe they can restrict its use, to their own advantage; but in a democracy, such a restriction would hardly be possible."

"I would ask to be excused from the onerous duty of separating the sheep from the goats," replied Dr. Herter. "The problem here is hardly different from that which we encounter in any eugenic scheme. From the time of Plato, it has been recognized that humanity could be greatly improved, if the best people were encouraged to have more children and the inferior types were prevented from propagating. But none of us, I suppose, would care to be assigned the heavy responsibility of deciding who should become parents and who should not. Too many people with malformed or poorly functioning bodies have mental or spiritual qualities that seem worth perpetuating, and too often unpromising parents produce admirable children. Aside from the rare extremes of all-around excellence and pitiful inferiority, we feel that the problem of selection should be left to some being wiser than

ourselves."

"I believe that we had better dismiss from consideration the evolutionary aspects of Dr. May's discovery," said Dr. Stein. "With medicine using all the resources of science to keep alive every creature born to woman, and the State making it more difficult for the competent to support and educate their children by taxing them heavily in order to support the incompetent and their offspring, the human stock is hardly improving, and it may well be deteriorating. It would appear to make little difference whether you keep a genetically inferior person alive or you keep his equally inferior progeny alive. It is the total population that we must consider, in relation to the earth's resources."

"This whole discussion seems above all to underscore the tragedy of our human situation," remarked Father O'Shaughnessy. "Man has for ages yearned intensely to prolong his conscious existence, whether in this world or the next. Recall to what fantastic extremes the ancient Egyptians went to ensure that after death they would continue to lead a life hardly different from that which they had known along the banks of the Nile. Now, at last, we are in sight of a method for extending human life indefinitely, and we doubt our ability to solve the tremendous problems that would result from such extension. Only religion has promised the everlasting perpetuation of the human personality in a manner that does not involve us in overwhelming mundane difficulties -- if overcrowding raises problems in heaven, we are blissfully ignorant of them. But the promise of religion must be accepted by faith, as we have no evidence, convincing

to nearly everybody, that a single soul has survived its body's decay. And with the growth of the scientific attitude, faith inevitably wanes, leaving us in despair."

"In my opinion," declared Dr. Maltbie, "the best course would be to abandon this project for defeating death. Agricultural science has accomplished wonders, but it cannot continue indefinitely to increase the productivity of the arable lands of this planet. The larger the scale on which we grow a single kind of crop, the more we encourage the multiplication of the insects and other organisms that attack it, with the result that our intensive modern agriculture relies ever more heavily upon pesticides. These dangerous, persistent chemicals are contaminating all the land and oceans of our planet; even animals in Antarctic waters are accumulating them in their tissues. It is probable that in trying to produce food for more and more people, we shall end by poisoning all the life on the earth; so that we shall finally have to decide whether we wish to succumb to starvation or to poison.

"It was one thing when a population of a million or less, scattered over an ample territory, doubled itself in a few decades. It is quite another thing when a population numbering many millions of people, a large proportion of whom are trying to scratch a living from small plots of submarginal land, doubles itself in twenty years, as is happening in many of the 'developing' countries today. If this is permitted to happen two or three times, as it may well do in the next half-century, we are lost. I would request Dr. May to stop his experiments on reversibility and

destroy all his records and formulas, so that nobody can steal them. Since there are few biochemists as capable as he is, it may be long before anyone else duplicates his results. I know that it is a painful thing for a scientist to destroy his life's work, but I would ask him to make this sacrifice for the salvation of humanity."

A murmur of surprise and disapproval went around the table.

"This is the first definite proposal that we have had," said Mr. Goodseed. "Would you care to put it in the form of a motion, Dr. Maltbie?"

"I move that the Foundation direct Dr. May to cease experimentation on the reversal of ageing and to destroy all records resulting from such experimentation."

"Will anyone second this motion?" asked the chairman.

"If I followed my head, I might second it, but my heart forbids," remarked Dr. Herter, in an undertone.

Since there was no second, the motion could not be voted.

"Dr. May, have you any information on the effect of the reversing hormone on diseases and their aftermath?" asked Dr. Carlson, who in boyhood had been crippled by a severe attack of poliomyelitis and since the opening of the meeting had sat in contemplative silence, apparently unmoved by the excitement around him.

"Little work has been done on that so far," replied Adrian. "I have evidence that it causes the regression of carcinomas and certain other tumors in rats. I should expect that it would be generally effective in combatting degenerative diseases, especial-

ly those which accompany senility, but powerless against infective diseases and their sequels. Still, I may be wrong. More experimentation is needed."

"I see," said Dr. Carlson, laconically.

"Then there is a possibility that the hormone could be used effectively in the treatment of cancer?" asked Mr. Goodseed.

"A very good possibility, I should say; but proof is still lacking."

"This alone seems sufficient reason for making the discovery public, so that research on its use as a cure for cancer can begin immediately in many laboratories," said Mr. Skelton. "Think how many thousands of lives might be saved by it!"

"If we divulge the method before we halt the population explosion, the world will soon be afflicted by a disease worse than cancer," growled Dr. Maltbie, irritated by the failure of his motion.

"We might privately undertake some research on the treatment of cancer by the hormone," said Dr. Stein. "Its potentiality as a cure is not an adequate reason for discarding secrecy."

"We have not yet heard from you, Dr. Sorobin," said Mr. Goodseed, addressing the young man at the opposite end of the table."How do you feel about this matter?"

"I think it would be a wonderful thing if we could continue to grow in experience and knowledge without ever becoming old and decrepit. Frankly, I have a horror of growing old. I fully appreciate all the problems that would surround the indefinite prolongation of human life, but I think it would be a pity to

thwart the realization of one of man's fondest hopes, just because we cannot yet face the problems which this realization would create. I believe that we should try long and hard to find solutions, before we give up in despair."

"That's it!" and "Certainly!" and "The young man has said it!," came from the assembled company.

"You seem to have expressed the general sentiment of this gathering, Dr. Sorobin," said the chairman. "The afternoon grows late. So far, the discussion has reminded us of the variety and immensity of the problems that should be solved before Dr. May's discovery is widely applied, but we have had no constructive suggestions. Perhaps Dr. May himself has a plan for future procedure. If so, we would like to hear it."

"There is much that we need to know," he began, "about the effects of the reversing hormone on animals of various kinds, and especially on human beings of various conditions and stages of life, before I would even advocate its widespread use. So far, I have noticed no undesirable side effects, but my experience is quite limited. What I should like to do is to establish a laboratory in some remote spot, say in the less accessible parts of South America, where we could continue research on a larger scale than hitherto, and with little fear that knowledge of what we were doing would leak out prematurely. Meanwhile, I advocate that this Foundation, and all other agencies similarly engaged, intensify their efforts to bring human reproduction under control. Perhaps, by the time we are ready to publicize our findings, the world will be ready to receive them."

"At first sight, your proposal appears sound to me," said Mr. Goodseed, "but I believe that we should all take time to think over the matter at our leisure, before we reach any decision. Accordingly, I propose that we adjourn now, to meet again at the same hour next Wednesday. And I am sure that I can trust everybody here to guard the strictest secrecy about what we have been discussing."

Although the meeting had been officially adjourned, the gathering did not promptly dissolve. People who have suddenly been initiated into the most amazing secret they have ever heard cannot forbear talking about it, where they are free to do so. For a long while they sat or stood around, discussing Adrian's disclosure in groups of two or three, before they left the conference hall with sealed mouths.

GILBERT AND MARCIA

In the gloaming of a midsummer evening, Gilbert Sorobin walked up the path that led from a quiet suburban lane to a white-walled house shaded by ash and maple trees. Although a frequent visitor, he always approached this house with a special feeling, a sort of mixture of eagerness and reticence, with a dash of awe. The chaste elegance of its colonial design reminded him of one who dwelt within. He was certain of a welcome; but would she really be glad to see him?

The front of the house was dark, but he could hear faintly the rattle of dishes coming from the kitchen at the back. A more forward young man would have walked unceremoniously into the home where he had so often been warmly received, but he lightly struck the bronze knocker on the open door and waited. In a moment he heard footsteps, and his heart beat more rapidly as the dim figure of a young woman came down the dusky hallway toward him.

"Oh, Gilbert, I'm so glad you've come!" she exclaimed, seizing both his hands and drawing him into the house. "Why didn't you come right in? We're just finishing the supper dishes. Come, say 'hello' to Mother, then we can sit on the porch and talk. It's a beautiful evening, and I have much to ask you. Why haven't we seen you sooner?"

"I've been busy in the laboratory in the evenings. But I often thought of you, Marcia, while I was working."

In the kitchen, Mrs. Keaton was arranging the supper dishes

on the shelves. She greeted Gilbert warmly. Then Marcia led him through the well-stocked library to the side porch, where they sat together on the settee. In the deepening dusk, fireflies were flashing like evanescent stars, and hidden in the foliage of a maple tree a katy-did called its name. A faint fragrance of roses lingered on the still, warm air.

"Did you pluck up courage to tell Dr. May you were leaving?" asked Marcia, as soon as they were comfortably settled.

"I did."

"And how did he like it? I'll bet he was disappointed."

"He asked me to reconsider my resignation. I'm not sure now that I shall go."

"Well, I hope you won't," Marcia said with emphasis. "Father thought you were unwise to leave an institution like the Goodseed Foundation, with its great prestige and world-wide operations, especially when you have there such a good friend as Dr. May, who would help you to advance as rapidly as possible. Father thinks that you are still too young and inexperienced to appreciate a man like Dr. May, and all the good will that he has shown to you. Someday, he says, you will come to recognize May's true greatness of intellect and spirit, and be sorry that you severed connection with him."

"I have the greatest admiration and respect for Dr. May, and that is the reason why I so eagerly accepted the offer to come and work with him that he made after reading my dissertation. One thing that I particularly like about May is the way he treats his laboratory animals, always with such gentleness and care not

to make them suffer. In our laboratory there is none of that neglect and callousness, not to say cruelty, which in certain other laboratories makes my flesh shiver, so that I can hardly get out of them quickly enough. I was not at all happy about leaving, but then I was not quite happy there, either. Although he was so kind to me personally, I could not avoid the feeling that he lacked confidence in me. I felt myself capable of tackling something bigger than the routine tasks on which he kept me working."

"Why didn't you explain the situation to him, before you decided to go? I feel sure that he would have been sympathetic."

"I suppose I'm a silly, egotistical ass, but I just couldn't bring myself to come right out with so delicate a matter. I thought that if I told him that I was leaving, he would press me for an explanation, and then I could tell him why. And this is exactly what happened."

"You foolish boy! And what did he say then?"

"He said that his research had led him into a most difficult situation, but that he hoped in a short while to clear things up. He asked me to delay acceptance of the offer from Hoover University until he was free to explain."

"And did you promise to wait, Gilbert?"

"What else could I do?"

"I'm glad you haven't accepted the position at Hoover. I doubt whether you would do as well there in the long run. Then We would be much farther apart, if you went there."

"I had thought about that, too...But that difficulty could

easily be remedied, if you agreed," he added, shyly.

"I have no doubt it could be. I suppose that Dr. May's difficult situation had something to do with the special meeting of the Executive Council of the Goodseed Foundation, which you attended."

"How did you learn that I was present?"

"My friend, Anne Moreau, who works in Mr. Goodseed's office, told me. She said that the meeting was so secret that even the secretaries were excluded, and the usual minutes were not taken. Yet you were seen to enter the conference hall along with Dr. May and the other directors, and to remain there after the door was closed. That was a great honor. How did you feel?"

"I felt honored, and also very humble, sitting with all those men, and one woman, of such wide experience and recognized accomplishments. Of course, I did not say anything until Mr. Goodseed asked for my opinion."

"What did you say then?"

"I would love to tell you that, Marcia, and all about the meeting, which was about a matter of the greatest importance. But we were admonished to guard the utmost secrecy about the proceedings. I'm sure I could trust your discretion, Marcia, but if I told you, I would be violating a trust imposed upon me. Doubtless in due time you will know."

"It was wrong of me to pry into what occurred at a secret meeting. I shall ask no more."

"You are a sensible girl, Marcia. If Eve had been so sensible, the world would have been spared a heap of sorrow."

"I wonder whether you would have been asked to attend the meeting if you had long, unkempt hair, and a straggly beard, and wore queer clothes? I saw some young men like that on the street today, swaggering along as though they owned the town. Aren't they disgusting? They look as though they never wash."

"Some of them make me feel itchy when they come near. But I'm sorry for them. There were a number like that in our department at the university. They are in revolt against society, or the world at large, and that is their way of showing their noncomformity. But what a stupid, useless way of demonstrating their disagreement! Many of their grievances are well-founded. I'm more of a rebel than most of them, for I reprobate not only man's injustice to man, as they do, but likewise man's abominable treatment of the rest of the living world, which most of them ignore. But instead of trying to look absurd, and making a lot of empty noise, I believe that we should study, work, and think, and perhaps come up with some better solutions for all the tough problems that beset this tortured world. At least, that is the course that I've been trying to follow. I agree that the older generations have not made a good job of straightening out the world. But let the younger generation do better, before they criticize so harshly. If they're not careful, the tables will be turned upon them, before long, and their children will vilify them for passing on such a messy situation."

"I suppose, then, that you disapprove of student strikes, such as those at Berkeley, Columbia, the Sorbonne, and now in Mexico City."

"To me," replied Gilbert, "a student strike is an anomaly.

Young people are in colleges and universities because they need to learn more from their elders, to absorb the wisdom of the ages, and to know what has been done in the past, if only to avoid the repetition of old blunders. If the students are so much wiser and better informed than their professors and the rulers of their country, they should be teaching and governing, and the present professors and statesmen should be taking lessons from them. When I was a student, I could not afford to take time to march around protesting against this and that. I had too much to learn."

"You are modest and industrious, Gilbert. The world would be better if there were more like you."

Mrs. Keston came through the door and set down a tray bearing cake, a pitcher of lemonade, and glasses.

"I thought you might like some refreshment on a warm evening," she said, and after being thanked, quietly retired.

"Poor Mother, she bears a heavy burden," sighed Marcia, pouring out the lemonade. "For several years now, Grandmother has been almost as helpless as a baby, and Mother must take care of her. I help her as much as I can, but I'm away at work most of the day. It all seems so cruel and senseless to me. Grandmother is in pain much of the time; she cries and wishes she were dead. But then the doctor comes, gives her some pills and injections, and keeps her alive for a few more miserable weeks. Mother is still strong and active; there are lots of things she would rather be doing than nursing a querulous old invalid, her husband's mother. Yet to prolong one hopeless life, another life is spoiled.

And the bills we have to pay for doctors, and medicines, and spells in the hospital!"

"Perhaps some day scientists will find a remedy for such situations."

"No greater discovery could be made. Do you remember the photograph of Grandmother, taken just before her wedding, that I showed you not long ago? What a lovely young woman she was! And look at her now! If such a change were to happen all at once, we would consider it the cruellest blow that could befall anyone, worse than being knocked into a bloody mess in a traffic accident, as I saw happen to a poor fellow the other day. It is only because such a change comes with almost imperceptible slowness that we become reconciled to it, and do not cry out in horror."

"Yes, I remember the picture. I thought that, except for the funny ~~nineteenth-century~~ old fashioned clothes she was wearing, your grandmother looked much like you."

"I hope I don't live to be ninety," said Marcia.

"Perhaps, as you approach that age, you will think differently, Marcia. Anyhow, I can't imagine you as other than young and beautiful."

It was too dark on the porch to notice Marcia's blush.

"I don't know about the beauty," she said, "but I can't imagine myself as bent and decrepit and wrinkled as my poor grandmother. Yet it is surprising how soon we can become what we could never imagine ourselves to be. Do you remember Patricia Zimmer, who lived farther down the lane? Well, she was one of my best friends, a lovely girl, with high ideals.

She used to say that she could not even imagine herself taking narcotics or carrying on with the other sex, the way so many young people do these days. She kept straight until, one evening, her boy friend took her to the home of one of his acquaintances, where a number of boys and girls were experimenting with LSD. When she saw what was happening, she asked her friend to take her somewhere else; but he called her intolerant, a prig, a square, and I don't know what else. How could she condemn what she had not even tried? he asked. Because she loved him and did not wish to fall out with him, she was persuaded to try the horrid stuff -- just once, as an experiment, she told herself. To make a long story short, in less than a year she had become a drug addict, and pregnant, too. Now she lives in a squalid room down town, with two men, neither of whom is her husband. She is a pathetic creature, with a sordid future ahead of her. I tremble when I think how soon she became what she could not imagine herself to be."

"It's the first false step that must be avoided. Once we start sliding down the slippery slope to perdition, we go faster and faster."

"I've known people to go wrong once or twice, and then take hold of themselves and never repeat their foolishness; but I suppose that this is rare. And even if they lead good lives thereafter, their lapse must leave an ugly memory, that they would like to forget, and cannot."

"Now that our life expectancy is increasing, it seems more necessary than ever to avoid, while we are young, doing something

that we might regret for the rest of our lives. Fifty years, or maybe much more, is a long while to remember with shame some foolish thing that we did for a transient pleasure."

"For a young man, you take a long view of things, Gilbert."

"The habit began with my father, who is a bit of a philosopher, and has been strengthened by my association with Dr. May. He is a remarkable man; we have become surprisingly intimate, considering our difference in age, and yet at times he has seemed quite inscrutable. But at last I feel that I am beginning to understand him. He is a great scientist, with a most exacting conscience."

"You resemble him in that."

"Sometimes I'm afraid that you will think me cold, Marcia, because I do not take you in my arms and cover your face with kisses, as passionate lovers are supposed to do. If I don't, it's not because I never feel the inclination. But I know how easy it is to go too far, once one gets started in that sort of thing. It seems to me that the important thing is to understand and respect each other, and I think we are doing that better all the time."

"I agree with you, Gilbert. You do not seem cold to me, but restrained, like a spirited but well-trained horse, obedient to the bridle. The respect that you show to me delights me like a caress."

The waning moon, shining through the crowns of the trees, cast a dappled pattern of light and shade upon the porch floor. In the distance, a whip-poor-will tirelessly repeated his name. A cool breeze rustled the pointed foliage of the maple trees.

Gilbert looked at his watch in a moonbeam, then rose to go.

"Don't you think that our friendship has reached the point where we could allow ourselves one parting kiss?" suggested Marcia.

"I do," he replied, kissing her tenderly, then slipping away through the moonlit garden.

INVITATION TO RENEW YOUTH

At three o'clock on Wednesday afternoon, the same ten people gathered around the shiny mahogany table in the conference room of the Goodseed Memorial Foundation. One sensitive to such things might have detected a subtle difference in the mood of the directors of this august institution. There was a lightness of heart, an eagerness and hopefulness, a tendency to smile and to joke, that had been absent when the preceding meeting began. Yet there were misgivings. Robert Goodseed struck the keynote of the meeting when he said:

"We are here to decide what must be done with the most important discovery that has ever been made in our laboratories, or in any laboratory. When I consider the consequences that Dr. May's discovery might have for my family and friends, for all those present, and indeed the entire staff of our Foundation, I am immensely uplifted. I would like to spare all of you the aches and regrets of senile decay, to give you a longer active and productive life. But I confess that when I think of the multitudinous social adjustments that a great prolongation of life would necessitate, my head whirls; and I am appalled by the thought of what would happen to our planet if death were held at bay or ultimately defeated, while the present excessive birth rate prevails. We must bring all our wisdom to bear upon our deliberations today. I wish we had more of it. I shall be glad to have your thoughts on the matter."

Dr. Parelli was the first to speak.

"I have been troubled," she said, "by one aspect of Dr. May's

discovery. If, in a fully populated world, one generation were to perpetuate itself indefinitely, then, to avoid the horrible consequences of overcrowding, future generations must be denied existence. If, for example, each of us here were to live a thousand years, each would be occupying the places of perhaps a dozen others who might succeed him. Would this be moral? This Foundation is dedicated to the proposition that life is precious; if it is not, our efforts to preserve and prolong it are foolish or wicked. But is it right for one person to claim too large a share of something precious, at the price of depriving others of any share at all?"

"Your sensitive conscience has raised a most difficult question, Florence, and it is one that moralists have neglected," said Dr. O'Shaughnessy. "One reason for the neglect is that man has, since prehistoric times, been living in an expanding world. With the invention and gradual improvement of agriculture, along with the discovery and opening up of new lands, the earth has been able to support more and more people, so that no one believed that his prolonged existence was depriving someone else of a chance to live. Now that the saturation point is in sight — indeed, in countries like India and China has already been passed — we shall be obliged to think increasingly about the moral aspects of occupying a place in the sun at the expense of some other potential occupant."

"Are we not," asked Dr. Herter, "confusing the imaginary claims of a potential person with the real claims of an actually existing person? For me to take too much food, or anything else, when those around me are in need, is clearly wrong. But if I

occupy a place on the earth that somebody yet unborn might occupy, I am not depriving him of anything, for he does not exist to be deprived. I do not leave him suffering from hunger or cold, or unhappy because of unsatisfied desires, because he is not here to suffer or have desires. The potentialities of life are unlimited; the tiniest fly, if permitted to multiply unchecked, would cover the earth solidly in a surprisingly short time. If we worry about the rights, or moral claims, of creatures that might exist and do not, we shall be involved in a hopeless muddle. We have enough to do to straighten out our relations with things that actually exist."

"But are we not taught," protested Dr. Parelli, "to consider the welfare of future generations? Isn't that the basis of patriotism, and a moral family life, and of much else that we value?"

"That," remarked Mr. Skelton, "is because, as things now are, we must inevitably pass on and make way for future generations. The situation would be different if we could perpetuate the present generation, or any subsequent one."

"Much depends," said Father O'Shaughnessy, "on whether we regard this life as final or the preparation for a happier, less evanescent existence. If the latter, it would certainly be wrong, and stupid, for one generation to prolong its earthly existence indefinitely, when it might rise to a higher plane, making way for others to repeat this happy ascension. If, on the other hand, we are convinced that death is total extinction, the problem is more perplexing. I am aware of no religion or

secular philosophy that has considered it. Indeed, since nobody had discovered how to defeat death, there was little reason to consider it."

"In a less radical form," said Dr. Stein, "the present tendency greatly to prolong life by medical science gives us reason to consider the problem. As the world fills up, it will be increasingly evident that the millions of people who live on and on, propped up by medicaments and special treatments, are occupying space, and using the earth's resources, to the exclusion of others who might enjoy life more. For some time, now, I have been asking myself whether this is right."

Adrian May, who had listened to this discussion in interested silence, now spoke up:

"As my experiments progressed, and it became increasingly evident to me that life could be prolonged far longer than we had hitherto suspected, I did not fail to think about the moral aspects of my discovery. Would it be right, I asked myself, for me to continue to enjoy life indefinitely — and I confess that I have enjoyed it — occupying the place of a succession of other people who might also enjoy it? I could find no convincing answer to this question, until it occurred to me that it is not who enjoys, but the total amount of enjoyment, that counts. If we consider the problem from a cosmic, rather than a personal, viewpoint, it becomes evident that the best world is that which contains the greatest surplus of joy, happiness, or what the philosophers call 'value,' irrespective of how this is distributed among individuals, who are but transient parts of an enduring

whole. Notice that I say 'surplus.' From the total of joy and value we must deduct all unhappiness and disvalue to arrive at this surplus. When we treat others cruelly or unjustly, or deprive them of a fair share of the good things of the earth, we increase the sum of unhappiness and pain until, perhaps, it outweighs the joy, making this earth anything but a desirable world to inhabit. But those who do not exist cannot be made unhappy by deprivation or mistreatment; so that by occupying the place of the unborn, we do not augment the sum of misery, although we may prevent the maximization of joy or value.

"Then I asked myself, Which would yield more value, or contribute more to the total happiness of the world, one life continued indefinitely at its prime, or a succession of lives occupying the same time interval? I thought how we begin life as helpless infants, puling in our mother's arms, giving much work and worry to those in charge of us, and still too undeveloped to know that we exist. Next we are little children, enjoying our frolics like the young of all the higher animals, often winsome, no doubt, but too frequently alarming our parents or making ourselves a nuisance to those around us. As adolescents we are often disturbed and rebellious; the problem of adjustment to a bewildering world may become so acute that many a gifted young man or woman has contemplated suicide, and some actually destroy themselves. If we pass through these reefs and shallows and discover our life's work, we may sail along for a few decades on an even keel, not without trials and perplexities, to be sure, but on the whole enjoying our occupations, growing in wisdom, and finding life good.

"These are our best years; but almost before we are aware of what is happening to us, age creeps upon us, with the dismal prospect of declining powers and countless aches, from which there is no hope of relief except by death. And if death is what it seems to be, it cancels everything. With consciousness extinguished and every memory blotted out, it will be, for each of us, just as though he had ~~not~~ never lived. It may comfort us now to believe that we shall live on in our descendants, or that our accomplishments will be remembered; but after we have gone, these things can make not the slightest difference to us. Certainly one life continuing indefinitely at its prime, with a constantly enriched memory preserving all that was most precious in our past years, adds more to the total value of the cosmos than a succession of lives beginning in infantine imbecility, passing through childhood's weakness and youth's perplexity, and with its best years overcast, whenever one pauses to think, by the gaunt specter of senile decay and ultimate dissolution awaiting us at the end. Accordingly, I am convinced that to prolong our best years, even at the price of drastically reducing the number of people who might be born and die in the future, is the moral course, because it will immensely increase the sum of happiness in the world."

"I think, Dr. May," said Florence Parelli mildly, "that you underrate both the joys of childhood and the satisfactions of old age, about which, for example, Cicero wrote so eloquently."

Mr. Goodseed called the meeting to order.

"This discussion is most interesting," he said, "but it

promises to be long and inconclusive. Our present task is to decide what is to be done about Dr. May's discovery. It is another of life's tragedies that the pressure of events so often forces us to choose a course before we have the answers to the ultimate questions by which we should, ideally, be guided. At the conclusion of our last meeting, Dr. May briefly outlined a plan of action. Perhaps he would restate his proposal before we proceed to consider it."

"In brief, my proposal is that research on the reversal of ageing be continued in some remote locality where we can preserve secrecy until such time, if it ever arrives, when our results can be made public without exposing the world to the peril of acute overpopulation. I believe that we should decide upon this principle before we proceed to elaborate details."

"Is there any discussion?" asked Mr. Goodseed. "Dr. Maltbie, I believe that you advocated a very different course?"

"I proposed the abandonment of the research and the destruction of the records, simply because of the disastrous consequences that the great prolongation of life would have for the world under present conditions. Since my proposal was not approved, I am in favor of carrying out Dr. May's plan, as the safest alternative."

"Then there are no objections?" asked Mr. Goodseed.

There was no dissenting voice.

"The next question is where we shall locate the proposed station. Has anyone any suggestions?"

"A young anthropologist on my staff," said Father O'Shaughnessy, "has just returned from South America, where he passed a

year studying a little-known Indian tribe. From his description of the remote valley in the eastern foothills of the Andes where he worked, I believe that it would be a suitable spot for the laboratory. The climate is healthful, when one knows how to live in the tropics; and the aborigines, a sad remnant of a once flourishing tribe, are peaceful enough. Although Dr. Macklin travelled five days over rough forest trails to reach this valley, he tells me that there is plenty of level ground for an airstrip, which would bring the place within less than an hour of an Andean town on a paved highway."

"Flying among those mountains is rather dangerous, I suppose," said Adrian.

"Perhaps no more dangerous than driving over a speedway in this country," answered Dr. O'Shaughnessy. "I did not ask Macklin to come to this meeting, because of the secrecy that must be preserved, but he has excellent photographs of the locality and could supply many details."

"The wilds of South America seem the best place for our station, and I think that we should give serious consideration to Macklin's valley," said Adrian.

"It appears impossible to preserve utter secrecy about a project such as this," said Mr. Skelton. "Appropriations must be made for it and appear in the annual reports. Technicians will be necessary to make the installations, although they need not remain. We must find for the station a name, and an avowed purpose, that are not too revealing."

"I believe that we can truly say," remarked Dr. Stein, "that

this is a station for the study and control of tropical diseases. Since our Foundation already has a number of such stations scattered over the tropics, one more will not attract much attention. After all, senility is the most prevalent and deadly of diseases, and hitherto the least curable. That it is not exclusively tropical is a minor point. We might say that we are placing the station in such an isolated spot in order to study the incidence of arboviruses in the most remote tropical forests. I believe that such a study, and that of certain diseases endemic to the region, could well be carried on there without detriment to Dr. May's work. On the contrary, they would provide a screen for it, while advancing knowledge on other fronts."

This proposal met with general approval.

"Much remains to be done to make this dream a reality," said Mr. Goodseed. "First, we must decide whether the proposed site is satisfactory. Then plans for the buildings and installations must be drawn up, and a budget prepared. But perhaps it is not too early to give some thought to that most important matter, the personnel of the station. Of course, Dr. May will be its director, and it is in accordance with our policy that the director pick his own staff. The selection will be exceptionally difficult in this instance, for ability to preserve silence must be added to the other qualifications of the people chosen.

"Doubtless all the residents at the station will, as they grow older, wish to receive the treatment. This is an important point, as it will provide an opportunity to test its effects on

people of different ages and constitutions. Accordingly, another qualification will be willingness to remain in the relative isolation of the station until we can throw off the mask of secrecy without imperilling the whole world, and nobody can say how long that will be. One who travelled with a face and physique of thirty and a passport showing his age to be eighty would certainly attract the publicity that we are anxious to avoid."

"I have a question to raise," said Dr. Herter. "Will those of us who are already in the secret be permitted to reside at the station and take the treatment, if we so desire?"

"I think it would be cruel for those who have, like Moses, been given a glimpse of the promised land to be denied admission," said Mr. Goodseed with a smile. "But the decision rests with Dr. May."

"All those present are welcome," declared Adrian, "if they agree to preserve the necessary precautions. Not only will they help to increase our knowledge of the way the hormone works, but to have a variety of interests and accomplishments at the station will help to relieve monotony and make life more pleasant there. And certainly those who have dependent families should be permitted to bring them, if they wish. But I think it would be unwise to tell children, and women who are not members of our Council, exactly what the purpose of our station is. They might not be able to contain such exciting information. There will be plenty of time for them to learn after they reach our tropical retreat. But it is only fair to warn you that I cannot promise that the injections will never have harmful side effects. All I can say id that so far, with very limited experience, I have observed

none."

This announcement caused such a stir of excitement and murmur of low voices that for several minutes nobody could be clearly heard. Dr. Stein was the first to speak out clearly.

"I have already made up my mind," he announced. "I accept Dr. May's invitation. For years I have been dissatisfied with trends in modern medicine. Its historical role has been to safeguard and restore health, not to preserve life at however low an ebb. But lately doctors have been using all their skill, and all the resources of the most advanced science and technology, to prolong the miserable existence of people who are already more than half dead, and have no hope of recovery. I believe this to be wrong and cruel, not only to the suffering patients but to their harassed kin. Dr. May's discovery is not only a triumph of biochemistry, but the greatest advance in medicine of all times, a true restorative to health and strength. I should be proud to be associated with his work, even in a small way, and I offer my services as resident physician of the station."

"They are gladly accepted," said Adrian.

The others could not so promptly decide to break completely with their present lives, even with the prospect of perpetual youth. They desired time to think it over, and so the meeting adjourned.

MARCIA'S DILEMMA

The following afternoon, when Adrian and Gilbert were alone among the complicated apparatus and glittering glassware of the laboratory, the former said to his young assistant:

"Yesterday evening I had a long talk with Macklin, the ethnologist who has just returned from South America. It looks as though his valley hidden among the eastern foothills of the Andes is just the place for us. Goodspeed assures me that the Foundation will provide adequate support for our project. As soon as I can settle my affairs here and sell our house, I shall be leaving for the tropics to get things started there. I foresee a most strenuous year or two ahead of us, until the station is built and equipped and staffed, and we can breathe more easily again and get ahead with the important work that takes us there. I need a capable and trusted lieutenant. Will you come with me, help to set up the station, then stay on as assistant director? I realize that I am asking you to make a difficult decision. It is not easy, at any age, to break so completely with our past as we must do. But it should be easier for you than for me, who have had much longer to strike deep roots here. As to your salary, until the appropriation has been made, I cannot tell what it will be, but I'm sure that it will not be less than you now receive. In any event, your expenses at the station will be small, so that you should be able to save a large part of your income."

"Certainly, I shall go with you. The salary doesn't make much

difference. The main thing is to feel that one is doing something worth while. And I can't think of any work more exciting and important than that in which we shall be engaged."

"I can't tell how long it will be before we can return to so-called civilization. Do you think you could stand the long isolation?"

"I believe that I could, especially if...," Gilbert hesitated.

"If what?" Adrian encouraged him.

"If she would go with me. Could I take a wife?"

"I don't see why not. I'm taking mine, and Stein will doubtless take his. But who is 'she'?"

"Marcia Keston. Perhaps you remember her. You had us both to supper not long ago."

"Of course I remember her," said Adrian. "She is not easily forgotten. I think you have made a good choice."

"From what you said at the meeting yesterday, I suppose that I must not tell her just why we are going."

"I depend upon you to guard our secret. Tell her that the Foundation is going to establish a new field station in South America, to carry on important biological and medical research, that you have been chosen as assistant director, and that many years may pass before you or she can return to the States. Will that not be enough?"

"She is strongly attached to her family, and might hesitate to agree to remain away for an indefinite period. If she knew the exact nature of our work, and that by coming with us she

might preserve her youth and beauty indefinitely, she would be more likely to accept."

"I'm not sure that would make much difference," said Adrian thoughtfully. "To young people, age and death seem so remote that they are not taken very seriously. It is not until we grow older, and see senility and death staring us in the face, that we fully realize how grim and ugly they are. To the young, especially those who read lyric poetry, death is romantic, like love. It is often a substitute for love, when love is thwarted. Sappho, the incomparable poetess, burning with unrequited love, threw herself into the sea; whether or not the tale is true, it established a tradition.

"The readiness with which the young pass from thoughts of love to thoughts of death probably springs from their close biological connection. The biological significance of love is reproduction, the begetting of offspring. Animals must reproduce because they will die; or perhaps it is truer to say that they must die because they reproduce and must make room for their progeny. At any rate, for evolution to proceed, one is as necessary as the other. Young people, of course, don't see all this in broad perspective. To them, love and death are alternative routes of escape from the sometimes unbearable pressure of life upon them. Thoughts of death, like thoughts of love, are highly charged with emotion. They are equally romantic, acceptable substitutes for each other.

"To Marcia, who evidently is not suffering from unrequited love, senility and death must seem so far off that the prospect

of postponing them further will hardly influence her decision. If she loves you, she will go with you. And if she does not love you well enough to accompany you to South America without knowing all the details, it might be better not to marry her. Remember, you two are likely to be married for a very long while — unless, indeed, the institution of marriage is greatly changed as a result of our discovery, as many an institution will need to be."

"You can count upon me not to reveal what is to be kept secret. But there is one other question."

"What is it?" asked Adrian.

"Will we be permitted to have children? She loves children, and so do I. It would not be fair to lead her into a marriage that must remain childless, without telling her in advance."

"I see no reason why you should not have children. The day when the birth rate must be adjusted to the indefinite prolongation of life is still in the future, if it ever arrives. First it must be brought into balance with the present death rate. Our station must certainly provide for the education of the children of its staff. And these children will be far removed from many dangers and unwholesome influences that are a source of perpetual anxiety to thoughtful parents in this country. Have you any other questions?"

"None for the present. Everything depends upon whether she consents. Wish me luck," said Gilbert, blushing.

"I wish you the best of luck, Gilbert."

That same evening, sitting on the porch of Marcia's house while fireflies flashed over the garden, Gilbert told her as much as was permissible of the plans for the new tropical field station of the Goodseed Foundation.

"How splendid that you have been chosen as assistant director, while you are still so young!" she exclaimed when he had finished. "But it seems strange to me that they have placed biochemists in charge of a station for medical research."

"What is medicine — as opposed to surgery — but an effort to reestablish the normal biochemistry of the body, when it has gone wrong? If we knew enough of the chemistry of the human organism, medicine would become an exact science rather than an empirical art. Then, instead of discovering by trial and error, at the expense of millions of dollars and thousands of poor laboratory animals, a remedy for a certain disorder, we could write the formula of the chemical that would be effective, and proceed at once to synthesize it in the laboratory."

"I hadn't thought of that. My only regret is that we shall be so far from each other."

"That needn't be. Will you marry me, Marcia, and go to South America with me?" he asked, seizing her right hand with both of his.

She paused a long minute before replying.

"That question would be easier to answer if it were not two in one. Had you asked simply 'Will you marry me?' the answer would have been 'Certainly!' But since there is a condition attached, I must ask a few questions before I can reply.

How long are you likely to stay in South America?"

"Probably for many years. The appointment is not for a definite period."

"How often would we be able to come home on vacation?"

"There will be no trips home. Those who work there must agree to remain continuously, until the Foundation gives them leave to go. The nature of the work is such that it would be most undesirable, not to say dangerous, to have people going back and forth. But no effort will be spared to make life at the station pleasant and intellectually stimulating."

"But why won't you be able to come home every year or two, as people on foreign service generally do? Is it because you will be working on a dangerous and highly communicable disease, that might be spread by travel?"

"The disease on which the station will chiefly work is dangerous but not communicable. I am assured by good authority that no member of the staff will contract it there."

"What is it called?" asked Marcia.

"I can't tell you now," he answered. "I have still much to learn about the work of the station, and what my duties will be."

"Oh, Gilbert!" she said, pleadingly. "Why must you give me this difficult choice? You know that I love you and will marry no one else. But the condition you impose is that I sever every connection with family and friends and homeland, to reside permanently in an isolated corner of South America of which I know nothing, exposed to a dangerous disease, the nature of which you cannot even tell me. I think you are cruel."

"But the work we shall do there is of the greatest importance to humanity. If some of us do not make sacrifices to serve our fellow men, humanity will never advance."

"I wish you could tell me more about it. It's all so vague to me."

"Can't you trust me, Marcia? I assure you that as we go ahead, and our plans take more definite shape, you will recognize the importance of our undertaking. You will not regret having joined it."

"And if we have children, how will we educate them?"

"Provision for their education will be made by the Foundation. Possibly you could serve as teacher, not only for our own children, but for others who will doubtless be growing up there."

"Well, Gilbert dear, you must give me time to think it over. Although I have often thought how nice it would be to be your wife, it never occurred to me that we should have to live as exiles."

"Please don't take too long. I shall not rest until you tell me that you will go to South America as my wife."

After a parting kiss, he walked off into the night, leaving her alone with her dilemma.

A SPINSTER'S HOPES

While Marcia Keston was trying to decide whether to go to the Goodseed Memorial Foundation's new station in South America, others were pondering the same question, without the incentive of immediate marriage to one beloved, but with a clearer understanding of what it was all about. Among these was Dr. Florence Parelli, the distinguished Director of the Foundation's program for child welfare in underdeveloped countries.

Florence was a spinster approaching sixty. As the years piled up upon her, she asked more and more whether she had chosen the best course that had been open to her while she was young. Not that she lacked recognition: her alma mater had given her an honorary degree; she received more requests to write articles for national magazines, more invitations to give lectures and direct conferences, than she was able to accept. As to solid achievements, she could point to child-welfare programs that she had directed in eleven countries in four continents; to scores of clinics that had operated under her broad supervision; to tens of thousands of expectant mothers and parents of young children who had received help and guidance at these stations; to tons upon tons of food and medicaments that had been distributed, gratis, for the benefit of the future citizens of these countries. Out of her experiences had grown a book that was widely acclaimed. If statistics and public recognition could make one happy, Florence Parelli had every reason to be a contented woman.

Yet she was not. In the first place, she had growing doubts

of the soundness of the view that one country or culture could by donations help another to achieve a solid advancement that would eventually become self-sustained. While the recipients of the largess of the more prosperous countries eagerly accepted the money and other material aids that were showered upon them, and nearly always wanted more, they resented being told how these donations were to be used. They desired funds, but no supervision of their disbursement, which hurt their pride. They valued the material benefactions of their more prosperous neighbors more than the experience, the political and economic wisdom, the habits of work, that were the foundation of prosperity.

This was just the opposite of the way in which one culture had helped another in the past. With or without their knowledge and consent, races and cultures have since prehistoric times absorbed the ideas, copied the inventions and institutions, of other races and cultures; such diffusion of achievements has everywhere been a powerful factor in cultural advance. But aside from the great proselyting religions, such as Buddhism and Christianity, members of the more advanced cultures seem rarely to have made much effort to raise the level of life of their retarded, independent neighbors. The incentive to learn from other peoples who were in one way or another more advanced came from the less developed nations themselves, and the progress of the latter depended ~~wholly~~ largely on their own intelligence and hard work, with ~~no~~ gratuitous outside aid.

More importantly, Florence missed intimate personal contacts. Of the thousands of people who were healthier and stronger and,

she hoped, happier and wiser as a result of the benefactions that she had directed for nearly two decades, there were only two or three that she knew personally, in a rather distant way. Of all the rest, she did not even know the names, nor did they know hers. Rarely a grateful parent or young person would address a letter of thanks, painfully traced out in a foreign language, to the Foundation, never to herself.

Often she wondered how many of the children who had benefitted from the Foundation's program had developed in ways that she could approve. May not better health and physical development, with the superior mental development that often accompanies them, have made these people more discontented and bitter in an environment that lacked adequate opportunities for economic and social advancement? How many of the Foundation's beneficiaries were now rabid Communists or even active guerillas and terrorists, in whom all the milk of sympathy and compassion had been drained away to make room for the heady wine of some little-understood and mostly impracticable social dogma?

After each of her visits to an elder sister who had become a home-loving grandmother absorbed in her progeny, Florence came away feeling lonely and a trifle envious. Marie had directed no world-spanning programs, written no books, given no lectures. She had married young to an adored and adoring husband; each of her three children had developed in a way to make any parent proud; there were now four attractive grandchildren; and Marie had become the beloved center of a happily united family. Which of the two had contributed more to the world, the sister who by concentrating her love and intelligence on her own three children

had given it three well-educated, well-balanced, responsible citizens who promised to repeat the process with their own children, or the sister whose widely diffused beneficence had helped many to a degree difficult to assess, but who could point to no single individual as her own peculiar contribution to the on-going stream of humanity?

In her sixth decade, Florence had largely outgrown passion but she craved affection, perhaps even more than when she was younger. She longed for the hand laid caressingly on her shoulder, the kiss upon her cheek, the sympathetic smile. And in her solitary apartment, surrounded by books, ~~and~~ maps and charts, and photographs that she had taken in the many countries where she felt at home, she received none of these little tokens of affection. Increasingly, as she grew older, she remembered with a pang the one devoted suitor she had had, nearly forty years ago. She might well have won him, but too often she had discouraged his attentions to give her time more fully to her own unfolding career. Finally, the young engineer had drifted away from her, to marry another. In later years, after she had made a name and place for herself, she might have contracted a marriage of convenience; but having known true love, she would settle for nothing less.

For a long while, now, Florence had been convinced that her mistakes, if such they were, were irremediable. After her retirement, a few years hence, she would doubtless continue to give lectures and to serve on boards; but as strength and vigor waned, she would recede into an ever more solitary senility, relieved,

perhaps, by a rare, dutiful visit from a niece or nephew, or her sister's grandchildren; yet with none of that loving solicitude that would continue until the end to surround Marie. At the last meeting of the Executive Council of the Foundation, however, a bright ray of hope had penetrated the mist of her regret. Why should she not go to South America with Dr, May and recover her lost youth?

Rummaging through a pile of old photographs, she found one of herself, taken when she graduated from college. Although no outstanding beauty, she had regular, pleasing features, such as might have attracted many a man, if she had not held herself so aloof. If Dr. May's hormone effected an exact reversal of the process of ageing, that was the way she might look, forty years from now. Even at thirty, half her present age, her prospects for matrimony would be good. The very thought of recovering her lost youth, her withered comeliness, made her feel younger. She gazed long and tenderly at the faded photograph, then sighed deeply as she put it away.

But what would be the chances of finding a husband in the wilds of South America? Ah! perhaps Father O'Shaughnessy would go, too. He was one of the men she most admired, for his handsome face and dignified bearing no less than for his vast erudition and broad sympathies. A warm and understanding friendship had grown up between them. How hard it must have been for a man like that, admired by women, to preserve his vow of celibacy while in the prime of life! Once, while they talked intimately together, a guarded expression of regret for the course he had taken had escaped his lips. Perhaps, if he went to the new station and

renewed his youth, he might renounce his monastic vows. Certainly it would be unfair to hold him to them for more than the normal span of a human life, to make the promises of an inexperienced youth binding upon one who had grown old and then become young for the second time. What fine children they might rear together! Like every woman neither not utterly selfish nor hopelessly shallow, Florence longed to hear herself called 'Mother'.

If Brian did not go, or having gone and renewed his youth did not love her, there would doubtless be other eligible bachelors at the station. Or, again, thirty years from now, when, if all went well, she might again become what she had been at thirty, the world might have become ready to receive Dr. May's gift, so that secrecy and isolation would no longer be necessary. All sorts of exciting things could happen in three decades — if, indeed, mankind were not destroyed by nuclear bombs in the interval.

But thirty years is a long whileto wait. Would not the time pass too slowly at the isolated station? It occurred to her that waiting while one grows younger would be very different from waiting while one grows older. In the latter case, each empty day, each wasted hour, is so much time irretrievably subtracted from a finite span of life. But to wait passively while one is being rejuvenated is to mark time while days and weeks and years are added to one's life expectancy. It is like working hard, perhaps at some disagreeable occupation, to save money for some future enjoyment. Although one might be bored by such passive waiting, one need have no regrets, as, in the ordinary course of

human life, the ambitious or industrious person does regret wasted time. If Dr. May was right, for every day she waited while the hormone worked upon her, she would later have another to spend as, and where, she pleased.

But why should anyone with an active, inquiring mind be bored at the station? She would have a front seat at the most amazing, the most unexpected, the most heartening spectacle ever witnessed by men, the reversal of the process of ageing, the defeat of doddering old age, perhaps also of death. This is no more wonderful, certainly, than the development of a mature organism from a minute, featureless germ; but the latter is so commonplace that it has lost its wonder for all but a few sensitive and inquiring minds, whereas the former has all the advantages of absolute novelty.

In humans, who mature slowly, the reversal would be so gradual that no perceptible change could be expected in a day or a month. While waiting for the results to become evident, other occupations would be desirable. There were many books that she had wished to read, many things that she had wanted to study, but could not, for lack of time. Now, at last, she would enjoy leisure to develop her interests. And perhaps she could continue to work in her special field of child welfare among the surrounding Indians, who were reported to be peaceable and friendly. She had long felt sorry for the American Indians, the most mistreated race on earth, lacking even a name of their own. It was, she thought, one of the greatest of human tragedies that their developing cultures, some of which showed great promise, were prematurely

destroyed by European conquistadores, adventurers, and buccaneers who were no better than barbarians, devoid of conscience, and incapable of appreciating anything strange to them. To help the remnants of this much-abused race achieve a better life and adjust themselves to the modern world was a duty of the descendants of the Europeans who had deceived, cheated, massacred, and enslaved their ancestors.

But what of Florence Parelli's moral scruples about prolonging the life of one generation, to the exclusion of succeeding generations? Although she had raised the question at the meeting of the Executive Council, it had not been answered. Doubtless the final stand on this difficult question would grow out of the experience of humanity rather than the cogitations of philosophic moralists. Meanwhile, she desired intensely to live, to experience facets of life that she had missed in her single-minded dedication to her profession. And why should she not remain alive as long as she could, when nearly everyone else was trying to prolong life to its utmost limit?

A PRIEST ACCEPTS

For none of those present at the last meeting of the Executive Council of the Goodseed Memorial Foundation did Adrian May's invitation to reside at the new field station raise a more difficult problem, or set off a more searching examination of the foundations of one's beliefs and values, than for Brian O'Shaughnessy, S. J., Ph. D., Director of the Anthropological Section of the Foundation.

The Church to which Brian had vowed life-long obedience promised to its faithful a blessed immortality, for which this earthly existence is but a difficult and often painful preparation. To try to prolong our present life beyond its normal span would seem disdainful of the better life beyond, as though one were to continue to lodge in a dim, damp cellar when he might move into a splendid apartment in an upper story. It would seem to indicate weakness of faith in the Church's teachings. The martyrs of the early Church, who had no doubt that they would join Christ in heaven, would have rejected with indignation any attempt to prolong their earthly existence. For them, the sooner it ended, the better, even if the ending was by way of the stake or ravenous beasts in the arena.

Although Brian was well versed in dogma, he did not have a dogmatic mentality. To the adolescent zeal for religion that had prompted him to enter the novitiate of the Society of Jesus was added, as he matured, more and more of the scepticism, the refusal to accept unexamined beliefs, without which science and philosophy

would never have superseded the mythology of our ancestors. As his anthropological studies progressed, it became increasingly clear to him that belief in the soul's survival, like belief in gods, was a natural outgrowth of man's attempt to interpret, with a half-formed, undisciplined intellect, the perplexing circumstances in which his awaking mind found itself. Given the course of man's intellectual development, these beliefs were bound to spring up, again and again, however false they might be. The devout might view the savage's fantastic notions of the after-life, like his crude concept of deity, as the first dim and distorted intimations of transcendent truths; but this generous interpretation of primitive beliefs is a product of one's own faith, lacking scientific foundation.

Brian had examined, more deeply than most, the baffling problem of the mind's relation to the body, which must be solved before we can assert, with scientific support, whether or not it might exist without a body. He had even looked into the voluminous evidence for survival gathered in the séances of spiritualistic mediums; but the naive completeness of their "proofs" was to his critical mind more suspect than fragmentary intimations. In the end, he concluded that belief in immortality has no scientific foundation, but must be accepted, if at all, on faith, which is the support of the will, as scepticism is the safeguard of the intellect.

O'Shaughnessy's faith that something of the human personality would survive death's ravages was not based exclusively on the teachings of his Church. A man of his constitutional earnestness

would have cherished this faith, or a hope that resembled faith, even if he had never been indoctrinated by a salvationist religion. It sprang from a persistent feeling that conscious existence, despite all the terrors and absurdities that frequently envelop it, contains something too precious ever to have arisen by chance, too sacred ever to be extinguished without doing violence to the whole of Being. Not only the little egocentric self, fearful of extermination, but the whole course of cosmic evolution, seems to demand the perpetuation of the finest products of conscious existence.

Why should one who had faith that the most essential part of himself would never perish desire to prolong his residence on a troubled earth, in a body that might at any moment be racked by intolerable pain? Could there be any reason for this desire, save the weakness of his faith that something better awaited him? One reason might be a conviction that one had something special to contribute to humanity, which no one else could give. Although Brian viewed his anthropological studies as of some importance, he was not so vain as to believe that they would, like the work of a Copernicus or a Darwin, produce a profound revolution in human thought, or that his services to the Foundation were irreplaceable. His reasons for wishing to prolong his life were more personal.

What, he sometimes asked himself, if while here in the flesh, generously equipped with eyes, ears, and other sensitive organs for revealing the world around us and communicating with our fellows, we gain a unique experience, not available to a disembod-

ied spirit, thereby enriching our soul with treasures that it will preserve throughout the whole of its subsequent existence? May not the soul that lacks this experience, that fails to absorb beauty, amass knowledge, vibrate with love for the transitory things that surround it no less than for the everlasting Good, remain for ever poorer, a spirit unfulfilled?

Certainly if there be a divinely ordained scheme of human life, if our existence here in the flesh and that hereafter are related to each other as the child to the man, what we do and learn and experience here should contribute to the soul's enduring quality, making it perpetually the richer for having made wise use of its earthly opportunities. This world, he believed, is not just a sieve for separating the righteous who will ascend to heaven from the wicked who will agonize in hell, not just a harsh school for the soul's discipline, but a wonderland for its enlargement and enrichment. How else, on the supposition that it was divinely ordained, can we account for all the beauty, the glory, the sublimity that we behold around us? Like his distinguished confrere, Teilhard de Chardin, Father O'Shaughnessy saw the world as a milieu leavened by divinity, not as a fallen, degraded creation. And as in the case of the philosophic paleontologist, some of his views were condemned as heretical by his ecclesiastic superiors.

Brian's restless mind sometimes amused itself with the paradoxes of infinity. If indeed an everlasting blissful existence, an infinitely extended existence, awaits the righteous liberated soul, then to delay for a thousand or a million years one's

entry into this blessed state will make no difference in the length of time he has to enjoy it; for the subtraction of any finite quantity from infinity leaves it infinite still. Why, then, should one hurry to cast off this fleshly garment and rise to heaven? As measured by solar years, our time here is at best so infinitesimal a fraction of our expected existence there, that it hardly seems wrong to prolong the former, at least so long as it remains enjoyable or rewarding. This earthly life, with all its joys and sorrows, all its trials and terrors, is the one sphere in which we are certain that our souls can broaden and mature; some of those, like Dante, whose soaring thought has tried to conceive heaven, depict it as a realm of ineffable bliss, devoid, however, of the supreme joy of growth.

Father O'Shaughnessy, despite his graying hair, felt within his soul the capacity for continued expansion. There were wide realms of knowledge that he had not explored, broad fields of experience that had been closed to him. He had never known a woman's love, nor the joys and anxieties of fatherhood, in the natural rather than the ecclesiastical sense of the word. When he beheld a clean, upright, intelligent young man like Gilbert Sorobin, of just the age to be his son, he regretted that he had none of his own. He had taught and given spiritual direction to many a young person, but he had never guided an unfolding mind in the continuous, intimate way that a loving parent does. Then, too, Brian felt increasingly that, in his long concentration on the history and nature of man, he had given insufficient attention to the wider world of nature of which man is a part, and to

man's relation to this natural world. He would like to remedy this neglect, and at the station in South America, while he renewed his youth with May's hormone, he should have ample opportunity to do so.

There should be good company there, too. Stein, an interesting fellow with a mind as sharp as a razor, had already signified that he would go, and perhaps Florence Parelli would also join the group. An admirable woman, so capable yet so feminine, so understanding and sympathetic! He wondered what she would be like after May's injections had driven away thirty or forty years. Perhaps, after the hormones began to take effect upon him, he would renounce his orders to live a freer, more independent life. He had already been a faithful servant of the Society of Jesus for one lifetime, and that was all that could reasonably be expected of anybody.

When he had settled his own problem, within the broad framework of Christian doctrine but with an independence of interpretation that sometimes got him into trouble with the Holy Office, he believed that he had the answer to the query that Florence had raised at the last meeting of the Executive Council: Whether it would be moral for one generation to perpetuate itself indefinitely, taking the place of future generations that must be denied existence in order to avoid the intolerable overcrowding of our planet? If the eventual quality of a human soul, the character it will retain through an infinitely extended future life, is independent of its experience in the first, earthbound stage of its existence, then it seems wrong to set any limit to the number

of infants, each with an immortal soul, who enter this world. In this case, let the generations succeed each other as rapidly as possible; let the maximum number of babes be born, even if the majority survive only long enough to be baptized, so that their innocent souls may ascend to heaven; let all the planet's continents and islands be packed to capacity with undernourished, undereducated, poorly housed, haggard men, women, and children who, if only they bear their suffering and deprivations with Christian meekness free from sin, will be richly compensated in heaven for all they lack here. Such a course will fill heaven with the maximum number of blissful souls, and transient earthly pains will shrink to insignificance in the light of everlasting heavenly joy.

But if, as Father O'Shaughnessy believed, this earth is the pottery in which souls are shaped, tempered in the fire, given a design, and tested, thereby acquiring individuality and character that will somehow influence all their future existence, however prolonged — if the quality of souls must be taken into account no less than their quantity — then, considering the finite resources of the earth, it seems proper that there be fewer people, longer lived.

Admitting that celestial beatitude awaits us, how long should each of us remain on earth? The answer seems to be: At least as long as we can continue to expand our mind and improve our character, to grow in wisdom and virtue, knowledge and insight, appreciation and sympathy. Perhaps, in the tribal societies, with their narrow horizons, in which men have lived during most of the human era, mental and spiritual growth commonly ceased

after forty or fifty years — indeed, only a fortunate few survived longer than that. Even a civilized Roman with an empire at his command, the philosophic emperor Marcus Aurelius, complained that after forty all was repetition. But in our modern world, in which men are working with unprecedented zeal to uncover all the secrets of nature, striving so hard and so boldly to explain themselves and their universe, three score and ten years is scarcely long enough to satisfy our curiosity, to absorb everything that might help us to understand and to grow. In any case, Brian O'Shaughnessy believed that, if he could halt the decay of his faculties with advancing years, he might long continue to enlarge and enrich his soul, and he gratefully accepted Adrian's invitation to join the new station and renew his youth.

A LOVERS' MISUNDERSTANDING

On the following Saturday afternoon, Gilbert and Marcia went for a walk along the quiet country lanes near her home. She wore a dark blue, pleated skirt and a plain white blouse, with no ornament except a blue ribbon tied in a bow at her throat. Her dark hair, brushed back from her white forehead, was held by a ribbon at her nape. To Gilbert, she was irresistibly charming in this simple attire.

It was now high summer, and the late-blooming flowers, blue asters with golden eyes, yellow goldenrods, and tall purple ironweeds were opening their earliest blossoms by the wayside. In the weedy fields grew black-eyed Susans, whose flower-heads reminded Gilbert of dying suns sending forth their last bright rays. Goldfinches undulated over the meadows, broadcasting silvery notes suggestive of innocence and contentment. As the lovers passed through a coppice of oaks and hickories, they were arrested by a rustling among the dry leaves on the ground. Marcia was the first to espy a towhee with bright red eyes, scattering the leaves by kicking backward with both feet together, in a manner difficult to understand. The bird continued this vigorous activity, evidently finding something edible beneath the litter, until he became aware that he was being watched, when he flew into a neighboring tangle of thorny blackberries and called to his mate with a sharp <u>chewink</u>.

"Such energy on a hot day!" remarked Marcia. "Let's find a cool spot where we can rest."

They continued onward until they came to a brook that flowed beneath a wooden bridge. Turning left from the lane, they followed the stream upward into a deep, wooded dell, through which the shrunken summer current babbled over a stony bed. In the most secluded part of the ravine, where a miniature waterfall poured into a little rockbound pool, the still air was scented with a delicate, spicy aroma, which they traced to the broad, deep green ribbons of a liverwort growing over the moist banks. Nearby, on the rich soil at the foot of a ferny cliff, jewelweed grew luxuriantly, brightening the dell with its clear yellow flowers, dangling singly, like oddly shaped fairy bells, with maroon dots in their throats. Gilbert could never resist touching the little green pods, to make them explode and scatter the tiny, jewel-like seeds.

Marcia breathed a deep sigh of contentment.

"Look at that ledge overgrown with moss and polypody and walking-ferns," she said. "It seems to be calling us to come and sit there."

They rested for a while in silence, listening to the chirring of insects, the rare note of a bird, and the rustling of small creatures moving unseen beneath fallen leaves. Gilbert examined a moss with the hand lens that he carried on such excursions, while Marcia craned her neck to glimpse a vireo who sang haltingly amid the verdure overhead. Presently the sylvan peace was shattered by a merciless barrage of sound from a jet plane rising above them, after taking off from an airport a mile or two away.

"It's so refreshing to get away for a while from the noise

and bustle of our mechanical age," remarked Marcia. "But you can't escape it entirely. It intrudes upon you in the most secluded spots."

This was just the opening that Gilbert was anxiously awaiting.

"If you come to South America with me, it won't trouble you much," he said softly, feeling his way.

"Could we sit beside a woodland stream there feeling as calm and safe as we do here? Wouldn't we always be on the alert for those horrible snakes that abound there, fer-de-lances, bush-masters, and I don't know how many more kinds of deadly serpents? I'll admit that those jet planes hurt my ears, but at least they don't inject poison into your blood."

"Those who know the South American forests, miscalled jungles, say that you can tramp through them for weeks without seeing a poisonous snake, although you should never relax your vigilance. They say that dangerous snakes are more in evidence in the south and west of our own country."

"But how about the dangerous animals, the pumas and jaguars, that lurk in those forests?"

"They recede from the settled areas, and they scarcely ever attack people, even in the wildest parts. You are much more likely to be struck by a car here, than touched by a wild animal there."

"Well, I hope I'm not a coward, and I know that life is surrounded by perils everywhere," said Marcia. "But I would like to have a clearer idea of what life will be like there, before agreeing to remain continuously for years. Who will be there,

besides Dr. May and yourself?"

"Dr. Stein will join us; and I heard just this morning that Dr. Parelli, the Director of Child Welfare, will go, too."

"But will there be nobody else of our own age?" she asked.

"Doubtless there will be, when the staff is completed. But I can't tell you now who will go."

"When I told Mother, in private, that you invited me to go to South America as your wife, she asked many questions, about things you male scientists scarcely ever think of, as though they were beneath your notice."

"What did she ask?"

"What kind of living accomodations will we have?"

"I can't tell you yet. But I do know that the Foundation always provides adequate quarters for its members on foreign service. I'm sure we wnn't live in thatched huts with dirt floors. Probably there will be comfortable bungalows for married couples."

"Will there be electricity, plumbing, and such conveniences?"

"Undoubtedly. We can't carry on our research without electricity and running water. Probably we will cook by electricity, if there is enough water power to generate it in the valley."

"Will there be household help?"

"There are a few Indians in the region. Probably an Indian girl would be available."

"But she would know nothing about the way we do things. I should have to teach her everything. And I can't even speak Spanish."

"Neither would the girl. Those Indians have lived in such isolation that they still preserve their tribal language."

"That's probably still harder for us to learn," said Marcia. "Spanish, I am told, is the easiest foreign language for an English-speaking person. But what do they eat there? Monkeys, iguanas, snails, and such things? I couldn't bring myself to do it."

"Neither could I, Marcia. Eating monkeys smacks too much of cannibalism. I suppose that the station will plant a garden and fruit trees, and try to become self-supporting. Until then, provisions will doubtless be flown in."

"Well, it really doesn't sound too bad," admitted Marcia. "I wouldn't mind trying it for six months, or even a year. It would certainly be an experience worth having. What makes me hesitate is the provision that we must stay indefinitely. Then there is an air of mystery about this project that troubles me."

"Why don't you come and try it?" said Gilbert, hopefully. "After all, the Foundation lacks police powers, and it certainly could not hold anyone who was really determined to leave."

"But I would not like to be so far away from my family. Mother has a heavy burden with Grandmother, and I feel it my duty to help her as much as I can. Now, if we married and you continued to work for the Foundation here, it would be a different story. Even if you accepted the position at Hoover University, it would not be so bad."

"You told me that you love me, Marcia, but now I doubt your sincerity," said Gilbert, desperately playing his last card.

"If you loved me, you would come to South America with me."

"That argument cuts two ways," retorted Marcia. "If you loved me, you would stay in this country, where many good positions are open to you, and not try to drag me into the wilds of South America."

"But this South American project is so big and novel that I don't want to miss it. It may well prove to be the most important thing the Foundation has ever undertaken, and to turn it down would be throwing away the opportunity of a lifetime. Besides, I want to continue to work with Dr. May. I promised him that I would go, and I will not be disloyal to him."

"If the project is so big and important, why are they hiding it away in Amazonian forests?"

"Precisely because it is so big, so different from anything hitherto undertaken, that they want privacy while they develop it. Premature publicity would be prejudicial."

"Always the air of mystery! You profess to love me, and you ask me to follow you to God knows where, yet you don't trust me enough to tell me plainly what it's all about. If that's true love, I'll have none of it, thank you!"

"But Marcia..." he pleaded.

Without waiting to hear what he would say, she rose and hurried down the dell toward the road, as swiftly as the rough ground would permit. He followed more deliberately. And so, separated by a dozen paces, they walked back toward her house in silence, each immersed in his own gloomy or resentful reverie.

What a strange, perverse, unpredictable thing is love! It springs up between two people in response to the most subtle beckonings: charms, perfections, idiosyncrasies often too obscure for a third person to recognize. It is nourished by the most unsubstantial fare: smiles, touches, soft inflections of the voice. It is ever prey to doubts, jealousies, and misgivings. It is driven into retreat by the least formidable of threats: a peevish word, a cold stare, a slow response, a small misunderstanding. It is brought back by tokens equally slight: a warm greeting, a caress, a brief explanation. Not the least of our grounds for complaint is that we are so made that our happiness depends in large measure on something so fickle and uncontrollable as love. We can understand why the Stoics, seeking a firm foundation for felicity, strove valiantly to build it upon the solid rock of a steadfast will established in virtue, rather than upon the quicksands of the affections. Yet they strove in vain. Protest as we may, not gray-eyed Athene but Eros, youngest and least mature of the gods, arbitrary and tyrannical as any child of four, still rules without mercy over that which most concerns us, our happiness.

With a formal 'good-bye', Gilbert left Marcia at her door. Instead of taking the bus, he walked the four miles back to his lodgings. After a cold shower and a light supper, he sat down and tried to read a scientific paper, but his agitated mind could not concentrate on the difficult formulas. He laid the journal down and picked up a novel that he kept by his bedside for nights when he was wakeful; but after reading a few pages, he pushed it

aside. Knowing that he would not yet be able to sleep, he decided to go to a movie, a diversion in which he rarely indulged. Not caring much what the subject was, he bought his ticket and entered without noticing that the film was one of those to which only adults are admitted. It started off entertainingly enough; but as the plot developed, the crude display of naked passion that filled the screen disturbed and disgusted him. In the middle of a reel, he unobtrusively slipped out, walked back to his room, undressed, and went to bed.

Although he was dead tired after a long and disappointing day, his tumultuous thoughts and the heat of a summer night kept sleep afar. At first, with the scenes that he had just witnessed on the screen seething in his mind, he congratulated himself on his alienation from Marcia. If marriage climaxed in something like that, he was well out of it! But after a while, tossing uncovered on his bed, he fell into a softer, less resentful mood. Love between him and Marcia would be more delicate and tender, more beautiful and restrained, than what he had just beheld.

In vain he strove to dismiss her image from his mind and fall asleep. Again and again it rose before his mental eye, calm and lovely, as she usually was, or hurt and resentful, as when she ran away from him in the dell. Perhaps, after all, he had been unfair to her! To give up her job in the library, which she enjoyed, and go to reside for an indefinite period in a strange land, cut off from everything familiar save himself, was much to demand of any woman. And to go with an air of mystery enveloping the whole venture, without being told its true purpose,

made the decision still harder. Dr. May had said that if she loved him, she would go with him, without being admitted to the secret. But is there not a limit to the sacrifices that love should be asked to make? And why should the sacrifice be all on one side? Why should not his love for her lead to a sacrifice, no less than her's for him? There was justice in her remark that if he loved her, he would remain in this country, where good positions, and doubtless a distinguished career, awaited him.

Perhaps the trouble was that his thinking was antiquated, influenced by the romantic literature he had read as a boy. In the old romances, the lady follows her lord, through thick and thin. But in those days a woman was subject to her husband's will, hardly less than his horses and hounds. Modern views on the equality of the sexes had changed all that. Now women also have careers, sometimes more brilliant or lucrative than those of their husbands. Why, then, should one be expected to sacrifice a career for marriage, more than the other?

Everything might be different, if Marcia knew the real purpose of the station. Dr. May believed that, to young people, senility and death seem so remote that the prospect of postponing them would hardly influence her decision. But Marcia was not selfish. Even if she would not go to South America just to chase away age from herself when, twenty of thirty years hence, she felt it menacing her, she might do so to help along a project capable of vastly benefitting humanity. She saw, in her grandmother, how distressing advanced senility can be, not only

to the aged person, but to all those around him. Even if the reversing treatment would not be available to the grandmother, Marcia was large-minded and generous enough to work for the benefit of the countless other men and women who might be spared such suffering in the future. Her warm, generous mind would be carried away by the greatness of Dr. May's project, as soon as she knew it. She would certainly go with him, if he disclosed the secret to her.

He was eager to take a wife with him to South America, and there was no other girl that he loved well enough to ask. He remembered how homesick and lonely he had been when first he left home to study, and even later, when, after years away from the parental roof, he came here to work for the Foundation. After a while, the nostalgia wore off, but the loneliness persisted. If he were going to reside for years in a remote transandean valley, he desired a real home there, and he knew that after his arrival the chances of finding a woman to make it with him would be slight.

The only objection to telling Marcia was that she might permit the secret to leak out. Understandably, Dr. May did not have the same confidence in a young woman's ability to keep a momentous secret as in that of his fellow members of the Executive Council, mature men and women, bound to the Foundation by years of loyal service, habituated to the discretion that responsible positions demand. Marcia was very close to her mother and might confide in her, after a promise of secrecy. Mrs. Keston might in turn tell her closest friend, also exacting a

pledge of secrecy. And so on, until some intimation of the unprecedented project reached the ears of a reporter or writer who, sniffing an exciting story, following up such clues as were available, and freely using his imagination to fill gaps in his information, would publish a sensational story that was read over half the world. And especially if Marcia did not, after all, accompany him to South America, the danger that she would talk too much was considerable.

But Gilbert had faith in his beloved. He was confident that, if she knew the whole truth, her love for him, coupled with her idealism, would make her follow him into the wilderness. He was sure, too, that she could keep a secret, even a very great secret. Yes, he would reveal everything to her. Dr. May need never know!

Having reached this comforting decision, Gilbert at last fell asleep, in the small hours when the night had cooled. He did not awake until the sun was high in the heaven on Sunday morning.

TO LIVE OR TO DIE?

To Dr. James Herter, the Goodseed Memorial Foundation's Director of Biological Research, the question whether he should go to South America with Adrian May and grow younger took a different aspect than it had for Florence Parelli and Brian O'Shaughnessy. About a decade younger than either of them, he did not feel the menace of the years as acutely as they did. In contrast to them, he was the father of three children, of whom the younger two were still in college. Although at times they had caused him much anxiety, on the whole he had been happy with them, and he was proud of them. Accordingly, the prospect of filling a great gap in his life's experience was not for him, as for his two unmarried colleagues, among the incentives for renewing his youth. He had already made as large a contribution to the ongoing stream of humanity as anyone had a right to make in a world fast becoming overcrowded, and he did not intend to increase his family.

Unlike O'Shaughnessy, Herter was not affiliated with any church. He doubted that the spirit could survive the body's disintegration, hence he did not have to weigh the claims of continued life on earth against the call of a more blessed existence. But May's invitation caused him to ponder more deeply the meaning of our present life, and what might be gained by prolonging it far beyond its usual span.

Although an agnostic, Herter was too great a scientist to be flippant or irreverent. As with many another biologist, his

interest in the science of life had begun with the exciting pursuit of the living things around him. As a boy, he could name most of the birds that nested in his neighborhood or passed through on migration. He collected and identified plants, insects, shells, and such fossils as he could find in his home state. His enthusiasms had shifted with the passing years. There was a period when trees were his chief interest. Then he became deeply involved in beetles, and later, when he had a microscope, he was fascinated by the protozoa. By the time he graduated from college, his acquaintance with the living world was wide but superficial.

In the postgraduate school, emphasis was on specialization. Not to have a broad familiarity with the realm of life, but to concentrate attention on one small part or aspect of it, to make a new contribution, however insignificant it might seem, was the way to advance the science and incidentally one's own reputation and professional standing. So the young field naturalist who had been elated by the discovery of anything new to himself, no matter how long ago it may have been known to others, became by degrees the laboratory specialist, intent upon elucidating some small detail of structure or process that everyone else had overlooked, or failed to explain correctly.

In the circles of advanced research, each biological laboratory tends to have its own specialty, its own peculiar mode of approach, its own conviction as to how the ultimate secrets of life will be revealed. In the laboratory where James worked for his doctor's degree, research centered on the contents of the cell. Working

with the highest powers of the microscope, he strained his eyes to discern the smallest details of cellular organization. Later, when the electron microscope came into use, he eagerly adopted the new techniques, which revealed such surprising complexity in the structure of organelles or protoplasmic inclusions so small as to be scarcely visible with optical microscopes. Although the investigations of the staff over which he presided covered many fields, Herter's own research continued to be concentrated on the smallest organized particles.

Our naked eyes reveal to us color, form, and movement. This is all that the microscope reveals, on a smaller scale. The electron microscope discloses forms still more minute, extended in three-dimensional space like those that we discern with our unaided vision. The secret springs of life remain as closely hidden from one as from the other. We come no nearer to understanding life's meaning by studying its structures and mechanisms, no matter how minutely. Quite the contrary, the more we concentrate on describing the smallest details of the structure of living things, on measuring the most subtile biological processes, the farther we are apt to recede from appreciating the astounding variety of life's manifestations, or discovering its significance. The astronomer, who nightly has the whole vast sweep of the heaven spread before his gaze, can hardly outgrow his feeling for the grandeur of the universe; but the biologist who works with material that he can grow in glassware, or is brought to him by others, is in danger of losing sight of the immensity and wonder of life.

As he grew older, James became increasingly dissatisfied with what he was doing. He felt his research too confining. He longed to experience the living world in its breadth and color and excitement no less than in its depth, to recapture that alertness, expectancy, and wonder that he had known as a boy to whom the pursuit of nature was the most thrilling of adventures.

And yet, like Wordsworth, he knew that he could never again look on nature just as he had done "in the hour of thoughtless youth." In life's middle span, he had ever more earnestly sought its meaning. Since man belongs to the natural world, the problem of the significance of human life cannot be dissociated from that of life as a whole. Tendencies still vague and undefined in the lower forms of life have evidently become sharper and more explicit in ourselves, so that the roots of our highest aspirations must be sought in the more primitive strata of existence. James was at last convinced that our only hope of fathoming life's significance lies in communion with living things as wholes, relying upon intuition when sensation and analysis fail us. The analytic approach of science gives us marvellous control over nature but fails dismally to reveal any meaning or purpose there. When we depend upon science alone, we develop ever more efficient means to help us toward ever more confused ends.

Of late, James had come to suspect that his very delight in the natural world, no less than his questing for life's meaning, was in itself a revelation of the secret springs of the world

process. Might not, he would ask himself, the whole stupendous sweep of universal evolution, from the formation of galaxies and stars and planets, of atoms and molecules and crystals, to the genesis of living substance and its slow evolution to higher forms -- might not all this aeonian movement be the outcome of a striving by the whole universe to realize its own potentialities for joyous and meaningful existence? Our joy in our own life, our delighted awareness of the beauty and sublimity that surround us, are then to be regarded as a partial fulfilment of this universal striving, which it is our duty to seek and increase in ourselves, to encourage in those around us, for by heightening joyous awareness we advance the process to which we owe our being. The strife of the natural world, the ugliness and the terror, the pain and the sorrow, which are so inextricably mixed with its beauty and joy, sprang up as unfortunate by-products of its striving for joyous self-realization, because there is no omnipotent, omniscient, benevolent Ruler to steer it infallibly toward its implicit goal.

James Herter desired leisure to perfect and test his developing philosophy amid the marvellously rich flora and fauna of upper Amazonia. Although he had heard some of his friends say that to prolong life beyond seventy or eighty years would be to condemn oneself to an intolerable boredom, for so much would be repetitious and so little new, he did not fear that this would happen to himself. The natural world offers inexhaustible variety and ever-renewed beauty to one who explores it diligently. A dozen lifetimes would not be too much for him, if he could begin each with the alert senses and eager curiosity which had

been his as a lad.

So he would join May in South America, but not immediately. He realized how important it was for his children to have a home to which they could return, a father to whom they could turn for good counsel, during the critical years when they were completing their education and becoming established in their careers. When they had matured, he would resign his directorship and retire to South America, so that May might experiment with him and make the years drop away, His wife could accompany him, if she so desired.

The other members of the Executive Council likewise decided to defer their acceptance of Adrian's invitation, but for other reasons. Dr. Buchanan Maltbie, Director of Agricultural Research and Extension, was currently supervising operations in a dozen countries, which he visited in turn in the course of a year or two. He thought that, so long as he retained his present dynamic zest in his work, life in an isolated valley would be intolerably confining; but after retirement, if everything went well at the station and there was a place for him, he would settle there and cultivate the garden, while he cast off the burden of the years.

Wardlaw Skelton, the Public Relations Officer, felt that he would be sadly out of place at a station that shunned all contact with the public. He could best serve by remaining at his present post and tactfully diverting any display of interest in the station or its activities. He hoped that, before the years bore heavily upon him, May's reversing treatment would become accessible without the necessity of living in the wilderness. His interests were people, music, and art rather than nature, and he thought

that a long soujourn away from civilization would be a heavy price to pay for renewing his youth. But he was resolved to pay it, when the time came, if there were no other way to escape from senility.

Robert Goodseed, handsome, cultured, multimillionaire son of a multimillionaire father, President of the Foundation which he had set up in his parents' memory, was too prominent a figure to retire abruptly to one of his institution's many field stations without attracting the attention which it was their policy to avoid. He, too, would continue to play his gratifying and absorbing role as benefactor of mankind. But he thought that as age crept upon him he would, little by little, transfer his responsibilities to others, and unobtrusively slip away to reside at the new station.

Of those who had been included in Adrian's invitation to join him in South America, the only one who unconditionally rejected it was Ralph Carlson, the sociologist.

As a boy, he had been as much in love with nature as Herter, and he had likewise intended to become a biologist; but a severe attack of infantile paralysis left him so badly crippled that he was forced to abandon this ambition. He could no longer roam the fields and woods in quest of living things; his hands were too maimed for the delicate manipulations of a biological laboratory. But his mind remained as alert as ever, and instead of pitying himself, he manfully determined to overcome his handicaps. So he went into sociology, and before long became a leader in the field. Too sensitive to expose his physical defects to others, he never married; he lived alone. But all could see how painfully he shuffled along, and with what difficulty he turned the pages

of a book.

Secretly he dreaded the time when the usual infirmities of old age would be superimposed upon those that had afflicted him since boyhood. Yet he had no desire to recover his youth or to prolong his life. May's hormone reversed the normal processes of development and maturation, but May doubted whether it could repair the ravages of an infectious disease. If you reverse the direction of a railroad train, it will follow the tracks back to its starting point. But if the tracks have been bent and twisted somewhere behind it, one cannot predict exactly what will happen; probably the train will be wrecked. The tracks of Carlson's life had been warped by disease during his adolescence. It would require thirty-five years of slow reversal to return to this point; no one could foretell what would happen then, but it was likely to be a disaster. Carlson had little hope of recovering the sound body that, ages ago, it seemed, had been his. A less prolonged reversal, stopping short of this critical point, might extend his life without correcting his infirmities. He had no desire to prolong his existence in a shattered body. He had forced it to do what it could to serve his fellows, and more could not reasonably be asked of him. For him, one life was enough.

While Herter, O'Shaughnessy, Florence Parelli, and the others were bouyed up by the prospect of a long and pleasant future, Ralph thought bitterly about the injustices of this world. May's promise of renewed youth served only to magnify the contrast between himself and more fortunate people. Not only had a disease

while in his 'teens cast a dark shadow across all his adult life, but as far as he could foresee, it would spoil any renewal of his life. Science could do much to mitigate nature's harshness to man, but there was little hope that it would ever correct all the wrongs that we suffer from the blind forces of nature, no less than from our fellow men. Only religion dared to make such a consoling promise. But Carlson was too tough-minded to see in his affliction, as shortly after his illness the minister of his parents' church had exhorted him to see, a cross laid upon him by a loving and merciful God to test his faith and strengthen his character, so that in the end he might be worthy of everlasting bliss, which would compensate a thousand times over for his transitory sorrows. Quite the contrary, his own suffering, which made him more sympathetic to the sufferings of everything that lived and breathed, forbade him to believe ~~that there is~~ in a loving and merciful God. In his view, not Providence, but Chance, rules the world, within the framework of natural law that is no respecter of persons and knows neither justice nor mercy.

As Carlson had few illusions about life, he had none about death. He was familiar with the long religious tradition that death is, for the righteous, but the transition to an everlastingly beatific life; with the long philosophical tradition that death, which comes inevitably to the good no less than to the wicked, cannot be an evil. He regarded these doctrines as no better than the talisman, believed to make its wearer invulnerable, carried by the timid soldier to give him courage to face

the bullets. Death, in his view, was indeed no ordinary evil, but the greatest of evils, the Superevil, so powerful that it annihilates all lesser evils, all pains, and fears, and sorrows, and gnawings of conscience, at the same time that it strips us of every joy, and memory, and friendship, and cherished possessionand reduces us to nullity. Although a small fraction of the value in one's own life may be transmitted to others, in the end death would obliterate the whole of humanity and everything cherished by man — except in the improbable event that mankind could colonize ~~some~~ a planet revolving around some younger sun. Devoid of the illusions which soften the prospect of death for the religious and the philosophic, Ralph Carlson faced it unflinchingly, with courage hardened by the long, bitter years.

THE BETROTHAL

When he awoke with his head cleared by a sound and refreshing sleep, Gilbert thought better of last night's decision to reveal the station's purpose to Marcia. It occurred to him that, if he broke the promise of secrecy that he had given to Dr. May, he could hardly blame Marcia for breaking a similar promise that she had made to him, nor the recipient of her confidence for divulging it to another. A broken secret is like spilt water; it flows where it lists; one cannot rationally expect anything different. He had done his best to persuade his beloved to join him in a great enterprise, for the benefit of humanity, and he had failed. He would importune her no more; if she did not relent and accept his offer of matrimony, he would go to South America, and remain there, as a bachelor. He would probably at times feel lonely, but he could stand it.

The days passed with no communication between the lovers. On Thursday afternoon, a violent summer thunder shower broke the heat wave under which the country had sweltered earlier in the week. Marcia's return home from the library where she worked was delayed by the storm. Despite fallen green leaves and bedraggled flowers, the parched garden seemed to have taken a new lease of life. A wholesome earthy smell arose from it. Robins hopped over the soaked lawn, pulling up worms. After days of silence, birds found their voices again; a catbird sang softly in a snowball bush; and in a patch of woodland along the neighboring stream, a wood thrush carolled with feeling in the twilight.

Mrs. Keston, who had noticed her daughter's loss of appetite during the past few days, had prepared some of her favorite dishes to stimulate it. There was succotash made from newly gathered sweet corn and lima beans, a salad of cucumbers and lettuce, and biscuits fresh from the oven, with strawberry jam to spread on them. For dessert there were fresh peaches and cream. The parents, invigorated by the cooler air, ate heartily. Even the ailing grandmother, who had complained petulantly during the days of oppressive heat, recovered some of her lost vivacity and enjoyed her supper. But Marcia, who usually amused them all with accounts of the day's small happenings, ate little and said less.

After the supper dishes had been washed and put away and the grandmother had been helped into bed, Marcia and her parents sat in the library, as the porch, where they usually rested on summer evenings, was still wet from the wind-driven rain. The night air, cooled by the dripping foliage massed around the house, flowed in through the screened windows. Mr. Keston, ensconced in his armchair, was soon absorbed in his book, while Mrs. Keston sat at her desk, writing a letter. Marcia, reclining at the end of the big sofa under a reading lamp, picked up the latest issue of Time; she felt it her duty to keep herself informed about the world's disorders. But after listlessly turning the pages and scanning a column here and there, she laid the magazine on the table, kissed her father on the forehead and her mother on the cheek, and started to leave the room.

"Where are you going, Marcia?" asked her mother.

"To bed," she replied, pausing in the doorway.

"Can I do anything for you? You ate scarcely any supper and are very pale. Aren't you feeling well?"

"Nothing, thank you, Mother. I suppose I'll be all right after a good night's rest."

"Isn't Gilbert coming tonight? We haven't seen him all week," remarked Mr. Keston, looking up from his book.

"I don't suppose we'll see much more of Gilbert. He's busy preparing for his trip to South America," replied Marcia, taking a step back into the room.

"Perhaps that, rather than the heat, is the cause of your — your indisposition, shall we say — these last few days. Your mother and I have been concerned about you," said Mr. Keston.

Marcia took two more steps back into the room and sank into the nearest chair. She had outgrown her schoolgirl reticence about affairs of the heart and could talk freely of them to her parents, whose tact and discretion had long ago won her confidence.

"He asked me to marry and go with him."

"And you refused?"

"Yes. There is a great air of secrecy about this new station the Foundation is establishing in the Amazonian wilderness. He could not tell me plainly what it is all about. Those who go must promise to stay indefinitely, without periodic visits home. I couldn't agree to spend the rest of my life in a place I know nothing about, doing I don't know what."

"That is indeed a great commitment. But I thought you loved Gilbert," said her mother.

"I do. And I thought he loved me, but now I doubt it."

"Why?" asked her father.

"He said that if I loved him I would go with him. I pointed out that the argument worked both ways: if he loved me, he would stay in this country, where I prefer to be."

"And what did he reply to that?" queried Mrs. Keston.

"He had no answer. He simply said that the South American project is so big and important that he could not afford to miss it. You know, Dr. May asked him to serve as assistant director of the new station, which is quite an honor for one so young."

"So you made abandoning this important project the test of his attachment to you. Is that a fair test?" asked Marcia's father.

"Just as he made giving up my job, and my family, and everything I know and love, except himself, the test of my attachment to him. After all, this is the age of the equality of the sexes. Why should one be called upon to make sacrifices, more than the other?"

"I doubt that he intended to put your love to the test. He was simply trying desperately hard to persuade you to go with him," remarked her mother.

"A few years ago, you appeared to be very much in love with David Nichols. We were sure that he would soon be our son-in-law. Why didn't you marry him, after all?" asked Mr. Keston.

"David was a dear boy, steady, industrious, without vices, and most devoted to me. I loved him like a brother, or perhaps I should say like a child; but he lacked something I want in a

husband. He had little ambition; he seemed content to work all his life as a salesman. He had no mind of his own; I could lead him around like an affectionate dog. He said that if we married we could live anywhere I wished, provided he could find work there. A woman wants a man whose strength of character gives her confidence."

"You are very hard to please, my dear," Mr. Keston gently reminded his daughter. "One suitor is too complaisant and yielding, another too firmly determined to advance his own career. And while you wait for the man who exhibits just the mean between complaisance and determination that you demand, you grow no younger. You will be twenty-five next month. Remember Robert Herrick's admonition to young ladies to gather rosebuds while they may."

"Do you think, then, that he was right to expect me to give up everything for him, when he would not give up this South American venture for me? Don't you believe that, if he really loved me, he would?"

Mr. Keston sat in silence for a minute while he carefully weighed his words. At last he said:

"I would not conclude that, because he will not abandon an important project for your sake, he does not love or appreciate you as much as he should. Men who love greatly must frequently be torn between the call of love and the call of duty, ambition, or creative work. The more talented the man, the more likely he is to sacrifice love to other aims. This is in the best tradition of our culture. Countless men have left their brides to fight

for king or country; and in the days when warfare had an aura of glamor and glory, they did not always go reluctantly, as so many young conscripts go to Vietnam today. The scientist, the explorer, the inventor, the writer, the statesman — all who pursue high aims — must frequently demand sacrifices by their wives in order to advance these aims. If such men had given all to love, our civilization would be the poorer. With women it has, at least until recently, been different. To give themselves wholly, without reservations, to husband and children, is the course that has been most admired, and doubtless that which has contributed most to society. Now that so many women have careers, which they often fill quite creditably, the situation is changing. Yet a woman must be very sure of her abilities before she asks a man to drop, or radically change, his work for her. I still believe that, assuming you both love each other truly, it is for you to yield to him rather than he to you."

"Certainly I love Gilbert; but I love my family, too, and if I go to South America with him, I shall not see you again for heaven knows how long. Wouldn't you miss me?"

"We would miss you more than you can imagine, my dear," said her father. "But parents who raise a child expect that some day he or she will marry and leave them, and they must prepare themselves for the parting wrench. For many women, marriage is necessary for happiness; and it is just because we have your welfare so much at heart that we wish to see you well married."

"It would be hard to find a better man than Gilbert Sorobin," added Mrs. Keston. "So intelligent! So courteous and considerate! So handsome, too! He will go far in his profession."

"But I thought that when I marry I should live somewhere not too far away, so that I could help you to take care of Grandmother when she has her bad spells."

"The thought does you credit," said Mrs. Keston. "But we can make out. After all, I'm not her only daughter. Aunt Kate has promised to come and help, if we need her."

"But don't you think that I should know more about the purposes of this new station in South America, before I go there for an indefinite stay? I'm puzzled by the atmosphere of mystery that surrounds it."

"Doubtless the Foundation has good reasons for preserving secrecy. Of late, as you know, they have been increasingly concerned with the controversial matter of population control, which I regard as the most urgent problem facing the world today. I would not be surprised if they wish to experiment with some new approaches to the problem, without exciting premature publicity. But whatever the object may be, I think you can be confident that it is worth while, if men like Dr. May and Gilbert participate in it. You know how strongly they oppose cruel and pointless experimentation."

"You believe, then, that I should marry Gilbert and go to South America with him?"

"It's a question that you must decide for yourself," replied Mr. Keston. "I've merely been trying to answer some of your objections, and to put the situation in a clearer light. In marriage, the chief points that a woman must consider is whether she loves the man, whether he loves her, and whether he can

support a family. So long as Gilbert continues with the Goodseed Foundation, there is no doubt that he will be able to support you, not lavishly, as some corporation manager or millionaire's son might do, but adequately. Fortunately for him, you are not an extravagant girl."

"In the final analysis, it seems to depend upon how much you love Gilbert," said Marcia's mother.

"I must think it over," said Marcia. "Good night."

"Good night."

"Sleep well."

"I hope you feel better in the morning."

Next morning, while Gilbert was at breakfast, the telephone rang.

"Can you come to supper this evening? I have something very important to tell you," said a familiar voice at the other end of the line.

"I'll be there early. Can I guess what you have to tell me, Marcia?"

"You have guessed right. We have many things to arrange. Don't be late. Good-bye for the present, Gilbert dear."

"Good-bye, my love," said he, laying down the telephone with a trembling hand.

"FOR EVER WILT THOU LOVE..."

I

As days grew shorter and summer passed slowly into fall, Adrian May was so exceedingly busy that he sometimes wondered whether a man of his years would be equal to his tasks, if he had not defeated senility by means of his treatment. There was the pleasant duty of attending the wedding of Gilbert and Marcia. There was the exciting but exacting work of planning the new station, involving endless conferences and examinations of blueprints and study of equipment catalogs. There was the tedious and frequently painful task of selling his home and disposing of books, papers, pictures, ornaments, — all the accumulations of the years — deciding what to take to South America, what to leave in storage until he was well established there, and what to sell, give away, or destroy. As he and Phoebe sorted over their household goods together, memories came swarming back, to be talked over and delay the decision of what was to be done with the object that evoked them.

Among the difficult decisions was what to do with the horse Traveller and the dog Spotty. Finally homes were found for them, where, after having been kept young for so many years, they could grow old and end their days in comfort.

Adrian was sentimental and found it difficult to discard things closely associated with his past: a tool he had used as a boy, a picture that had hung on his bedroom wall in childhood, a tattered school book, a well-worn college text, an essay that he had written as a classroom assignment. He had discovered that

such objects fortify memory and impart a sense of continuity to life, helping to bind its successive stages into a coherent, developing whole, all the parts of which are somehow preserved, buried layer within layer, like the skins of an onion. He still kept, hanging over his desk, a framed copy of Rudyard Kipling's poem *If-* which his father had given him in his schooldays. As he placed it among the things he would take with him, he recalled with amusement how one of his teachers had disparaged the poem as a fantastic picture of what a man could be. "Nobody," the instructor had said, "could become as perfect as that; and if he did, we would probably avoid such a goody-goody." But Adrian believed that a man should set his aims high, for he always remains somewhat less than his ideals, and if these are low, the man will be still lower.

Among the verses of this poem that he most liked to recall were the final ones:

If you can fill the unforgiving minute
With sixty seconds' worth of distance run,
Yours is the Earth and everything that's in it,
And - which is more - you'll be a Man, my son!

Adrian had tried very hard to fill the "unforgiving minute" with productive work, especially in the laboratory, and as a result he had discovered how to add days, months, years to his active life - to that of all men, if they ever learned to make proper use of the gift that he reserved for them.

One of Adrian's last acts, before he sailed for South Ameria,

was to pay a farewell visit to his octogenarian mother, who lived with a daughter in a distant city. He was shocked by the ravages that time had wrought in a once-beautiful woman, even in the five years since he had last seen her, and he was certain that he would never see her again. He longed to restore the youth and prolong the life of the one who had given him life, to make her again the comely matron who had comforted his boyhood. But how could he do it? Not for a year or two would the new station have accomodations adequate for her, and he doubted whether one of her age could adjust to an ambient so different from that in which she had passed all her life. The single injection that he might give her now would have no perceptible effect; and to arrange for her to be given a series of them, continuing for years, would certainly be to disclose that which he and his institution were taking immense pains to conceal.

As Adrian gave his mother a parting embrace and pressed a kiss on her withered cheek, he felt not only sad but guilty, leaving her to die when he believed it to be within his power to prolong her life. As he rode home in the train, pondering his moral dilemma, he remembered that his discovery was not his private property, to use as he pleased. It belonged, in the first place, to the Foundation which had paid all his expenses during the long years that it had taken him to develop it; and it was the policy of the Foundation that whatever knowledge accrued from the labors of its staff was to be applied to the welfare of humanity. To have his discovery become public before mankind was ready to deal with the population problems that it

would inevitably create would be, not a blessing to humanity, but a curse — perhaps as cruel a jest as any devil could play on it. His mother was in the same boat with Marcia's grandmother and countless other men and women, born too early to profit by the discovery. It occurred to him that his position had much in common with that of a father who watches a loved son don a uniform and march off to war. The lad, still on the threshold of life, risks death to save his country. Adrian's mother, who had enjoyed a long and full life, would die because, as things now stood, to save her would expose humanity to something more devastating than war, the crowding of the earth beyond the limits of endurance.

The first snow fell before Adrian and his associates were ready to leave for South America. The party consisted of Adrian and Phoebe May, Gilbert and Marcia Sorobin, Dr. Stein, and Ronald Alston, the architect in charge of the Foundation's constructions. Mrs. Stein, Father O'Shaughnessy, Dr. Parelli, and the Herters would follow later, after some buildings had been erected. Adrian did not wish to travel by air. The possibility of an airplane crash is a matter of concern even to those who would die anyway in the course of a few decades. When one has the prospect of a far longer life, if only he can avoid accidents and disease, he becomes correspondingly more reluctant to take risks. And when one has exclusive possession of a secret that may give such indefinitely prolonged life to his fellow men, he is morally bound to take the utmost care of his own. Modern steamships plying regular routes rarely sink, and when

they do, the passengers have a good chance of being rescued; but when airplanes crash, few or none survive. Accordingly, aware of his great responsibility, Adrian had decided to take his party by sea.

In early December, they sailed from New York on SS. Santa Clotilde, bound for the West Coast of South America via the Panama Canal. As from the gray skies and green seas of the north they passed into the ultramarine Gulf Stream beneath an azure heaven, Adrian, rested from the fatigue of last-minute preparations, became jubilantly happy. Never before had he known such exultant joy. He had conquered grandly on two fronts. First, he had overcome, at least for a time, those most relentless enemies, senility and death — and what victory that men have ever won has been everlasting ~~effects~~? Then he had resisted the temptation which at one time had beset him strongly, to win the fame and recognition, with perhaps a Nobel Prize, that might have been his if he had published his secret. Now, at the age when most men retire, he was setting forth on a new venture, as vigorous and alert as he had ever been, entrusted by his Foundation with an undertaking that many a man of half his years would have found overwhelming. And he carried with him, in his mind and carefully guarded notebooks, the greatest gift that any man had ever prepared for humanity, the secret of perpetual youth.

When would he be able to give his fellow men the magnificent boon that he held in trust for them, relieving himself of the

heavy burden of its exclusive possession? When they had solved that most fundamental of all their problems, the regulation of their own numbers. As he saw ever more clearly with the passing years, the whole future of humanity depended on that. Whatever we set out to accomplish, whether to make buttons, or build houses, or write books, or raise children, the whole possibility of bringing our task to a satisfactory conclusion depends upon the number of units we have to deal with. Faced with the necessity to handle an excessive number of anything, the most efficient process, the most diligent application, breaks down, and we either fail to complete the required amount or turn out inferior products. It is no different when nations undertake to feed, house, and educate their people; the whole possibility of accomplishing this creditably depends upon how many there are. In all our undertakings, quantity is the primary consideration; quality depends upon it.

As Adrian paced the broad deck, enjoying the brisk trade wind, he reflected how this problem of numbers had plagued man — as it does other animals — from the beginning. At first, in many regions, the problem was, not to prevent the population from becoming excessive, but to keep it from dying out. With high infant mortality, plagues, famines, and constant petty warfare, many a savage or semi-civilized tribe could barely maintain its numbers. Hence the biblical injunction to increase and multiply — produce as many children as your women can bear, lest your tribe, beset on all sides by enemies, vanish from the face of the earth.

But long before the birth of Christ, the civilized Greeks had confronted the opposite side of the problem, that of keeping their population small enough to be supported by their mountainous peninsula. Despite frequent wars between rival city-states, their numbers increased so rapidly that they spread colonies — swarms from the parent hives — along the shores of the inland seas from the Pontus to Spain. The inhabitants of the rocky Aegean isles were sometimes driven to sell excess children into slavery on the Asiatic mainland, while Hellenic philosophers pondered the problems of population control. In modern times, this has become the foremost of all problems, in part in consequence of better nutrition and living conditions, but chiefly because of advances in medicine and public health — advances to which the Goodseed Foundation, and similar institutions, had contributed greatly.

To Adrian, it was one of the greatest of paradoxes that an animal which claims to be rational should continue to reproduce by means of involuntary functions released by irrational passion. If man had, as was often claimed, been created in the image of God, his reproduction would be motivated by love, properly so-called, and strictly controlled by a rational will; for reason, love, and will comport well together, as in the divine nature, which, the theologians assure us, is devoid of passion. To achieve rational control over his own rate of increase would be, for mankind, a far greater victory than the release of intra-atomic energy or the conquest of outer space. If it achieves such control, thought Adrian, humanity will be ready for my gift. In the absence of such control, no greater afflict-

ion could befall it.

Looking forward in one of his turns around the promenade deck, Adrian noticed Gilbert and Marcia standing in the bow, arms about each other's waists, watching the flying fish rise in front of the advancing ship, glide swiftly above the surface of a sea as deep blue as their own backs, then plunge into the crest of a wave and vanish.

"For ever wilt thou love, and she be fair," Adrian said to himself, quoting Keats's famous Ode. "Charming couple! Would the world be such a bad place if it were populated almost wholly by young people such as they, and those a little more mature, with few bawling infants and restless children, and no decrepit old men and women? And such a place it can be, I firmly believe, by means of my discovery. Florence Parelli's fear that a world with few children would be cold and heartless is, in my opinion, unfounded."

Making his way forward, Adrian joined the young couple in the bow. He had something important to say to them in private, and here they were beyond hearing of the other passengers and the crew.

"Are you enjoying your first sea voyage, Marcia?" he asked, coming up quietly behind them.

"It's heavenly! I'm so glad I came!"

"Do you know why we are going to South America?"

"To establish a new research station for the study and control of tropical diseases. I wanted to know more about it, before agreeing to go, but Gilbert evaded my questions. I feel that I am headed into a great, elusive mystery. If I did not have such confidence in you and Gilbert, I would be afraid."

"The disease that we shall principally study and combat is not merely tropical. It is the most universal of all diseases, and the most difficult to cure. Can you guess what it is?"

She thought a moment, gazing down at the white, foaming waves diverging from water welling up on either side of the ship's advancing prow.

"The common cold?" she queried.

"That's an ailment almost everybody suffers, but most soon recover from it, without medicine. The disease to which I refer is one from which nobody ever recovered, until I began to work on it."

"It must be the disease from which my grandmother suffers, extreme senility, with death just around the corner."

"You are most perceptive, Marcia. That's just what we're going to work on."

"You infer that you have found a cure for it. Is that possible?"

"Look at me! How old would you say I am?"

"If I judged by your looks alone, and not by your accomplishments, I would say that you are hardly more than forty."

"I was born sixty-five years ago last month. But for ten years, by means of a special treatment, which before we land Gilbert will know all about, I grew younger rather than older."

She gazed at him in amazement.

"It's the most wonderful thing I've ever heard!" she said at last.

Briefly he told her about the action of the reversing hormone, and its effects on mice, guinea pigs, and other animals.

"Can you imagine why we are so anxious to preserve the greatest secrecy about our work?" he asked, when he had finished his explanation.

"I suppose that if it were generally known that this could be done, every ageing person would before long be taking the treatment, and with the birth of millions of babies every month, the world would soon become terribly overcrowded."

"Exactly! So you must forgive Gilbert for not being more open with you. He was acting in accordance with the Foundation's policy of revealing this project to no one not closely associated with it. We must preserve the utmost secrecy until the world is ready for our discovery. Now that you have joined us, you have a right to know what it is all about. But you must guard what I have told you as closely as a priest guards what he has heard in the confessional."

"You can trust me. Then perhaps Gilbert and I can remain young always?"

"Unless some unexpected hitches develop, you can always remain as young and beautiful and vivacious as you now are, while continuing to grow in knowledge and wisdom."

"And to think that I almost didn't come, because I didn't know enough about it! But I trusted you and Gilbert, and now I'm so happy that I came. To have faith in good men is as necessary as to have faith in God."

October 2 - November 29, 1968.

About 35,000 words.

PART II

THE THOUSANDTH BIRTHDAY

13pp.

APPRAISAL OF A LONG LIFE

As the first light of dawn seeped through the curtained open window of Adrian May's bedroom, he awoke from a refreshing sleep. Lingering traces of the night-blooming datura's spicy fragrance perfumed the cool morning air. Among the trees and shrubbery clustered around his house, stirring birds voiced their first questioning notes, and thrushes were already pouring forth triumphant anthems of liquid melody.

Adrian lay for a few moments with a pleasant feeling of well-being, before definite thoughts took shape in his mind. He had made it! The eighth of November, A. D. 2903, his thousandth birthday! No other human being, probably no other mammal of land or sea, had ever lived so long. Even if the nine hundred and sixty-nine years attributed to Methuselah had been accurately counted, and were full solar years such as ours, which is unlikely, he had outlived Methuselah, Professor Li Chung Yun, who died in China in 1933 at the reputed age of two hundred and fifty-six years, had, even if the record were trustworthy, survived for only a quarter of Adrian's life-span. Famous centenarians such as Thomas Parr, who claimed to be one hundred and fifty-two years old when he passed away in London in 1635, were as children beside him. Adrian had personally witnessed more of history, more of life, than any other rational being on this planet.

Was it good to have lived so long, to have increased about

twelvefold the span of life that nature, unaided by human ingenuity, had allowed to man?

To survey in retrospect the experience of ten centuries is no small undertaking. But in his effort to appraise his long life, Adrian was aided by a mental tendency that he had noticed even before he had outlived those of his contemporaries who had not taken his treatment. The older he grew, the closer to him his early life appeared to draw. Already as a man in his seventies, his childhood often appeared less remote than when he was a student of twenty. Instead of remaining strung out in temporal succession, the years of his life seemed to fold together, one within the other, as in a closing telescope. There were moments when he felt that his childhood, his boyhood, his eager youth, his strenuous early manhood, still lived in him, layer within layer, like the skins of an onion. He was simultaneously all that he had ever been. Growth seemed to be overlaid rather than displaced by maturity, aspiration by accomplishment.

Adrian was not sure that he could explain this change that had, little by little, come over his time-sense. Perhaps it was because, as he grew older and the external world offered less novelty to his senses and mind, the latter turned increasingly inward to that mysterious depth where all his past experiences were somehow preserved, and revived them more vividly. This foreshortening of the backward view, first noticed so long ago, had been intensified with the passing centuries. His boyhood in a distant land, in a world vastly different from what it had

become, separated from him by so many hurrying years, so many crises in the life of nations, so many personal experiences, appeared intimately near to him, as though it had all happened last year rather than nearly a millenium ago.

Was it good to have lived so long? Was it wise to have prolonged life for more than three hundred and sixty-five thousand days?

He remembered with gratitute his early life, up to the time when, aged sixty-five, he had migrated to a South American wilderness to carry on his research in greater secrecy. Even with the grim finality of death stubbornly looming ahead at an uncertain distance but, until he made his great discovery, never far away, human life was good and well worth living, or at least could become so in favoring circumstances. And he had been exceptionally fortunate: a happy childhood with understanding parents; absorbing years of study at the university; fruitful decades with the Goodseed Foundation, bringing world-wide recognition both to himself and his institution; his happy married life; his children who were a joy and a credit to their parents; his long vacations that had permitted him to see much of the world. He would not have had these years different; he could hardly imagine how they could have been made better, except in minor details.

But where would these years be now, if he had grown old and died more than nine centuries ago? Would they not be utterly forgotten? Would it not be as though he had never existed, except as remote descendants, now removed from him by many generations and bearing but a highly diluted trace of the heredity that he

had transmitted to them, might continue to swell the ongoing stream of life; except as his discoveries, now buried beneath many succeeding ones that they had directly or indirectly inspired, received passing notice in voluminous textbooks? These precious years were kept alive only because he continued to live and treasured them in memory, somewhat as, in the view of certain philosophers, the infinite mind of God guards everlastingly the memory of everything that has ever happened in his universe.

The high tide of his life came after his removal to South America, when he became director of a laboratory established especially to promote his own researches. Then, already past the usual age for retirement, he entered an exhilarating period of intense activity, and with trusted, ingenious colleagues not only perfected earlier discoveries but made important new ones.

But as the years were on and, from a distance, he watched a heavily overpopulated world become increasingly less able to support in decency a steadily swelling mass of deteriorating humanity, convulsed with ever more frequent disorders and more disastrous wars, he entered a period of steadily deepening gloom. While it appeared increasingly improbable that his major discovery could ever be made public without multiplying immeasurably the ills of a tormented world, it became more difficult to guard his secret, for even the sparsely populated wilderness into which he had retired had become a seething mass of restless, dissatisfied people. In these years, his chief solace was the natural world that surrounded his laboratory; but even his delight in wild nature was tinged with melancholy as he watched its spoliation

by hungry men. It was painful, too, to know that relatives, friends, and colleagues, so many worthy people everywhere, were succumbing to old age, when he might easily have prolonged their lives, as he had done for himself and his associates at his laboratory. At times he felt guilty to be alive, when nearly all his contemporaries had died long ago.

In this difficult interval, his harassed mind reverted again and again to an opinion that, long before, he had heard expressed by certain weary, disillusioned acquaintances, that the natural span of human life is quite long enough for anybody. They had no desire to prolong it, and they would firmly reject an opportunity to repeat it from infancy onward. If one lived so much as a century, even with health and senses unimpaired, would not life become stale and flavorless? Would not one become utterly weary of doing the same things over and over, seeing the same sights, thinking the same thoughts, carrying on, day after day, the inevitably repetitious business of living? In the absence of other causes of mortality, would not one eventually succumb to ennui? Once, when the news from the great outside world was more than ordinarily distressing, and only by some swift detective work he had narrowly prevented the leakage of his secret formula for prolonging life, he was on the point of destroying his laboratory with all its contents. But something deep within him, some lingering spark of vital faith and hopefulness, commanded Hold on!

The darkest night is followed by the dawn. War and famine prepared the ground for a plague, which swept over four of the six continents and took billions of lives. When it had passed, the stunned remnant of mankind awoke, as from a horrible night-

mare, with the grim determination never again to permit human reproduction to escape from rational control. Measures that had long been advocated by Adrian and other thoughtful men, but had been deemed too revolutionary by most governments, were at last put into effect over nearly the whole globe. Certain discoveries by Adrian and his co-workers helped greatly to attain this end. His services as a consultant were urgently demanded by a dozen countries simultaneously. At an age of well over a hundred, he was busier than he had ever been before; and to his great gratification, his well-preserved organism stood the strain. When he was convinced that this renewed effort to control population was no passing flurry induced by a bad fright, but a settled determination to keep man in balance with his environment, he and his colleagues in the Goodseed Foundation published his method for the indefinite prolongation of life, a century and a half after he had developed it.

With the divulgation of the secret that he and a few loyal co-workers had long been stubbornly guarding, Adrian felt as does a man who casts from his shoulders a heavy burden that he has carried far. The surge of elation that followed the attainment of this long-sought goal was followed by utter exhaustion; the strain under which he had lived for years was greater than he had realized. But he was not allowed many days of repose. When the first wave of incredulity had passed and the cries of "charlatan" had been silenced by convincing proofs, he received all the publicity that the world's reduced media of communication could give him. He became, almost overnight, the most famous, the

most lauded, of living men. Some compared him to Columbus, others to Newton; pious optimists ventured to hint that he was Christ returned to earth, to inaugurate the long-deferred advent of the New Jerusalem. He hastened to repudiate any imputation of supernatural powers; he had made his discoveries by following the usual procedures of experimental science, which, he declared, could coax nature to do almost anything we ask of her, if only we try long, hard, and intelligently enough, using persuasion rather than coercion - she will cooperate with us only in conformity with rules that she herself imposes, her so-called "laws." Although he shunned publicity, Adrian could hardly avoid a succession of conferences and interviews that seemed endless.

Even the most revolutionary innovation, especially if it enriches life or eases its burdens, soon settles down among the commonplaces of everyday existence, as though it had always been there. Only a few years of the widespread use of Adrian's method were needed to convert lingering scepticism into almost universal conviction, as the world undertook, in a more hopeful mood than it had ever known, to reshape its customs and institutions into conformity with the greatly increased life expectancy. Then at last Adrian, living as inconspicuously as one so famous could, enjoyed leisure to savor the quality of a life prolonged for centuries.

Long ago, when he achieved the first successes with his method for prolonging life, he had been troubled by the suspicion that, as with the passing years new experiences, ever more widely separated, fell upon senses and mind less eagerly receptive,

that he was certain that he would never grow weary of living in it. To revisit the same sublime or pleasant scene after an interval of decades was no less rewarding than his first view of it.

Even such common daily activities as rising in the morning, dressing, eating, answering correspondence, bathing, and retiring at night did not, after many thousands of repetitions, become as tiresome as Adrian once feared they would. Since repetitious activities are indispensable for life's continuance, nature had been careful so to organize animals that they could be repeated indefinitely with no loss of enjoyment. Monotony was avoided by interposing an interval of rest and the recovery of appetite after satiation, rather than by providing a succession of novelties. Nothing could appear more monotonous than a horse's endless hours of cropping grass, yet to an advanced age these animals seem to graze with the same satisfaction that they experienced as colts. In his thousandth year, Adrian, after a day of outdoor activity, enjoyed a well-prepared supper as much as he ever did. The thirst for novelty, which restless human minds have come to demand as essential to zestful living, appears to be not a fundamental attribute of animal nature so much as a taste acquired by experience of the exhilaration it can bring. Nevertheless, new sights and sounds are seldom appreciated unless the mind is prepared for them and, in a manner, strains toward them. The new bird that gives intense delight to the avid bird-watcher may hardly win a passing glance from the uninitiated; the rare plant that excites the botanist may to someone else be just a little more of nature's monotonous verdure.

Nevertheless, novelty, whether in the form of new experiences, new conclusions from remembered facts, or fresh insights, is indispensable to growth. To us who have a principle of growth within us, hardly anything is more deeply satisfying than to feel that we are growing, in bodily strength, knowledge, virtue, or wisdom; so long as this feeling persists, life cannot become stale. Adrian's active mind had never ceased to grow. He had ranged widely over the vast field of human knowledge, at intervals undertaking the study of a new science, or brushing up on one in which he had become proficient long ago, becoming familiar with its latest developments. Solon, the Athenian sage who lived to be eighty, boasted that he grew old learning something new every day. Adrian, in his thousandth year, could truly say that he learned something new, if not daily, at least with gratifying frequency.

Long ago, he had heard it said that with prolonged study the human mind becomes like a vessel full to the brim with water; if more is poured in, some must spill out. Such was not his own experience; his mind seemed to have unlimited storage capacity. It might more aptly be compared to a desk or bureau with a somewhat disorderly accumulation of records. The larger the mass of papers grows, the more one must rummage to find what he wants; but at least the more important of the ~~records~~ documents are still there, the ink somewhat faded with age, perhaps, but still legible. To keep the letters bold, they should be retraced from time to time — memory must be refreshed — but with the old outlines to

guide one, this is not difficult. In any case, it is chiefly things learned by rote, sequences of words or numbers that by mechanical repetition we learn to reproduce, much as by practice we acquire some manual skill, that fade away with prolonged disuse; facts and experiences pregnant with meaning appear to be almost indelibly stamped upon the mind by a single impression.

A satisfying life includes more than taking in. The more richly a mind becomes stored with knowledge and wisdom, the greater its need to share its treasures with others. From a remote epoch, the elders of the tribe or city found compensation for their declining strength and physical activity by guiding the community's activities with their wisdom and passing on its traditions to succeeding generations. As the oldest of the world's inhabitants and one of the wisest, Adrian was frequently consulted on matters the most diverse. Although these interviews often encroached upon time that he wished to devote to other things, it was nevertheless gratifying to him to continue to contribute in this way to the welfare of his fellows. He felt himself doubly blessed, to have the wisdom that comes with age while retaining the vigor, physical and mental, of manhood's prime.

Yes, it was good to have lived so long, he could affirm without reservations. For one with an active, receptive mind, life on a planet as richly endowed as Earth does not grow stale, even after a thousand years. Why should it become insipid, then, after ten thousand, or even a thousand thousand? The weariness and lack of interest that used to be so evident in the very old was due not to lack of novelty but to the original dullness of

living would lose much of its zest. But, as time wore on, he became convinced that loss of novelty was richly compensated by widening associations. Although new experiences came less frequently, they entered an ampler context; his mind seemed to be filled with welcoming hands stretched forth to greet them. The longer he lived, the more significance he found in facts and events. As newness wore off, meaning increased. Now, aided by a host of associations, a relatively trivial experience could stir his mind as much as some striking novelty, standing isolated, did when he was young. And what trains of memories, happy or tinged with melancholy, might be aroused by renewed contact with some scene, person, or natural object that had long been familiar to him!

When he could travel freely again, in a world that was slowly repairing the ravages of overpopulation and the resulting wars, it was pleasant not only to revisit old scenes but to explore new countries that he had long wished to see. On the last journeys that he had made before retiring to his secret laboratory, he had been depressed by the widespread destruction of natural beauty and the spreading urban slums. Now forest was springing up on mountains that should never have been denuded to make lean pastures or unproductive farms. Cities were smaller but much more attractive. He passed happy years, travelling widely, watching the planet recover from the abuses that a too-prolific humanity had inflicted upon it. The world was so vast, with so much of interest, beauty, and grandeur to reward the seeing eye and appreciative mind,

that he was certain that he would never grow weary of living in it. To revisit the same sublime or pleasant scene after an interval of decades was no less rewarding than his first view of it.

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their minds, or to the decay of their faculties, physical and mental, with extreme senility. But Adrian's mind, packed like a well-filled treasure-house with the intellectual and spiritual harvest of an active millenium, was as alert and eager for fresh impressions as it ever was. His senses were keen; he had long since ceased to wear the glasses that, while in his fifties, he had needed for reading, and he could still hear the higher notes of birds. Only last week he had climbed a high mountain with younger companions, and been even more excited than they by the discovery of a new plant on its rocky summit; for he, more than they, could appreciate how unique it was. The blue sky dappled with white clouds was as lovely to him now as in boyhood; he doubted that he had ever, in his long life, seen the same cloud pattern exactly repeated. Centuries of familiarity did not diminish his joy in the people and things he loved.

To the discerning mind, every event is a new event, every experience a fresh experience, different in time, and even somewhat in quality, from the most similar of its predecessors. Although over a trillion days had dawned on this ancient planet, and nearly four hundred thousand on Adrian's own life, this day now dawning was as new and promising as the earliest of them, fresh-coined in the celestial mint, with its own unique opportunities for experience and achievement. The birds in the garden were growing impatient for the food that each morning he placed upon their board. He had work to do there, before his appearance on television. Already he had lain too long in bed, immersed in his reverie.

The sun, floating up above distant wooded mountain crests, sent a stray beam upon his wife's pillowed face. Phoebe stirred, awoke, then jumped up, came to Adrian's bed, threw her arms around him, and kissed him tenderly.

"Happy birthday! How wonderful to have lived a thousand years! I congratulate you on an unprecedented achievement. But if I had not known you for nearly that long, I could hardly believe it's true. You look no older than when I married you, nearly nine hundred and seventy years ago. That also sets a new record for the world; surely no other couple ever stayed together so long. Sometimes I wonder that you do not grow tired of me, after all these centuries."

"How could I grow tired of a woman who remains as beautiful and vivacious as when I fell in love with her, who has always been so understanding and helpful?"

CALLIPOLIS

Adrian and Phoebe lived with Gilbert and Marcia Sorobin and their family in a large house in a garden at the foot of a wooded mountain, about five miles from Callipolis. After working in the garden for an hour, Adrian changed his clothes and with Phoebe, Gilbert, and Marcia set forth for the television studio near the center of the city. As they boarded the electric tramcar that passed at regular intervals a few hundred yards from their door, the few passengers already present arose as a mark of courtesy, then, one by one, came to congratulate Adrian on his attainment of a thousand years. Some also felicitated Phoebe on her long attachment to such a youthful-looking companion.

Unlike the street cars that Adrian had known as a boy, this ran almost silently, without noisy gears and steel wheels pounding over the joints in steel rails. Outside and inside, it was much more attractively finished, with comfortable seats where passengers could read or chat with friends until they reached their destination. At one end of the car was a compartment for market baskets, suitcases, and other baggage. Since the citizens of Callipolis were honest, nobody guarded the articles deposited there; it was only necessary to mark them plainly to avoid mistakes.

At convenient intervals along the way were roofed platforms, each sheltering a number of umbrellas and rubber-tired carts, much like those which, long ago, Phoebe and Marcia used to push around in supermarkets. These things, like the tramcar system

itself, belonged to the city. The umbrellas were for the convenience of passengers who might be caught in one of the sudden tropical showers that fell upon Callipolis. The carts were to carry their shopping or other heavy articles to their houses. Each was equipped with an impermeable cover for protecting the load if rain fell. After reaching home, the traveler dried his umbrella, folded it neatly, and next day, at latest, returned it to the nearest waiting station. The carts were also promptly returned; usually someone going the other way would wheel them back to the station immediately. Carelessly to accumulate these articles in one's home was not regarded as theft but a deplorable lack of consideration for other users.

Long before Adrian's thousandth birthday, the world's deposits of petroleum and coal had been all but exhausted by immoderate exploitation. The remaining accessible deposits of these nonrenewable resources were reserved for uses for which substitutes were not readily available, such as oil for petrochemicals and lubrication and coal for making steel. Cities like Callipolis depended for power almost wholly upon electricity, generated at hydroelectric plants or by condensers of solar heat. A network of tramlines threaded its broad avenues and sent branches far out into the surrounding country. Transportation was free, but those riding for pleasure were expected not to crowd the cars in the busiest hours. This system was so adequate that nearly everybody used it to go from one part of the city to another. The few motorcars seen on its streets were either trucks for hauling heavy loads, automobiles bringing people into the city from distant points, or those

carrying campers into the countryside. These cars were powered by storage batteries or engines that burnt alcohol instead of gasoline. Callipolis was free of traffic jams and parking problems; its air was as clear and pure as you could find it on a remote mountaintop.

The tramcar that bore Adrian and his companions into the city went at moderate speed, and the automobiles that passed hardly went faster. The whole conception of transportation had been changed radically by the "Great Renewal," as the epoch after the Great Plague, profoundly influenced by Adrian's discoveries, was called. Formerly, when life was short and economic pressure strong, speed was the main consideration. Until well into the twenty-first century, highways, railroads, and air became ever more crowded with vehicles that traveled faster and faster, with the result that accidents, especially on the speedways, took an appalling toll of life. But people who can expect to live for centuries, who have no need to rush immoderately to earn a living, will hardly, if sane, jeopardize their lives to save a few minutes, or even a few days if their journey is long. Moreover, the country was nearly everywhere so beautiful, with no blatant billboards nor hideous slums, that it was delightful to pass through it slowly, enjoying the scenery.

Inns at convenient intervals made it pleasant to prolong a journey for several days. Even on the main interurban highways, the speed limit was only thirty miles an hour, and on most streets and roads it was fifteen or twenty miles. Since nobody drove a

car with alcohol in his blood, traffic accidents were almost unknown. With memories of airplane crashes in which four or even five hundred lives had been instantly extinguished, air travel had long since become exceptional, used only for special purposes, such as exploration of the Antarctic wilderness. Although people with leisure to see the whole world traveled more than ever before, they crossed the oceans on ships. Not only in transportation, but in activities of every sort, speed was subordinated to safety.

Where people lived, no less than how they traveled, had been changed by the Great Renewal. Formerly, when human life was short, abundant, and cheap, population pressure, along with economic opportunities, had caused huge cities to grow up on sites subject to periodic violent earthquakes, while farmers crowded together on the slopes of active volcanoes and the fertile but frequently inundated deltas of great rivers. Now people valued their lives too highly to expose them continuously to the threat of being buried under falling walls and roofs or washed away in their houses. Geologists had long since mapped the fault lines where continental plates are slipping past each other and earthquakes are most frequent and violent, and people moved away from them. The once densely populated coast of central and southern California, where toward the end of the twentieth century over a hundred thousand people had died in a single earth shock, was now thinly inhabited. The fertile delta of the Ganges, where over the ages innumerable people had drowned, was farmed by men who worked it seasonally

from homes on safer ground. A more sparsely inhabited world provided enough safe sites for everybody's home, and enough fertile land to feed everybody, without tilling poor soil or regions where nature was often disastrously violent.

War and the Great Plague had left the hugely overgrown cities of the late twentieth century depopulated, ruinous, and foul. At the Great Renewal it was, in many instances, found less costly and more satisfactory to build new cities than to transform old ones that, despite all modern inventions, were still obviously descended from ancient and medieval towns whose inhabitants lived packed tightly within turreted walls that gave doubtful protection from enemies, who might starve them into submission if they continued to repulse direct attacks. Many a famous city of the Industrial Age now lay as waste as Nineveh and Babylon; or parts that contained historic buildings might be preserved as archaeological exhibits, like the restorations at Knossos or Pompeii.

Of the new cities, Callipolis was a fairly typical example. With a population of slightly over a hundred thousand, it was one of the larger metropolitan centers. Only a few were bigger, including New York, which retained its importance as a shipping center in this age when ocean travel had become more widespread than ever before. But even New York and its satellite towns had in aggregate hardly half a million inhabitants. Of its famous skyscrapers, only the Empire State Building had been preserved, as a fantastic example of the conditions in which people worked in the old days. It had been made into a museum of twentieth-

century life, customs, manufactures, and arts, and a repository of such of its literature — by far the greater part — that was of value only as a revelation of the era that produced it. The materials stored in certain rooms was so shocking to thirtieth-century taste that is was examined only by the few students of the social sciences who felt obligated to do so, and often they came away nauseated by what they found.

In the residential districts of Callipolis the houses were large, substantially built, with an air of well-preserved age; some had already been standing for centuries. Although each was somewhat different from the others in design, all were of about the same size and quality and sufficiently alike to make a harmonious assemblage. Each was surrounded by shrubbery, shade and fruit trees, and enough ground for a vegetable patch. These houses provided not only ample living space, and rooms for guarding the books, photographs, paintings, diaries, or whatever treasures their occupants accumulated in their long lives, but likewise work space.

A great many useful articles were made by craftsmen in their homes. The population was now composed almost wholly of healthy, productive adults. Without the tremendous waste of war, without the necessity to support many children and old people no longer able to work, along with all those in hospitals, asylums, and locked up in heavily guarded prisons, people could fill their needs in a leisurely fashion; craftsmen now found great satisfaction making with their own hands, or with the aid of small machines, a large share of the things that in the twentieth

century had been mass-produced in huge, noisy factories.

Neighbors exchanged what they made with loving care, instead of selling them to each other, and this increased the good will among them. One capable of gratitude can hardly avoid being well disposed toward the neighbor who has given him the attractive garment that he wears or the comfortable bed in which he sleeps. To treat carelessly, or to discard prematurely, the article that a friend had taken pains to make for one was regarded in Callipolis as hurtful discourtesy. Moreover, people who lived long deemed it proper to make their belongings last a long while. Not to be continually replacing one's things with a later and shinier model, not to be a slave to consumption as well as to production, as was necessary to keep the absurd economy of the twentieth century from faltering, but to make durable articles serve for years if not for centuries, was the pride of the people of the Great Renewal. Not only did this new economy immeasurably decrease the drain upon natural resources; it permitted people to create things in a manner that gave them no less pleasure than having things, and it allowed abundant leisure.

Even in the heart of Callipolis, where the central post office, the city hall, stores, and offices were situated, the avenues were wide and tree-shaded. The buildings, never more than four stories high, were set back from the streets, with space for grass and flower beds in front. Although the city produced many things in workshops and small factories, it lacked large ones. After the Great Renewal, a distinction was made between residential cities and industrial towns. Heavy industries, such as steel

mills, and factories for manufacturing things that required much machinery, were confined to the latter, which were situated near the sources of raw materials and power. These mills and factories were operated by people who came by turns for a limited period, lived in temporary but comfortable dwellings, then returned to their own homes in residential cities, villages, or the open country. Few people wished to spend all their lives in a factory town.

If a Rip van Winkle who had fallen asleep in the twentieth century had awakened just in time to join Adrian and his companions on this ride, he would have understood and approved of Callipolis, for this was the kind of city, with pure air and green open spaces, which planners of that remote epoch had dreamed of, but could rarely achieve in those troubled times. But after his long sleep, he would have been utterly bewildered by his fellow passengers in the tramcar and the people it passed along the streets. With few exceptions, he could not decide whether they were male or female. He might have imagined that he had entered a car full of schoolchildren, boys and girls of no more than fourteen or fifteen years, tall and robust for their ages, and, although not in uniform, dressed and wearing their hair in a manner that failed to reveal their sexes — possibly to conform to the regulations of the co-educational school to which they were bound. But they carried no schoolbooks and comported themselves with quiet dignity, with none of the rowdiness that a carful of adolescent schoolchildren would have displayed in the

days before he fell asleep. In an effort to learn whether he was surrounded by boys or girls, or a mixture of both, he might have covertly scrutinized the cheerful, open faces of these well-grown adolescents for sprouting down, or looked for swelling breasts beneath their shirts. But he would have remained completely mystified.

If our Rip van Winkle had asked the ages of his fellow passengers, he might have concluded that they were, after all, mischevious schoolchildren who had entered a secret conspiracy to amuse themselves at the expense of this odd-looking stranger from a distant age. One might have answered "Six hundred and thirty-seven years," and another "Two hundred and ninety-three." Few would have claimed less than a century of life. A youth of about eighteen, who looked no younger than most of those around him, and a child of ten, were the only ones whose appearance, to twentieth-century eyes, did not greatly belie their ages.

These centenarians so youthful in aspect were of both sexes. The biological significance of sex is reproduction, and an animal whose average life span is measured in centuries, if not in millenia, cannot reproduce frequently without swelling the population excessively. To meet this problem, Gilbert Sorobin had found a way, by means of a hormone inhibitor, to delay indefinitely the onset of puberty, without adversely affecting bodily and mental growth, and indeed to the benefit of the latter. With certain exceptions that will presently be noticed, the people of the Great Renewal had only such sexual differences as were

present at birth and hidden in their clothes. Remaining otherwise almost indistinguishable as they grew up, receiving the same education and filling with equal competence the same roles in the economic, civic, and cultural life of the community, males and females saw no reason why they should dress or behave differently. Only their names disclosed whether they were boys or girls, men or women; and there was a growing tendency to abandon old-fashioned names indicative of sex, in favor of new ones that failed to reveal it. In a number of languages the world over, the same pronoun was now used to designate males and females. Since both were primarily spiritual beings, whose principal purpose was to know and love the universe and to cooperate with each other to achieve a rewarding life for all, and only secondarily, since death had not been wholly conquered, organisms for reproducing their kind, it seemed improper to be constantly calling attention to this minor role.

From all they could learn, from ancient writings and reminiscences of survivors of the age when tension between males and females was preserved by differences in dress, behavior, and occupations, no less than in reproductive roles, most people of the thirtieth century had no desire to return to this situation. Those very old, who remembered what things were like before the Great Renewal, were, with few exceptions, the only ones whose appearance betrayed their sex. Although the new treatments preserved or renewed their youth and relieved them of some of the manifestations of sex, they could not obliterate all the differences in bodily configuration that distinguish men from women.

They tried by cleverly designed clothes to conceal these differences, and courtesy demanded that no notice be taken of them; yet the practiced eye could usually detect the sex of these oldest inhabitants, which included Adrian, Phoebe, Gilbert, Marcia, and their contemporaries.

Marcia rode in silence, reflecting upon the changes in the condition of her sex since she was a young bride. Then, the contrast between the sexes, based upon innate biological differences inseparable from their diverse roles in reproduction, was emphasized, and to a large degree exaggerated, by social customs that seemed specially designed to intensify these differences. While on one hand women were deemed incapable of doing many things that men did, or of doing them so well, and often paid less even when they performed the same work with equal competence; on the other hand they were the objects of gallantries and special attentions which, although ostensibly compliments, were in reality concessions to their supposed weakness and inferiority to men. Although oftem embarrassed by the crudeness of the methods employed by the militant feminists of that distant epoch, Marcia could not fail to recognize a certain justice in their demands for greater equality.

Now all that controversy was as dead as that which followed the publication of Charles Darwin's The Origin of Species. And how pleasant it was to live in a society where individuals capable of sharing the same interests, ideals, and aspirations, of performing the same tasks, were not separated on the basis of a function that, even a millenium ago, had become grossly exagger-

ated in relation to biological needs; where the sexes, equal in strength and intelligence, were no longer set apart by contrasts in appearance, and where custom tended to ignore rather than to emphasize such small residual differences as persisted — a society in which one was no longer a man or a woman, but simply a human being in the best sense of the word!

While Marcia was immersed in her reverie, the car stopped in front of the television studio and she and her companions got out. As they approached the building, Phoebe noticed with satisfaction that the tower which rose high above it was surrounded by nets to prevent birds from striking against the ironwork. Long ago, she had been distressed by accounts of migrating birds that, on certain nights, crashed into high transmitting towers in such numbers that their bright dead bodies littered the ground below.

HISTORY OF THE GREAT RENEWAL

In the thirtieth century, the great metropolitan newspapers, which in the twentieth century had daily consumed the pulpwood from whole forests of trees, were a thing of the past. People who had at last developed adequate appreciation of their planet's beauty and bounty, along with a settled determination to preserve them, could no longer permit such monstrous waste. Radio and television had long since become adequate media for the dissemination of news. Paper was now reserved for books, scientific journals, literary magazines, and other publications deemed worthy of preservation; for public documents, private correspondence, and similar indispensable uses. Discarded paper was recycled to save the trees.

Before ten o'clock, a distinguished company was seated in front of the camera in the studio of the Callipolis Television Service. On either side of Adrian were the people most closely associated with him in the development and application of his great discoveries: Phoebe May; Gilbert and Marcia Sorobin; Robert Goodseed, president of the venerable foundation that bore his family name; James Herter, formerly director of biological research of the Foundation; Benedict Stein, who still guided its medical department; and Florence Parelli, who had contributed so much to the art of child care that half the world regarded her as a second mother. Father O'Shaughnessy, who should also have been present, had died in the Great Plague.

Promptly at ten, the announcer of the station stood before the microphone. "Fellow citizens of the world," he began, with a touch of that bombast that still clung to his art, "we are here today to celebrate one of the most momentous events that this ancient planet has ever seen, the thousandth birthday of the first human being ever to attain this great age. Not since the first astronauts landed on Mars, nine centuries ago, has any event aroused such universal enthusiasm or, I am sure, brought so many people to their television screens. That was a wonderful, a fantastic achievement, a triumph for human skill and perseverance; it advanced our knowledge of our planetary system; but it hardly changed the tenor of life here on Earth. Wild schemes for sending surplus population to our sister planet were abandoned when it became clear that people could not survive there without massive, and exceedingly costly, support from their home planet. Of the three valiant men who made that historic voyage through space, only one survived the long journey home.

"Unlike that marvelous but ill-fated exploit, the achievements of the people here before us have improved the length and quality of human life to a degree that, I hazard to say, even they could hardly have anticipated when they began their experiments so long ago. Indeed, it is hardly an exaggeration to affirm that not only humanity, but the very planet that bears us, has benefited immeasurably by the endeavors of these excellent people, who began their work at a time when mankind, multiplying thoughtlessly and excessively, threatened to destroy it as an abode of life by their huge demands upon its productivity. Although the

names and faces of these people have long been familiar to most of you, perhaps some of our youngest auditors will not know them, so let me present them to you."

Here he turned the television camera successively upon all except Adrian, introducing them one by one.

"Finally, " the announcer continued, "I come to our principal speaker, Dr. Adrian May. This program is being broadcast to the six continents and the principal islands in all Earth's oceans by means of communication satellites. We estimate that nine-tenths of the world's population, or about one billion people, will be seated in front of their television screens, watching and listening to us. And of this vast multitude, hardly any of you would be alive today had it not been for the genius and perseverance of the great scientist whom I now present to you, and who will review for you some of the principal events in his long, beneficent career. Dr. May!"

It is not easy - Adrian began - to review in an hour our thousand-year-long effort to improve the quality of human life and bring us into more harmonious relation with the planet that supports us. I shall have time to touch only upon some of the major developments in this long interval. In a few years, the Goodseed Memorial Foundation, with which I have had the privilege to be associated for nearly ten centuries, will publish its First Millenial Report, giving in far more detail the history of the discoveries that brought about the Great Renewal and their effects upon a changing world.

Let us go back to the beginning. While a young student of biology -- I mean young in years, for I still feel young in spirit

and body — I became interested in the reversibility of vital processes. Since I believe that nearly everybody is familiar with the story of how, from reversing the development of tadpoles I was gradually led to the discovery of the hormone that lengthens your own lives, I shall not repeat it now. I shall only remind you that, for reasons that will presently become clear, I worked with a secrecy that is quite foreign to our present united and peaceful world. Indeed, even then, it was contrary to the usual practice of scientists in our Foundation and in the free democratic countries of the West. As success followed success, I was torn between a great hope and a great fear. It appeared that I held in my hands the means to prolong indefinitely the best years of human life, thereby realizing an age-old aspiration of mankind. At the same time, I was certain that a great, widespread prolongation of life, in the conditions then prevailing, would be utterly disastrous to humanity and our planet as a whole.

To understand the reasons for my fear and the secrecy it imposed upon me, we must look briefly at the world as it was in the mid-twentieth century, the period when my discoveries were made. Although, on the geological time-scale, man in something like his present form is a quite recent arrival on this planet, in human terms our genus is very old, well over a million years and possibly over two million. For most of this long interval, man lived by hunting other animals, fishing, and gathering such edible fruits, seeds, and roots as grew wild in forests and

meadows. As with any large animal that does not produce its own food, much territory was needed to support a single individual and populations remained low, probably, over much of the inhabitdd world, of the order of no more than one person per square mile.

Then, about twelve thousand years ago, at the time of the so-called Neolithic Revolution, certain tribes learned to cultivate plants and domesticate animals, and gradually these arts spread over the Earth. This greatly increased the amount of food that could be obtained from a given area, and, as a result, populations grew denser. Great cities sprang up in the fertile valleys of the Middle and Far East. Nevertheless, high infant mortality, diseases of all sorts, periodic devastating plagues, and frequent wars often followed by massacres, kept the population from becoming excessive. Since very large areas of the world were still inhabited by wild, forest-dwelling or nomadic tribes, the global population remained low. At the beginning of our present era, not quite three thousand years ago, when the famous Roman Empire was at the height of its power, the world's population was probably about two hundred million. It did not reach one billion until the middle of the nineteenth century.

About this time, a number of factors promoted a far more rapid increase, which presently began to alarm thoughtful men, for they foresaw world-wide disaster. In the first place, huge areas of the globe that had been thinly populated by people with a primitive economy were colonized by people, largely of European origin, with a much more advanced economy, that could support much denser populations. Secondly, industrial development fomented

the growth of more and bigger cities. Thirdly, improvements in diet, hygeine, and public health, along with advances in medicine, greatly decreased infant mortality and prolonged the average life span. In the mid-twentieth century, when I discovered how to prolong life, its average length in the industrially more advanced countries, especially in Europe, North America, Japan, and Australia, was close to seventy years for males and several years longer for females, and it was slowly increasing.

I am sure that this appears very short to you, and it will appear an even more pitifully brief span of active life when I remind you that some of these years were occupied by helpless infancy, and, for some of those who survived longest, by an almost equally helpless senility; while the average was increased by including in it the time spent in a sort of living death by many whose years were prolonged by medical skill. Nevertheless, even then, in industrially retarded countries like India, heavily overpopulated and subject to periodic famines, life expectancy at birth was only about forty years; and in some of the recently independent countries of Africa, it was hardly more than thirty, as it appears to have been in the Roman Empire. Probably in prehistoric times it was even shorter nearly everywhere. Nevertheless, from a remote period, and in the most diverse lands, some people lived for seventy or eighty years, and rarely even a hundred or more. Those who survived the perils of infancy and childhood, the recurrent plagues and wars, for three or four decades, had evidently such tough constitutions, and were so adept at preserving themselves, that they were capable

of enduring many years more.

In the 1960s, the human population of our globe passed the three billion mark, having doubled in the preceding sixty years. The situation was becoming acute. Despite increasing agricultural production, resulting from more efficient farming and the development of high-yielding grains, a substantial proportion of the world's people were undernourished. Huge areas planted to a single crop provided optimum conditions for the rapid increase of the insects, fungi, and other organisms that attacked this crop. To combat these pests, incredible amounts of highly toxic chemicals were spread over the fields. Carried by wind and water, these poisons accumulated in the oceans, where even organisms at great distances from inhabited land, ~~as in Antarctic seas,~~ were contaminated by them. ¶ Cities grew until they contained eight or even ten million people, and the air above them was foul with the exhaust gases of many thousands of gasoline-driven motorcars, the fumes from factory chimneys and electric plants, smoke and dust. The noise and confusion in these congested cities was horrible. Rivers, polluted by the effluents of cities and factories, were often hardly better than open sewers. Forests were shrinking alarmingly before the inroads of growing hordes of land-hungry farmers. Whole species of animals were becoming extinct; wildness and beauty were fast vanishing from the Earth. Sober scientists, not easily alarmed, were predicting that the situation would grow worse and worse, with widespread famine by the year 2000.

Meanwhile, the two most powerful countries, the United States of America and the Union of Socialist Soviet Republics, otherwise known as Russia, were accumulating armories of deadly weapons, including extremely powerful bombs, in quantities sufficient utterly to destroy each other, with perhaps the rest of the world along with them. Even then I had lived through two World Wars, the most destructive of human life and wasteful of the planet's resources that had ever been waged; but a third global war, fought with nuclear weapons, might have made these destructive conflicts seem, by comparison, like tribal skirmishes.

I am sure you will ask: "Were there no rational people in that age, to take the situation in hand and correct it? What kind of men were our ancestors, to watch the world fall into ruin and do nothing about it? Why didn't they, in the first place, reduce the birth rate?"

I assure you that some of my contemporaries were deeply troubled by this situation, and did what they could to correct it, which on the whole was no more than alerting their less perceptive fellows to impending perils. Already, as a sort of by-product or unpremeditated result of industrialization, the birth rate had fallen substantially in the more developed countries, although this decrease was to a considerable degree offset by the reduced infant mortality. But the Catholic Church, then one of the wealthiest and most powerful organizations in the world, stubbornly opposed the limitation of births by mechanical or chemical means, then the usual methods of preventing conception. In certain largely Catholic countries, especially in Latin America,

population was increasing at the astounding rate of three or four per cent a year. In the United States and other countries, great publicity was given to the need to reduce the size of families in the public interest. There and elsewhere, family planning clinics were established, with the support of philanthropic organizations and soon of governments, to help married couples adjust the number of their offspring to their ability to support them.

The result of these well-meaning efforts was what might have been foreseen. The more intelligent, responsible, public-spirited people did, on the whole, produce fewer children; but the least intelligent and responsible people continued to beget them in large numbers, in and out of wedlock, too often without the least preparation for their reception or any thought of what would happen to these unwanted babies. The number borne unintentionally by unmarried mothers, who could depend on no husband to help support them, was appalling. Remember that, in those far-off times, people were constantly assailed by strong reproductive impulses that many of them lacked the will-power to control. The birth rate did fall, even in some Catholic countries, but the price of this reduction was the accentuation of a tendency that eugenists had long deplored: the least desirable elements of the population, including its very dregs, were increasing more rapidly than the more desirable members. With the deterioration of the average quality of the people, the situation began to get out of control. Violence and crimes of all sorts increased alarmingly. In many cities, people were afraid to leave

their homes at night, because they might be robbed or abused on the streets. And the world's population was still increasing far too rapidly.

This, in briefest outline, was the condition of the world when I believed that my method for prolonging life had been perfected enough to be widely applied. You can see why I was so anxious to keep it secret. By bringing the death rate still farther out of balance with the birth rate, it would have greatly aggravated the demographic problem, accelerating the deterioration of our planet and bringing closer to us the predicted global famine. Although by announcing my discovery I might have won fame, instead of benefitting humanity I would have harmed it immeasurably, probably more than such fiends of that century as Hitler and Stalin. But the strain of carrying my secret alone was becoming more than I could well bear. After much deliberation, I resolved to reveal it to my colleagues of the Goodseed Memorial Foundation, in a session behind locked doors, and depend upon their combined wisdom to decide what to do with it. We agreed to transfer all research on this subject to a secret laboratory in a remote wilderness. The result was the station at Amatanga, which is now familiar to almost everyone, as it has been made into a historical monument.

While my colleagues and I continued in private to perfect procedures that could greatly benefit a humanity ready to receive them, we watched from afar the deteriorating global situation. It was distressing to hear over our radios reports of ever more frequent social disorders; to know that freedoms which men

had shed their blood to win were being lost, as dictatorial governments strove vainly to control turbulent populaces; to witness, even at a distance, the general decline in honesty and decency. In the first quarter of the twenty-first century, the world's population exceeded seven billion. Some of the wealthiest cities were short of water and electric power. Famine struck here and there, indiscriminately, not sparing even countries with the soundest agriculture. It became impossible to preserve national parks and wild-life reservations from incursions by hungry multitudes. Over vast expanses of the Earth, woodland disappeared as desperate men tried to grow food on whatever land they could find, no matter how sterile and unproductive. Thousands of species of beautiful animals and plants vanished from the Earth, never again to grace it by their presence; while pests of all kinds multiplied enormously, despite the huge quantities of poisons that were spread around to deter them.

Relations between the world's two most extensive empires, the Russian and the Chinese, had long been strained. Sharing variant versions of the same ideology, they became, as often happens in such cases, the most bitter enemies. Each needed more room for its expanding population, and long-standing disputes over their common boundary in Asia finally erupted into large-scale warfare. At first they fought with what used to be called "conventional weapons": guns, cannon, mortars, and bombs so powerful that one could spread destruction over several acres of a city like this. The Russians had superior armament, but the Chinese were more numerous, and they pushed so far into the territory of the

Russians that the latter became desperate. They might have unleashed their huge stock of hydrogen bombs, a single one of which could destroy Callipolis with all its inhabitants, but they knew that the Chinese were able to retaliate, although less massively. Besides, everyone feared the radioactive fallout from these bombs, which, borne afar by winds, by no means restricted its harmful effects to the country upon which the bombs were dropped.

Instead, it was widely believed, although proof is lacking, the Russians resorted to biological warfare, secretly introducing into the heart of China the germs of a new and extremely virulent plague, that they had developed and kept closely guarded for just such a contingency. In any case, there is no doubt that the Great Plague broke out in packed Chinese cities and, despite the frantic efforts of doctors, bacteriologists, and public health officials to halt it, rapidly spread over a too-crowded Earth, killing all except the most resistant of those infected in less than a week. North America, Australia, New Zealand, and a few smaller islands escaped the plague by completely isolating themselves from the afflicted countries, permitting no communication except by radio; but all the rest of the world was smitten.

When at last the plague died away, almost as suddenly and mysteriously as it had begun, scarcely a billion people remained alive on the whole Earth. Now the world was certainly not overcrowded; large areas were almost wholly depopulated. Some of us thought that this was the long-awaited moment when we could, without fear of disastrous consequences, release our secret; but

others, led by our wise colleague, Dr. Herter [who now appeared on the television screens] were more cautious. Remember, they said, that even without the indefinite prolongation of life, the world's population had increased from one to seven billions in considerably less than two centuries. What could prevent its sevenfold increase in a much shorter interval, with the same disastrous consequences, if mortality were greatly reduced or even practically abolished? Now, while the population is low, is the time to learn how to control its density. Only after we have solved this problem can we safely release the life-prolonging hormone to the public.

Then something else troubled us. Would it be desirable to prolong indefinitely the lives of everyone then living, including hardened criminals, the chronically ailing, defectives of all sorts, people constitutionally incapable of enjoying life? During the famines and disorders that had preceded the Great Plague, and evenwhile it raged, many men of the lowest type had kept themselves alive, and even managed to enrich themselves, by preying mercilessly upon their neighbors. Should such despicable specimens of humanity be given extra years of life by the society they had outraged?

We considered the possibility of limiting the treatment to selected individuals, but this seemed practicable only if we kept their number very low. If the hormone became widely known yet difficult to obtain, it was almost certain that it would be manufactured and sold illicitly, and that the most selfish and predatory people would manage to get it, by hook or by crook.

Moreover, it seemed cruel to permit some people to grow old and die, watching neighbors of the same age remain young and strong. After much deliberation, we decided to withhold the treatment until the world, or at least its most advanced countries, proved their ability to control the population rationally, and while doing so to improve its quality. Again, we were forced to delay, painfully watching the passing of many people worthy to be saved.

Some decades before the Great Plague, certain enlightened states had attempted to regulate their population by licensing births, in addition to, or instead of, the much older practice of licensing marriages. Although at first much opposition was aroused by a measure that was deemed a flagrant infraction of individual liberty, rational people were finally made to understand that nothing they did had more public relevance than the begetting of children, who would determine the future texture of their nation, who would be educated and receive many benefits at the public expense, who might prey upon society and have to be maintained in prison if they turned out badly. To obtain a license for begetting a definite number of children, rarely more than two or three, the prospective parents had to show that they had good health, sound genetic constitution, ability to earn a living, and capacity to cooperate with their spouse, as demonstrated by several years of harmonious married life. These licenses were expensive, often costing the greater part of a year's income of the applicants; but they ensured free maternity services, along with medical care and education for their children,

up to the age of eighteen or twenty years. Although the fees collected for the licenses rarely covered all these expenses, the state, as was proper, made up the deficit, for these were children that it wanted. The object of charging so much was to restrict parenthood to people of good character and sound constitution, who really desired children and were willing to make sacrifices for the high privilege of having them. For those who could not qualify for licenses, the prevention of conception was made easy by various methods then in use; and heavy penalties, which differed from state to state, were imposed upon those who brought unlicensed babies into the world.

This system, which would have been capable not only of holding the population at any desired level but of steadily improving its quality, by stopping the reproduction of those unfit for parenthood, failed because of the difficulty of preventing the overflow from too densely populated states without licensing from entering those that tried to keep their population in balance with their environment. But after the Great Plague, a badly shaken world was ready to introduce licensing almost everywhere, under the guidance of the countries that had escaped this catastrophe, and undertook to prevent the utter decay of civilization in nations too debilitated to preserve it by their own unaided efforts.

This was the first step in the Great Renewal. After three or four generations of licensing births, a humanity that had again become prosperous had demonstrated its ability to control its rate of recruitment and had improved its average quality to a degree that amazed even those of us who had long advocated this

measure. It is thanks to licensing that I am speaking today to such an intelligent, responsible, sympathetic, and healthy audience, seated before your television screens in the six continents and many islands.

Finally, nearly two centuries after my discovery was made, we believed that the time was ripe to publish it. Meanwhile, we had so perfected it that one injection every three months, in alternate years, would prevent ageing in those who started the treatment before reaching thirty-five, and no harmful side-effects were evident. Older people had to begin with heavier, more frequent doses; and those over seventy or seventy-five often failed to respond to it, which was a bitter blow to many aged people and their families. But man's power has limits.

After a few years, the annual death rate began a steady decline. From thirty or forty per thousand people nearly everywhere before the advent of modern hygeine and medicine, it had fallen to somewhat less than ten per thousand in the industrially advanced countries in the second half of the twentieth century. Then, with deteriorating conditions caused by overpopulation, mortality rose again. Today, it has nearly everywhere fallen to about one death among every two thousand people per year. This continuing mortality results from accidents, disease, and the very small minority of people who, for reasons unexplained, fail to respond to the treatment. This means that if every couple produces only one child in a thousand years, or of every thousand couples one gives birth to a child each year, the population will remain stationary.

Nature is prodigal and produces organisms of all kinds in excessive numbers. Many species of animals could maintain their populations with far fewer progeny than they actually have, because if fewer were born, fewer would die prematurely from starvation, predation, and disease. Man probably was no exception even when he was a savage with no weapons more effective than stones and sticks to protect himself from fierce predators. As civilization advanced and mortality decreased, man's reproductive powers became ever farther out of balance with his need to reproduce. Not only was this the primary cause of the excessive population that afflicted the world before the Great Plague, but, since history began, the sexual impulse has been the source of countless personal tragedies and oppressive feelings of guilt. Now, with the introduction of the life-prolonging treatment, man's reproductive potential would become even more absurdly disproportionate to his need of progeny.

To have a biological function far exceed its biological use is an imperfection, a sort of monstrosity, like a sixth finger or the hugely exaggerated antlers and tusks of certain animals that have become extinct. Foreseeing this difficulty, we began to seek a solution, many years before our method for prolonging life was made public. Finally, my colleague, Dr. Gilbert Sorobin [who now appeared on the television screens] developed the hormone inhibitor that prevents the onset of puberty, without retarding physical or mental development, and in many individuals actually improving it. This, as was logical, was introduced widely before the life-prolonging treatment, about the time the licensing of

births became general. At first many parents, especially the more sensual, protested that its application would deprive their children of certain pleasures — brief, exhausting pleasures that have been responsible for a vast preponderance of misery and sorrow. Others, recalling their struggles to keep their own strong reproductive impulses decently controlled, wished to relieve their children of this burden and gave the method a trial. Predictions that it would diminish love turned out to be false; there was never so much love among mankind as there is today, and it has become far more spiritual. Little by little, as the beneficial results became apparent, nearly everyone was won over to this new method. We no longer fear that population will get beyond control, and we all live in much greater harmony than formerly.

Although I am honored by all the attention that is being given me today, it makes me feel that I am receiving far more credit than I deserve. The Great Renewal would not have occurred without the devoted efforts of many people, some of whom are no longer with us to delight in this splendid transformation. In large measure, it was built upon discoveries supported by the Goodseed Memorial Foundation. Long ago, in a severely competitive society, a poor boy named Henry Goodseed, by hard work and intelligence, rose in the business world until he amassed a vast fortune. His son, Robert, who has come three thousand miles to join us here, inherited this fortune and gave most of it to establish the Foundation, which he has wisely guided for nearly a thousand years. Gilbert Sorobin has collaborated closely with me for a period

almost equally long, helping me to perfect the life-prolonging treatment, developing the sex-inhibitor, and making many other important discoveries; and both of us have been aided and encouraged by the partners of our lives. Our work would have been impossible without the support of James Herter, who for many years directed the division of the Foundation in which we carried on our research. Dr. Benedict Stein not only guarded our health throughout our prolonged isolation at Amatanga but played an indispensable part in testing our preparations. Gilbert's hormone-inhibitor was applied world-wide under the vigilant eyes of Florence Parelli, the Foundation's Director of Child Welfare; it is d due largely to her indefatigable efforts that the troublesome differences between the sexes have been largely abolished in our modern world. [Each appeared on the screens as Adrian mentioned his name.]

Now, as to the future. We still do not know how long the new method can keep us alive. I have completed a thousand years, and the others here before you are not much younger. People in their eighth century are common. We neither look nor feel old; all of us may last for thousands of years more, perhaps indefinitely. On the other hand, something unsuspected may arise to cut life short after a certain interval. In the absence of experience to guide us, it would be unscientific to make predictions. We can only surmise and hope, while we spare no effort to make ourselves worthy of whatever span of conscious existence, here or on some higher plane, may be available to us.

We used to hear it said that the traditional three score and ten years of life was enough for anybody; that if we lived much

longer we would be bored to death, going through the same routine from day to day, seeing and hearing the same old things over and over. However, I can truly say that in my thousand years I have rarely been bored or found life stale, although I must confess that I was often depressed by what was happening in the world before the Great Renewal. And I believe the same is true of nearly everyone who hears me now, including the oldest of my auditors: we are alive because of our intense interest in the beautiful world that supports us, because of our zest in living. Indeed, without the will to live, I believe that nobody could survive so long. A few people still die from senile decay, and we can discover no reason for this other than that their dull, unresponsive minds find nothing to stimulate them; either they neglect the treatment or it does not have the usual effect upon them.

Today, most of us believe that to know and enjoy, with grateful appreciation, all the sublime and lovely things that this universe contains, to respond feelingly to its wonder and splendor, gives high meaning — I will even say sacred significance — not only to our own lives but to the cosmos, of which we are revealing parts. We recognize that it is our duty to preserve the beauty and fruitfulness of our planet; to keep it a fit abode not only for human life but for life as a whole; never to abuse it recklessly, as our ancestors too commonly did. This interest and this responsibility, along with the friendliness we meet wherever we go, maintain our zest in living.

Finally, I must take this means to tell all those who have sent the birthday greetings that have poured in from all parts

of the Earth how grateful I am for them. They make me feel that my long life has not been wholly misspent. I would like to acknowledge each one of them by a personal letter, but this would be too large an undertaking. I thank you.

PROSPECTIVE PARENTS

Nearly five hundred years old, Verbena House had been built so substantially that it was hardly less sound than when new. With fifteen rooms, it was the home of seven people. Damon and Julia Beryl lived there with their daughter Amanda, who was already a hundred and twenty-six years old. Damon was a metallurgist; Julia currently worked in the municipal library of Callipolis; and Amanda was a botanist. Bion Paston, an authority on Greek philosophy, served in the post office on alternate years. Vera Vismia taught school and was an accomplished violinist. Alfred Carmona was an engineer and an expert cabinetmaker. Elaine Perama, considered the best ornithologist in the city, was also a skilled seamstress. A household was made up of people who elected to live together because they were close friends; they were not necessarily related by birth.

Although these seven people made their home at Verbena House, they were rarely all present together. Damon's duties at the distant steel plant kept him away during alternate years, but not without occasional visits home. Alfred's engineering projects took him far and wide. All traveled much, especially Amanda and Elaine, who made long journeys together in search of birds and plants. Nevertheless, the house was rarely without at least five or six occupants, for guests often arrived, staying for days or weeks and doing their share of the domestic tasks along with their hosts; for there were no domestic servants. And even if the house

had been left quite alone, it would have been safe, for Callipolis was not plagued by thieves. Long ago, the last policeman had resigned, complaining that he had nothing to do, and no successor was ever appointed.

On a clear, calm evening, a few weeks before Adrian's birthday, Bion and Vera walked in their garden, enjoying the fragrance of night-blooming flowers, watching the moths that hovered before them in the moonlight, and listening to the sweetly melancholy cries of a nightjar.

"How brilliantly the stars twinkle!" remarked Vera. "I wonder whether we shall ever know whether any of them is the sun of an inhabited planet."

"Haven't you heard?" asked Bion. "After scanning space for nearly a thousand years, the dish-shaped radio antenna at Arecibo, which has been repeatedly improved, has at last picked up signals that come from the direction of the star Epsilon Eridani and are inexplicable unless they were sent by intelligent beings, trying to communicate with other planets."

"Were they in voice or in code?"

"In code."

"Have they been able to decipher them?" asked Vera.

"No, they are quite unintelligible, just dots and dashes, which, however, fall into a pattern quite different from the pulses that emanate from hydrogen gas. Plans are being made to answer them; but Epsilon Eridani in nearly eleven light years away, and our reply will take that long to reach one of its planets, if it has any. Even if highly intelligent beings inhabit

such a planet, many years will certainly pass before we can understand each other and carry on a fruitful dialogue. And what patience will be needed to wait at least twenty-two years for an answer to any question that we might ask them!"

"Do you believe anything of value will ever come from this long-continued effort to communicate with planets beyond our solar system, other, of course, than just knowing that intelligent beings live elsewhere in the Universe, which in itself would be a most gratifying discovery? I mean, will we learn things that give us a deeper understanding of this mysterious Universe, or perhaps change our manner of living in some important way?"

"Only if we learn to exchange ideas by means of a common language, which would be very difficult over such vast distances, without signals that travel faster than light, which, for all its swiftness, creeps like a snail through the vastitude of interstellar space. Sometimes I have wondered how we could even begin to learn each other's languages. Perhaps if we could send television images along with sounds, transmitting the picture of a man or a tree while we pronounce the word for it, as when we point to an object and repeat its name to a child learning to speak, we might make a start. But to transmit a television image to another star would require a tremendous amount of energy. Our technology is still not advanced enough for that, and perhaps theirs isn't either."

"Sometimes," remarked Vera, "I think we already have too much technology and would do better to live more simply. One of those old utopian romances in our library contains such a charming

picture of people living happily in a society with a quite primitive technology that, while reading it, I had a great desire to join them."

"Those people may have had little science and technology, but I'm sure that the author of your book made them of a very high quality," suggested Bion.

"They were of exceptionally high character."

"That's the whole point. A good society can have much or little technology, but it is impossible without excellent people. Happiness depends far more upon what we are in ourselves than upon the equipment we use for our necessary tasks. But remember that we owe our long lives to the advanced science and technology that supported Dr. May's research."

"Yes, we must be thankful for that, but the price we pay for it is the great scarcity of children. I wish there were more of them. I teach them because I love them. Certainly they are troublesome at times, but on the whole I find our children charming."

"Well, unless you can find some way to make this old planet expand, you cannot combine long lives with an abundance of children, without running into all the troubles that preceded the Great Renewal," Bion reminded her.

Vera pushed her face into one of the great dangling bells of the queen-of-the-night, inhaling its heavy fragrance. For a long while she was silent.

"Vera," said Bion, putting an arm around her slender waist and drawing her gently to his side, "something's on your mind. We haven't been the closest of friends for seventy years without knowing each other and sharing all our thoughts. What is it?"

"Haven't you heard that our community is about to select a

couple for parenthood?" she asked.

"Yes."

"And I have been thinking that I would volunteer."

"Why have you waited so long?"

"I'm not sure that I would be accepted. You know that to give birth to a child who could live a thousand years, or a million for all we know, is a great responsibility and a great honor. It seems conceited to believe oneself worthy of it. Sometimes I think it would be better for the community to choose the two prospective parents, without waiting for volunteers. Then it would not appear that anyone is pushing himself forward."

"As you know," explained Bion, "there are sound reasons for the present procedure. In the first place, the person must have a strong desire to become a parent. The community might pick a very estimable person who does not feel the call to beget children. Then this person would either have to refuse, which might be embarrassing, or he would accept as a matter of duty, which would be worse. One should become a parent only because he loves children and believes that he will find great happiness in raising them. The other reason for the present procedure is that a couple must volunteer together. If the community chose one person for the mother and, independently, another to be the father, the two might not love each other enough."

Vera buried her face in another of the great white corollas, blushing like the girl she was at heart.

"Have you chosen the father?" he asked softly.

"Don't you know whom I want?"

"I might guess, but, like yourself, I hesitate to appear conceited. It is as great a responsibility, and as great an honor, to become a father as to become a mother."

"Will you do it, Bion?" she whispered.

"I hadn't thought about it. There are others in the community who might be preferred above me. But since it will draw us even closer together, I will stand for election with you."

He pressed her girlish figure closer to himself. One from the old days, viewing them thus in the moonlight, might have supposed they were adolescents discovering their first love.

After a thoughtful pause, Bion continued: "We must consider this very carefully. Parenthood is no light undertaking. Have you thought about all that this involves?"

"Yes. They will give me something to cancel the effects of the sex-inhibitor. My breasts will swell out; I shall become thick in the middle; I shall lose my slender figure, and everybody will know that I am a female. After two or three years, if all goes well, I shall be ready to grow a child in my body, just as any other mammal does. And what will happen to you?"

"Hair will sprout all over my face, and more of it on my body, too. I shall be obliged to shave every morning, so as not to be too obviously different from everybody else. At intervals the sweet light of our Apollonian lives will be darkened by Dionysian passions, more animal than human, and so difficult to control that of old they often drove people to do things that they knew were wrong. But I hope that I shall be strong enough to subdue them when they become too insistent."

"And after we have had two, or, at most, three children, and the last of them no longer needs my milk, I shall be given the hormone inhibitor again, and be relieved of certain troubles that child-bearing women have. You could begin with the inhibitor even before that. We shall lose our ability to beget children, and become more as we were before; but we shall never again, no matter how long we live, be quite the same. We shall be like the people who grew up before the introduction of the inhibitor. If you look closely at people like Adrian and Phoebe May, you can always tell their sex, although I know it is impolite to notice it."

"Those who have been parents are honored for their service to humanity. Unfortunately, women sometimes die in childbirth, which, as I have read, can be painful. Have you weighed the risks, Vera?"

"Before a woman is permitted to become pregnant, she is examined by a doctor, and if he decides that she cannot bear a child without danger, she is given the inhibitor again. I know that in the old days they sometimes cut a mother's body open to remove a baby that could not be born naturally - a Caesarian operation, I believe they called it - but that is not permitted to happen any more; it is much too harsh."

"You are brave, Vera, and I doubt not that many of our neighbors would vote for you to become a mother. You are beautiful, intelligent, strong and healthy, a successful teacher because you love and understand children and they love you. All this is in your favor. But I am not so sure about myself; you might reduce your chances for election by choosing me as your partner."

"Nonsense, Bion! You are beautiful and have all the necessary qualifications. Everyone loves and respects you."

"Well, if we are not elected, we shall never know the extent of our failure, because the voting is secret and the count is not made public; the committee in charge simply announces the names of the chosen couple."

"And if we are chosen," continued Vera, " we can give life to children who may live much longer than Adrian May has done. What more wonderful gift can one give to anybody? I know that long ago life was often so bitter that people wished they had never been born. But it is different now, since the Great Renewal. We realize what a rare privilege it is to live on a planet as exceptional as this, in a society so well organized as ours, enjoying all the beauties of nature and the marvelous things that men have created. Then there is a special relation between parents; the children that they create together and lovingly nurture for years are living bonds between them, drawing them even closer together than other people are. I know that we are all good friends here in Verbena House. We live in amity, as brothers and sisters were supposed to do in the old days, although, from what I have read, I suppose that the relationship was often idealized. But none are so close as Damon, Julia, and Amanda, although she was born well over a hundred years ago. And see how dear to his parents Philip Sorobin is, yet he must be over nine hundred years old. All this, I believe, is worth the troubles we shall have, and even the risk of death in childbirth, which today is exceedingly slight."

"You generous, courageous child! In this undertaking we shall

certainly have novel experiences, such as are denied to most people today. Although we know far more than our ancestors of long ago, about certain aspects of life they might rightly regard us as innocent as little children. We shall understand better what living was like for those people of ancient times, which is of value to the historian and the philosopher; I have read much about them, but there is nothing like actual experience. Shall we go in now; the night is becoming chilly?"

Arm in arm, they walked toward the house, from which floated the soft notes of Damon's harmonica.

Like the rest of the country, Callipolis was divided into communities of from one to two thousand inhabitants, which were largely autonomous, and assembled from time to time to discuss their affairs and elect their representative on the municipal council. One of the duties of these community assemblies was to select, from among well-known neighbors, the couples who would bear the children needed to keep the population from declining. Candidates for this distinction announced their intention well in advance of the meeting; and although their qualifications might be discussed privately by small groups, this was never done in the open assembly, where it might wound delicate sensibilities. In the secret voting, Vera and Bion were chosen to bring new life into the community, but they never knew by how wide a margin they had won over the six other couples who competed with them. Everyone at Verbena House rejoiced in their election.

At a quarter past eleven on Adrian's birthday, while the orchestra played a solemn march, the couples that had been chosen in Callipolis and neighboring communities to become parents

filed into the large auditorium of the Television Service. In their white robes that were the same for both sexes, with their hair arranged in similar styles, the members of a couple, walking hand in hand, looked so much alike that one could hardly tell who would be the father and who the mother.

When the music stopped and the couples had taken their seats in the front rows, the announcer went to the microphone and said: "This year, as seems fitting, we here in Callipolis have combined the annual dedication of our prospective parents with the birthday celebration of our oldest and most revered citizen. Forty couples have volunteered, and been chosen by their respective communities, for the noble task of giving new life to mankind. First we shall have a few words from Dr. May, Dr. Sorobin, and Dr. Parelli. Then, couple by couple, I shall introduce to you these people so worthy of our gratitude and respect."

"Of all the birthday presents that might be given to me," Adrian began, "none could be more welcome, more uplifting, than the sight of you, my friends, who from the greatness of your hearts have volunteered to bring new life into the world, undeterred by the inconveniences inseparable from this holy undertaking. You do this, I am sure, not because you are impelled by passion, not because you hunger for new sensations, but because you have found life a wonderful adventure, because you are grateful for the privilege of living, and in splendid generosity you wish to give to others the priceless gift that others have given to you.

"Long ago, in the early years of my life, it was very different. Then, it is true, some of the more thoughtful people wished to have children from motives similar to yours, although probably

seldom so purely altruistic. But millions of babies poured into the world without forethought or preparation, simply because their parents were driven by impulses similar to those that impel even the lowest of animals to reproduce. In one respect, man had fallen below the animals, because in them reproductive behavior follows well-integrated innate patterns that usually conform closely to the needs of their species; whereas the human stock had long ago lost such a pattern, and countless people flagrantly disregarded the conventions that society had established as a substitute for it. Not only did this cause grave social disorders; it prevented any improvement in the quality of human beings, if it did not actually result in steady deterioration. This situation made some of us take a gloomy view of man's future.

"Now, when I see people such as those before me volunteering to become parents, from motives such as impelled you, my thoughts are the reverse of gloomy. A society that selects its best people for parenthood can contemplate its future with confidence. It is true that, with the very low rate of recruitment we now have, we cannot expect much evolutionary change; but we lack evidence that, even with a very much higher reproductive rate, man had changed much in the thirty or forty thousand years preceding the Great Renewal. Such an interval is too short for considerable evolutionary change in an animal as long-lived as man; the immense transformations of human life in this time span were cultural rather than evolutionary in the biological sense of this term. But if we cannot expect perceptible evolut-

ionary advance in the next ten thousand years, we can at least uphold the high level of human quality that we have already achieved, and that should satisfy us.

"I congratulate you all on your engagement day, and wish you great joy in the children who will be yours. I thank you for the happiness you have given me on my birthday."

Same spacing

Next Gilbert went to the microphone and said: "I can hardly do more than repeat the sentiments of my life-long friend, Dr. May. It gives me the greatest joy to stand before you who have generously volunteered to perpetuate the life of mankind. And for me, each time I attend a ceremony such as this, whether in Callipolis or somewhere else, there is special satisfaction. Long ago, when with the aid of my colleagues I introduced the method for inhibiting reproductive maturity, the logical complement to the indefinite prolongation of life, I was widely vituperated as an enemy of mankind. Some declared that I was intent upon the extermination of man; others complained that I wished to deprive them and their children of the pleasures of sex. There was widespread belief that, without this strong biological drive, people would not beget enough progeny to prevent the extinction of mankind.

"Those who thought that way were unjust not only to me; they grossly underestimated the character of their fellows. Far from desiring man's disappearance from the Earth, I wished to help him achieve rational control of his destiny, which in great measure depends upon his abundance. And I had confidence that there were enough people, and those of the highest quality, who would perpet-

become parents because they generously wished to give the boon of life to others, rather than because they were driven by organic impulses too strong to resist. For us, the begetting and rearing of children has become the pursuit of an ideal — the ideal of a perfect human life. The forty couples before me today are further proof that my high estimate of human character was not wildly exaggerated

"Early fears that the hormone inhibitor would destroy love proved unfounded. They arose from the confusion of love with something quite different, the reproductive passion. Although the two often interpenetrate in our complex human nature, they differ in origin and psychic foundations; either may occur in the absence of the other. One of the most profound and heartening changes brought about by the Great Renewal has been the vast growth of love, not only of people for each other but for the natural world as a whole. Long ago, prophets and sages exhorted people ~~neighbors~~ to love their neighbors as themselves. But they did little to make people more lovable, and it is difficult to love that which is not truly lovable. Neither by appearance nor conduct did a substantial proportion of mankind inspire, or deserve, much love. ¶ In those old days, hatred evidently predominated over love, for uncontrolled reproduction resulted in intense competition for the necessities of life, and individuals, no less than nations, too commonly regarded their neighbors as enemies rather than friends. Those who professed to love humanity were either thinking of the ideal man rather than the actual men around them; or else their professed love was an attitude, assumed perhaps in

dutiful obedience to the old commandment, rather than deep, warm affection. Now, when we say we love our fellow men, most of us really mean it, for people have become far more lovable, and love springs spontaneously, without bidding, in the presence of what is truly lovable. And this change is due in large measure to the hormone inhibitor and the way we select as parents people who are capable of unselfish love and give promise of raising children who are both loving and lovable.

"I salute you all as great-hearted people who are a credit to humanity. May you all find lasting joy in rearing children as noble as yourselves."

Then it was Florence Parelli's turn to speak.

"With profound emotion," she began, "I rise to say a few words to you who today dedicate yourselves to the most solemn and momentous, the holiest endeavor that we humans can undertake, the creation of new lives with all their capacity for joy and suffering. I am sure that you have volunteered for parenthood because you are generous and wish to give — to give a happy life to someone else, to give a new citizen to your community, to pass on all that you value, your enthusiasms, your loyalties, your loves, to a receptive spirit. And I believe that no creature on earth is so receptive, so in need of the best that we can give it, as a human child. Unlike the young of other animals, he is born without the innate patterns of behavior which, maturing spontaneously in due course, will suffice to fill his needs and keep him fairly safe in his natural environment. Ages ago, the human child's dependency upon his elders was prolonged because

he had so much to learn from them. In modern times it has become longer, because our children have even more to learn.

"For many years, your children will be absorbing things from you, consciously or unconsciously, often when you least suspect it; not only language and daily habits but information, attitudes, beliefs. Even when they seem to resist or reject what you try to give them, they are often, almost despite themselves, being receptive to your influence. Do not be disappointed or discouraged when they appear to close their minds to what you ardently desire to implant in them. Perhaps they are not yet ready for it. Perhaps a tiny germ will slip in, to grow slowly and unperceived in the mind's dark depths, and burst into flower before your delighted eyes when you have ceased to expect it. Nor should you become alarmed when your children from time to time rebel against your authority. After all, to develop a will of one's own is part of becoming a human being; you would be even more disturbed if they continued to be mere passive things, devoid of spontaneity.

"In my long experience with young people, those with wise and loving parents, who neither neglected their children nor imposed themselves overwhelmingly upon them, have nearly always turned out well, a credit and a joy to those who gave them life. With such parents as those now before me, and in a society that does not expose its young people to corrosive influences, I would be greatly surprised if all are not of the highest quality. And please remember, if any difficult problems arise, I and my colleagues are always ready to help you to the best of our ability.

"Now, if you will all pass to the stage, two by two as the

announcer calls your names, I shall give each couple an autographed copy of my newest book, Raising Children in the Thirtieth Century, and Dr. May will hand you the certificate of election for parenthood that he, Dr. Sorobin, the president of your community, and I have signed."

As each couple passed to the stage to shake hands with the three speakers and the announcer, and receive the book and certificate, viewers the world over were uplifted by the sight of the pleasant, intelligent faces and graceful bodies of those who had been chosen to become parents in Callipolis. In twentieth-century terms, they were not yet married but only formally engaged. They would not live as man and wife until they were physically ready for parenthood.

As the ceremony ended, the announcer invited everyone to listen in at noon, when a most important announcement would be made.

18.

THE ARCHAIC ISLAND

Promptly at noon, people watching their television screens heard the announcer say: "The government of Madagascar, the last important part of the Earth to remain outside the Great Renewal, has signified its intention to end its isolation. A number of countries, including our own, have agreed to help the island to transform itself as rapidly as possible, so that it may be incorporated into the United World. Arrangements were completed a few days ago, but the news was withheld so that it could be broadcast as part of today's celebrations, a fitting gift for the thousandth birthday of the person who, more than any other, laid the foundations of the Great Renewal, Dr. Adrian May. In order that you may better understand the significance of this great event, we have asked our well-known historian, Sylvia Harmon, to review briefly the tragic history of this great island."

My friends - she began - to cover even in briefest outline the whole history of Madagascar would take far more than the half-hour that has been allotted to me, but even to understand the events leading up to the present situation we must go back some nine centuries, and to a distant part of the world. When, toward the end of the twentieth century, certain of the United States started to limit births by law, many raised a great outcry, calling it a flagrant violation of individual liberty. The Catholic Church was strongly opposed, claiming that this could

be done only by methods prohibited by the religion, and that the new licensing laws violated the principle of religious freedom guaranteed by the Constitution. ¶ The question was finally brought before the Supreme Court, which, after long and heated debate, upheld the constitutionality of the licensing laws. The verdict approved by the narrow majority of one of the nine justices pointed out that every nation has the inalienable right to preserve its territory and institutions; that the unlimited increase in population was causing its decline in quality along with the deterioration of the environment that supports it, threatening the decay of the nation's institutions; that to limit births by law was logically less of an infraction of the rights of individuals than to compel men to jeopardize life and limb in the defence of their country in war, for those who do not yet exist can have no rights. Religion, the decision pointed out, was a matter of belief and ritual, which were nowise affected by the licensing laws; population increase, on the contrary, so strongly affected the quality of the environment and the soundness of the economy, both of which the government was commited to uphold, that it could not fulfill its obligations if denied the power to regulate births.

So long as licensing was confined to a few states, those who objected most strenuously could move to neighboring states — in those times people were less strongly attached to their homes than we have since become, and changed their residence with a frequency that would amaze us. But after the Great Plague, when the regulation of births became almost universal, the dissidents

found themselves in a more difficult situation. About this time there arose a priest, Father Serignan, who had a persuasive tongue and already, during the plague, had gained much notoriety by proclaiming that this disaster was God's punishment of mankind for its sins, chief among which he specified the artificial limitation of births. Apparently he never explained why the United States, where such limitation was at least as widespread as anywhere else, was spared this devastating manifestation of divine displeasure. He now urged the faithful to abandon their country and seek a new land where they could practice their religion without interference by a tyrannical government. Just as, he said, the Pilgrim Fathers came to these shores in search of religious liberty, which their descendants now deny to others; so must we go forth to a land where we can be faithful to God's commandments.

Looking about for a place to go, Father Serignan hit upon Madagascar, which was thinly populated, because the majority of its inhabitants had been swept away by the plague. This mountainous island had been for a while a dependency of France, but had become independent soon after the Second World War. Serignan enlisted about five thousand people, men, women, and children, to accompany him to Madagascar; and from supporters who could not tear themselves away from their homes, he collected much money. With this he chartered four large steamships to carry the faithful to the promised land, and filled their holds with household furnishings, food, building materials, agricultural equipment, and whatever else colonists in a new land were likely

to need, including an imposing armament.

The priest's efforts to communicate with the government of the Malagasy Republic before the expedition sailed had been unsuccessful. Upon the arrival of his band at the port of Tamatave, without the passports and visas which in those days were everywhere required of travelers visiting a foreign country, Serignan requested an interview with the president, who hurried from Tananarive down to the port to confront this unexpected invasion. Negotiations broke off when the Madagascans, mistrustful of this sudden influx of so many strangers, would neither grant nor sell land to them. Thereupon, the ships pulled up anchors and steamed along the coast until they came to a sheltered bay, where the immigrants landed and, finding a promising site, proceeded to plant their colony. The small party of Madagascans that tried to dislodge them was repulsed, with loss of life, by the men who, on the long voyage out, had received military training for just such a contingency. Father Serignan justified this procedure by pointing to the example of the Israelites, who, after their exodous from Egypt, had with Yahweh's approval invaded Canaan by force of arms. The Malagasy government appealed to France and the United Nations Organization for help; but other governments were too impoverished, too busy recovering from the ravages of the plague, and too fearful of antagonizing the Catholics among their voters, to come to the aid of this remote republic.

After another unsuccessful attempt to dislodge the invaders,

negotiations were resumed; and the Malagasy government, deeming it best to recognize de jure what was already de facto, agreed to permit the colonists to remain if they would indemnify the owners of the land they had forcibly seized, recognize the sovereignty of the government at Tananarive, and pay the customary taxes.[9] As soon as the first group of immigrants was fairly established, they widely proclaimed that they would welcome any of their coreligionists, from whatever country, who agreed to conform to the commandments of their faith. Not only did this bring many devout Catholics from various lands, as country after country licensed births, but numerous people of other religions, or none at all, finding it wicked or inconvenient to limit the size of their families, nominally embraced Catholicism and joined the incoming stream. Years later, when May's life-prolonging treatment was widely introduced, certain Protestant sects, opposing it on the ground that it would drastically reduce the number of souls that passed through this earthly life on their way to heaven, reached an agreement with the priests who controlled the Catholic community that enabled their members to enter Madagascar in large numbers.

The Malagasy government declared this continuing immigration illegal but was powerless to stop it. With a constant influx of settlers and much financial aid from sympathizers abroad, the new Catholic community on Madagascar grew ever more populous and powerful. As it expanded, armed clashes between the colonists and the Old Madagascans, who were steadily losing their lands, became more frequent, with the latter generally getting the worst of it. After this had continued for about seventy-five

years, and the foreigners had infiltrated all the more fertile regions of the island, the Old Madagascans, unable to endure more, rose up in a widespread but poorly organized attempt to drive the New Madagascans out of the land. The latter were well armed and prepared for this, and although a few were surprised and massacred, the uprising was suppressed with heavy losses. Then, overcome by panic, many thousands of Old Madagascans fled to remote mountains or the arid western side of the island, where with difficulty they survived. The New Madagascans, now in full control, threw off all pretense of recognizing the Malagasy government and set up one of their own, with the island's archbishop as its president. Such was the origin of the theocratic government of Madagascar. Numbers of the poor Old Madagascans, finding it too difficult to wrest a living from the inferior lands that remained to them, were driven to seek employment from the more prosperous newcomers. Paid little for hard labor in the fields, treated as inferiors although they too were Christians, they lived in misery and sullen resentment.

After the rest of the world, enjoying the immense benefits of the Great Renewal, became reconciled to the changes it brought, immigration into Madagascar fell to an inconsiderable trickle. But the early colonists continued to multiply until the island was packed with more people than it could well support. With poverty and malnutrition, disease increased, and many infants were born only to die. In desperation, the island appealed to the outside world for help, especially for medical aid, since its own medical and health services had fallen far behind those of other lands. Several of the countries best able to help pointed

out that to decrease the death rate, without at the same time diminishing the birth rate, would only plunge the island into deeper trouble, and they made the regulation of births the condition for giving aid. When the priests who controlled the island replied that this would be an intolerable violation of God's law, offers of assistance were dropped.

From time to time, one of the New Madagascans studied or traveled abroad and returned with enticing reports of the happiness and prosperity that they had seen in other countries. Many of the younger islanders now wished to emigrate to escape the depressing life at home, but nearly everywhere the doors were closed to them. "We have not limited our own numbers in order to make room for the overflow from your too prolific masses," was, in effect, the answer given by these countries to requests for permission to immigrate.

Incensed by what it regarded as unreasonable and discriminatory treatment by other countries, the Madagascan government severed relations with them. This brought widespread feelings of relief, for the island remained a focus of diseases that had been wiped out elsewhere, and constant vigilance was needed to prevent their spread. Now, isolated from the rest of the world, with little science and scarcely any modern industries, the island regressed more and more toward a medieval economy, and with it went a medieval mentality. Shrines to the saints appeared at every crossroads; superstitions abounded; religious festivals and processions became the chief diversions of an impoverished populace, which, lacking much earthly consolation for its hard life, pinned all its hope upon admission to heaven.

This situation continued for centuries, while Madagascar fell ever more out of tune with the rest of the world. Then, eight years ago, an exceptionally dry season caused widespread crop failure. Famine stalked through the land, and in its footsteps followed disease. Pleas for succor brought shiploads of food from more prosperous countries; but it was insufficient; an antiquated transportation system could not move it quickly enough to all parts of the huge, mountainous island; and there appears to have been no little dishonesty on the part of the local officials responsible for its distribution. Several doctors and nurses, of the few that we have and need in our healthy world, went out to help the afflicted Madagascans; and I can imagine no more heroic abnegation than to expose a life that might continue for over a thousand years to the risk of contagion by some fatal disease, in order to succor starving strangers on an unsanitary, plague-ridden island. Nevertheless, the efforts of the medical team were largely unavailing; they lacked knowledge and medicines to treat diseases that had long been unknown in more advanced countries. Yet they alleviated the sufferings of some of those poor creatures. The epidemic ran its course and disappeared, as such things usually do. The next season brought more generous rains and more bountiful harvests. Madagascar emerged from its nightmare, its population greatly reduced.

Among the survivors was Dominic Alonso, a young priest who, while still a youth, had with great difficulty reached Europe, had been admitted into a seminary and become ordained, then traveled widely before returning to his native Madagascar. Surprised and vexed by the obsolete dogmas he there found prevailing

among the ruling hierarchy, he had protested against some of the more glaring anachronisms, only to be sent for his trouble to one of the poorest and most isolated parishes on the island. Now, burning with indignation over the gratuitous sufferings of his people, he saw that the time was ripe for changes long overdue. He went about the country, speaking to the people, contrasting the prosperity and felicity that he had seen in other lands with their own miserable poverty, convincing them that it was caused, not by the sterility of their island, but by their failure to adjust their population to their resources, which in turn was a result of the stubborn obscurantism of their government. The rest of the world, he affirmed, had for centuries been limiting births by methods that did not conflict with the doctrines of their religion or its highest ideals of chastity. Moreover, he reproached the people for their iniquitous treatment of the Old Madagascans, whose situation he tried to improve. His ecclesiastical garb won him a hearing where a secular orator of the same eloquence might have failed. Soon he was strong enough to defy a command from his superiors in Tananarive to remain in his own parish and confine himself to his priestly duties; even a threat of excommunication did not silence him.

People who had watched their whimpering children waste away before their eyes were not difficult to convince that they had too many of them, and that this, rather than their sins, was the real cause of their woes. Such was the persuasiveness of Father Alonso that he might have led angry mobs to overthrow the government in Tananarive by force, but he chose less violent means to

gain the power that he needed to effect reforms. With the support of some of the most intelligent and energetic of the younger islanders, he built up a political party that won him a seat in the national assembly. Four years later he was elected to the presidency of his country. One of his first acts was to start negotiations to bring Madagascar into the modern world.

The Council of Nations has agreed to help modernize Madagascar, but not by the immediate introduction of the life-prolonging hormone. Its people, they insist, must follow the same road that our ancestors took, centuries ago, in order to set their own Great Renewal upon a firm foundation. First they must prove that they can adjust their birth rate to prolonged longevity, in which endeavor the sex-inhibitor will help them greatly. When they have done this, and improved the quality of their population, the life-prolonging hormone will be made available to them. Meanwhile, agricultural experts will be sent to help restore their much-abused soil and increase its yields, engineers will build hydroelectric plants, city-planners will renew their towns, and other kinds of assistance will be given to them. All this will cost them nothing but their own [redacted] cooperation with determined efforts to improve their lot. Out of its own abundance of talent and energy, the rest of the world will do all it can for Madagascar, with no recompense beyond the satisfaction of seeing this last stronghold of archaic misery brought into the Great Renewal.

Many of us have been concerned over the fate of the unique animals and plants of that large island that has been so long

isolated from Africa and India, with both of which it was once joined as part of ancient Gondwanaland. After they drifted apart, Madagascar retained primitive life forms that could not resist severe competition with the more advanced types that evolved on the great continents. It was the principal home of the lemurs, those fascinating early representatives of the primate stock, to which we belong. Even before the Serignan invasion, their numbers were dwindling alarmingly as a result of hunting and the destruction of their habitats. We fear that few of them remain; some species may already have become extinct. But the new government of Madagascar has promised to make every effort to preserve them, along with other animals. Naturalists will soon be on their way to survey the remnants of the native flora and fauna that the island retains and draw up plans for their preservation. This news will be highly gratifying not only to Dr. May but to all friends of nature everywhere.

THE ANCIENT ENEMY

"She is dead," said the doctor, slowly drawing the sheet over the youthful face, so sweet and calmly beautiful, now that all pain had passed away.

Elaine Perama had died at the age of four hundred and fifty-eight years.

"Oh, Dr. Stein," cried Vera, "I can hardly believe it. We were sure you could save her. You have had so much experience."

After the engagement ceremony, Vera and Bion had hurried to the only hospital in Callipolis, a small structure with only thirty beds that were mostly empty, and a single operating room that was rarely used. By the bedside they found Amanda Beryl and her mother, Julia.

"We are not omnipotent," replied the doctor, "and I fear that our skill declines with lack of practice. My impression is that in the old days, when we were much busier, we did better on the whole. I had not seen a case like this for ages. We all did everything we could. I loved Elaine and feel her passing as much as any of you."

"You have been wonderful, Dr. Stein," said Julia, looking up with tear-dimmed eyes, while she tried to comfort her weeping daughter. "No one could do more. We must learn to submit to the inevitable."

Vera, clinging to Bion, moistened his shoulder with her tears.

"She wanted so much to live," sobbed Amanda. "There was so much she wished to do, so many kinds of birds she had not seen.

She looked forward so eagerly to the children that Vera and Bion would bring into Verbena House, where childish prattle has not been heard for many years. She would have made their clothes with loving care. Oh, it is cruel, cruel, to die so young! She was hardly half as old as Dr. May."

"Let us look at the brighter side of grief," suggested Bion, visibly shaken but trying to preserve philosophic calm. "Elaine had a happy and richly rewarding life, six or eight times as long as that of the famous ornithologists of old, whose accomplishments under difficulties she so admired. She had seen many more kinds of birds in their natural habitats than they ever did, and she knew much more about them. We all loved her dearly. I think we must regard her as a very fortunate person. It is we who suffer, not Elaine."

"But where are all her memories now? Where all her knowledge?" asked Vera, looking up from Bion's shoulder. "If we could be certain that her soul or mind survives and preserves them, we would not feel so sorry for her. We would still have an aching void in our hearts; but to be sure that her spirit lives on would mitigate our grief. Otherwise, the longer one lives, the more he learns and experiences, the more he loses when he dies. We seem to be caught in a dreadful predicament. What do you believe, Dr. Stein?"

"We do not know. Science can tell us nothing about what happens to our conscious self or soul after the body dies, because consciousness is never an object of scientific observation. In the absence of certain knowledge, we can only have faith, or

hope, that the spirit survives the flesh, as did our short-lived ancestors of long ago, who in moments like this were comforted by comforted by their religions; that was one of their principal offices. I find it difficult to accept the conclusion that a spirit so bright and vivacious, so generous and loving, as Elaine's has flickered out like a burnt matchstick, but I can give you no proofs."

"Then," continued Vera, "despite the great development of our sciences, which can keep us alive for a thousand years, and long ago stopped sending men to the other planets only because they were no longer bringing back enough new information to repay the immense effort, in the presence of this great mystery we are as ignorant and helpless as were our ancestors of long ago, who died young, believing that the Earth was the center of the Universe and God had made it all in six days."

"That is true," replied the doctor.

"We want so much to preserve everlastingly the things we love, our most cherished values, and the only way we could be sure of d doing so would be to remain alive for ever, at least some of us. And who knows that we can't? Dr. May, Dr. Stein, and others have already made a good start," said Amanda.

"A thousand years is but an instant in infinite time," Bion reminded her gently. "Dr. May has given humanity a wonderful gift, but he has hardly yet brought us significantly closer to immortality."

"Besides," added Dr. Stein, "some day, probably millions of years from now, the cooling Sun will no longer emit enough heat to support life on this planet; or, as others believe, it will

grow hotter until it explodes, enveloping Earth in a searing cloud of incandescent gases. In any case, astronomers give us no hope that this planet will remain habitable for ever."

"Ah!" exclaimed Julia, "Now I see why, when I was a schoolchild, astronauts tried so hard to find a habitable planet revolving around some other sun. Many of both sexes definitely lost their lives in the attempt; but some simply disappeared, probably beyond our solar system. Some people like to believe that their quest was successful and they or their descendants continue to live happily on a planet warmed by some other star, from which they could not, or would not, return to Earth. But I don't like to think they were so disloyal that, being able, they failed to report their discovery to the Earth that pinned such high hopes on them, and sent them forth at such immense expense. To be able to migrate from planet to planet, as each in turn ceased to be habitable, would so immeasurably expand our view of human destiny. The snuffing out of an individual life is tragic enough, but the total extinction of humanity, with all it has accomplished in thousands of years of unremitting effort to improve itself, is a far more desolating prospect."

"I greatly doubt that any of those scores of brave astronauts who simply vanished into outer space ever survived long on some other planet, if indeed they reached it," said Dr. Stein. "I hold it probable that, among the ~~thousand~~ hundred billion stars in our galaxy, many have life-bearing planets; but the living things that they support, each a product of a different series of evolutionary hazards, are certainly very different from those on Earth. It is

highly improbable that physical conditions on any other planet accessible to us so closely approximate those on Earth that men could long survive there, except encapsulated in an artificial atmosphere, as were the explorers who, long ago, spent three months on the Moon. We humans are too narrowly dependent on the air, the water, the chemical composition, the gravitational field, and the solar radiation of our own planet to flourish on any other. Our bodies are of the substance of this Earth and must share whatever destiny awaits it."

"Then you believe that there is really no long-term hope for humanity? Death will claim everything in the end?" asked Vera.

"On the longest view, our only hope is the ancient hope of spiritual survival in a realm not subject to the limitations of organic life. But, meanwhile, a humanity that has learned to take proper care of the Earth that supports it can look confidently forward to many thousands, if not many millions, of years in conditions infinitely superior to those our ancestors knew before the Great Renewal."

"I cannot avoid the feeling that what comes to nothing in the end, no matter how distant that end, is really nothing, an unsubstantial dream," declared Amanda.

"That seems an ungrateful attitude to take toward all the happy hours and wonderful experiences you have enjoyed. Perhaps, when this great grief has been replaced by hallowed memories, you will think differently," said Dr. Stein.

"I cannot help it," persisted Amanda. "Oh, what a great evil death is!"

"Ancient philosophers thought otherwise," Bion reminded them. "Death is the natural termination of all animal life, and they held that nothing that happens according to nature is evil."

"Wouldn't they believe, then, that to prolong life far beyond the natural span, as we do, is evil?" asked Julia.

"There is another way of looking at that," Bion replied. "We might say that nature endowed man with the capacity to reason, to experiment, to discover, and by using his natural gifts, man learned how to persuade nature to increase his life span at least tenfold. After all, as a great poet said:

Nature is made better by no means
But nature makes those means.

According to how you view the matter, to live a thousand years is as natural, or as unnatural, as to ride in airplanes or to speak almost instantaneously to people at the antipodes."

"But didn't you tell me once that Plato defined evil as that which corrupts and destroys?" asked Vera. "And what is more corrupting and destructive than death?"

"It was not Plato but the Stoics who insisted so strongly that death, being natural, cannot be evil. Yet Plato might have agreed with them, for he believed, with the Pythagoreans, that the immortal soul, far from being destroyed with the body, is by death released from it, as from a prison, and that, passing perhaps through a sequence of bodies, it may at last win eternal life in the celestial regions where the immutable Forms dwell."

"Well, I hope he was right, and Elaine's soul is already there," said Amanda.

She drew down the sheet and bent over to kiss her dead friend's forehead; but when her lips touched the cold flesh, she jerked away, as though stung by a hornet or shocked by an electric current, and burst anew into tears. Death interposes such an insuperable barrier between the living and those dearest to them.

Placing an arm around her, Dr. Stein asked gently: "How many dead people have you seen, Amanda?"

"She is the first."

"Well, I can understand how it affects you. But remember: if, before the Great Renewal, you had lived to your present age, you would have seen nearly all your family and friends, everyone closest to you, carried off, one by one, to the grave. Think how fortunate you are, and be brave."

"I'll try, but it's hard."

"It's especially hard for us to bear today, which was to be a day of rejoicing everywhere," Vera added.

"When I was a young intern at the hospital," remarked Dr. Stein, reminiscently, "the biggest holidays were the days when we were busiest. Many were carried into the accident ward from the crowded highways, where speeding cars had crashed together, killing or [redacted] hideously mutilating their occupants, who perhaps had been driving when more or less intoxicated by strong drink. Others became ill, and sometimes died, from eating too much. On Independence Day, which was celebrated in midsummer, children who went swimming were occasionally drowned, and others were injured by exploding firecrackers. Seeking pleasure, too many found pain and sorrow. Now we are more prudent, and do not

so thoughtlessly squander our lives. This tragedy today is most unusual."

"Let us conceal this from Dr. May, so as not to mar his birthday," suggested Vera. "He often went bird-watching with Elaine and loved her. He will be grieved by her death."

"There's no need to make anyone else unhappy today by this sad reminder that the ancient enemy still stalks through the world," said the doctor. "Tomorrow will be soon enough to break the news and bury poor Elaine."

CHILDREN OF THE GREAT RENEWAL

After his public appearances in the morning, Adrian wished to spend the afternoon and evening of his thousandth birthday with his family. He had been invited by his great-great-great-great grandson Arvano to a picnic supper on the latter's farm, about a dozen miles from Callipolis. Arvano was a descendant of Adrian's great-grandson Charles, who had become a scientist, joined the Goodseed Memorial Foundation, and some years before the Great Plague had been sent to the research station at Amatanga, where he had married a daughter of Gilbert and Marcia Sorobin and fathered two children, while the old marital customs still prevailed.

After lunching and resting at home, Adrian set forth for the farm with Phoebe, Gilbert and Marcia, their son Philip, his wife Florana, their granddaughter Aster with her husband Melisind, and Corin, the seven-year-old child of the last two, who was accordingly the great-grandchild of Gilbert and Marcia. Philip drove the battery-powered car, which in a half-hour's leisurely ride over a good road took them to the farmhouse that had stood so long and solidly that it almost seemed to have grown out of the ground, like the trees and shrubbery around it. Here the party was welcomed by Arvano, his wife Emina, and their two children, Marlo, aged thirteen, and Grendon, aged eleven. The children had gathered a boquet of flowers for their great-great-great-great-great-grandfather's birthday and gave it to

him with affectionate hugs and kisses.

The path to the river led through the orchard and then a belt of ancient forest. While transforming human society, the Great Renewal had not neglected the agriculture that supports it. For ten thousand years, while making countless innovations in other fields, people had been content to subsist on the plants domesticated by their Neolithic ancestors, with scarcely any additions. Remembrance of what these forgotten men had accomplished with little science served as a challenge to the scientific plant breeders of the Great Renewal, who lavished all their skill upon the development of perennial plants to replace the annuals that had hitherto supplied most of man's food, not only in the temperate zones but even in tropical lands with a year-long growing season. They had succeeded so well that trees and long-lived shrubs, along with home-grown garden vegetables, now yielded everything necessary for a balanced diet, as well as fibers and other necessities. The costly annual plowing, harrowing, sowing, and weeding that were indispensable for the production of a single crop of grains had nearly everywhere become obsolete. Trees kept the land in better condition and demanded less laborious care. Instead of being planted in huge pure stands, which favored the rapid spread of every plague that attacked them, a number of kinds were mixed together, as in a natural woodland, making groves that were not only highly productive but delightful to stroll through.

Animals were no longer raised for food. Not only were they uneconomical as converters of primary vegetable products into

food for man, but with growing refinement of sentiment people shrank from the brutality inseparable from their efficient exploitation as sources of proteins. No longer subject to human greed or caprice, animals of many kinds now led their natural lives in their natural habitats, the larger ones in the great areas of wilderness on rugged mountains, arid plains, and marshes unsuited for cultivation, the smaller ones in the tracts of unspoiled woodland that everywhere alternated with towns and farms. Of the domestic animals of an earlier age, a few horses were kept by those who enjoyed riding and a few peacocks to adorn the parks, but most of the others had become rare curiosities. People of the Great Renewal liked and understood animals better than their ancestors ever did, but they preferred to associate with them in their natural surroundings.

While their elders, carrying things for the picnic, walked slowly through the orchard, the children romped ahead, delighting in the outing. They looked and dressed so much alike that one could not tell whether they were boys or girls; if you had asked them which they were, the question would have perplexed them. In any case, the distinction was ignored by their parents and lacked importance for them. They were just children who studied and played together and enjoyed life immensely. In thirtieth-century English, all siblings, regardless of sex, were called "brothers" and referred to as "he." Nothing seemed to escape the keen eyes of these children. Corin was excited by a squirrel with a long, bushy tail. When Grendon spied a tanagers' nest in an orange tree, each in turn peeped in at the two speckled blue eggs,

then left them undisturbed. Marlo climbed into a mandarin tree and threw down sweet fruits for all to eat as they walked along.

As they passed through the forest bordering the river, the children could not resist shouting up at a band of monkeys foraging in the high treetops, as children have done from time immemorial. With serious brown eyes, a baby monkey peered inquisitively down at the earthbound bipeds, but the others, feeling perfectly safe, scarcely interrupted their meal.

Soon they could see the glint of water down the pathway. Marlo rushed ahead of the others, shouting "I'll be first in." Throwing off his clothes, he plunged into the cool, clear water, and was nowhere to be seen when the others reached the bank. Presently he appeared above the surface near the farther shore, calling "I swam under water all the way." Soon he was joined by all the others, some of whom rather hesitantly immersed themselves in the cool current that had tumbled down the mountains and paused here in a broad, calm pool before starting its journey across the fertile plain.

After their first bout of exhilarated splashing, Marlo and Grendon undertook to teach Corin to swim on his back.

"Look how easy it is," said Marlo. "You just lie down, and the water holds you up."

The first time Corin tried it, his head went under, and he came up spluttering.

"No, you hold yourself too stiff. Lie just as though you were on your back in bed; spread out your arms and kick your legs a little. Not so hard! Watch me! I'll hold you up until you can do it alone."

Marlo stood in the shallow water, lightly supporting the younger child while he stretched out on his back. Then, slowly removing the hand, he left Corin floating alone. "There, you're doing it," he exclaimed triumphantly.

Corin soon had enough of this and splashed about in the shallows, while the others, young and old, alternately swam up to the rocky head of the pool, then rested by lying on their backs, gazing up into the overarching leafy boughs, while they floated slowly down with the current to the sandy shoals at the pool's foot. Sometimes, holding hands, they made a raft and floated downstream together.

"I'll race you up to the head of the pool, Adrian," cried Marlo. (In this long-lived society, relationships had become too complicated to be designated by special forms of address. Children who loved and trusted their parents and other elders did not respect and obey them the less because they called them by their names without a handle.)

"All right! You set us off, Grandson," said Adrian.

The millenarian and the child of thirteen splashed side by side up the length of the pool. Adrian was the first to touch the ledge of rock over which the current plunged into it, but Marlo was only half his length behind."

"In another year you may beat me, Marlo," gasped Adrian.

After the sun dropped behind the mountain, the shadow lengthened over the stream, and the air became cooler.

"Come, children!" called Emina, "It's time to dry and put on your clothes."

"Just one more ride down the pool, please, Emina," begged

Grendon.

"Just one more," agreed the mother.

When everyone was dry and dressed, the older people spread a cloth on the sandy shore and laid out the food, while the children gathered dry sticks and kindled a fire to roast bosknuts, one of the newly developed tree fruits. While everyone sat around the cloth, quietly eating, Corin noticed movement amid the neighboring shrubbery.

"Look!" he whispered. "An agouti!"

Taking a banana, he pulled back the skin and held it out toward the animal. After a little hesitation, the big rodent with golden hairs on his arching back walked slowly out of the bushes, sniffing the air with his pink nose, and started to eat the fruit in the child's hand. Presently a small bird, resplendent in scarlet, green, blue, and black, alighted on Corin's outstretched arm and joined the quadruped at the feast. After centuries of freedom from persecution, harmless creatures of many kinds had lost their ancestral fear of man. These intimate contacts delighted the child.

By the time supper was finished and the picnic things washed and packed in the baskets, the last glow of sunset was fading from the western sky and little daylight remained.

"Don't go yet," begged Grendon. "It's such fun to sit around the campfire and pretend we are people of long ago."

"In those days," said Adrian, "I would have hesitated to sit here in the dark, especially with children, for this region was infested by several kinds of venomous snakes that began to prowl after sunset. But thanks to a discovery made by Martin

Bonnet, they seem to have been exterminated; at least, none has been seen for years."

They formed a circle around the slowly burning campfire, Corin lying on the still-warm sand with his head on his mother's lap, Marlo and Grendon close on either side of Adrian, of whom they saw less than they wished.

"Please tell us something about the olden times, Adrian," said Marlo, gazing into the glowing embers with serious brown eyes.

"Yes, tell us what it was like when you were a child," added Grendon. "Were children different then from now?"

"Yes and no. They were and they weren't. Watching you play in the water this afternoon, I could imagine you were our children — Phoebe's and mine — when they were about your age, long, long ago. On the whole, children are much the same as they ever were, and in some ways not very different from the young of other animals, playful, sometimes mischievous, observant, able to learn. At the same time, there are important differences, due partly to the way they are born, but even more to the way they are brought up."

"How are we different from children of long ago?" asked Marlo.

"You are gentler, kinder to each other, more obedient, quicker to learn. That is largely because your parents were selected with great care, so that they would have only the best kind of children. In the old days, almost anyone could have children, whether they were able to raise them or not. Some of the children were as nice as any today, but others were hard to teach and to love,

they were so headstrong, disobedient, cruel to each other and to animals."

"How else were they different?" inquired Grendon.

"In those days there were two kinds of children, that were called "boys" and "girls." The girls could grow up to bear babies and give them milk from their breasts, just as your mother did for you, and the boys could become fathers."

"Yes, I know," said Grendon. "Marlo and I are a little bit different when we undress. But he has brown eyes and hair, and I have gray eyes and light hair. Our noses aren't quite the same, either. I don't see that one kind of difference is more important than the other. We are all children, not boys and girls."

"Certainly," agreed Adrian, "you can play together, learn together, work together, do the same things, and love each other. That is what we think important today. The kinds of differences that you have noticed between yourself and Marlo don't matter much to us. But long ago people made a great deal of such differences. Those they called boys wore trousers and those they called girls used dresses; and they wore their hair differently, too. The girls were taught to pay so much attention to their appearance that they became vain. Boys cared little about clothes; they thought that made them too much like girls. They were often rather rough and fought with each other, believing that this was being manly. They were not supposed to cry when they were hurt; but girls were expected to be more gentle, and could weep without shame. For a long while, they went to different schools, and played different games, although that was changing when I

was a child; I went to school with both kinds of children. Naturally, when people made so much of the small differences that children are born with, and did everything they could to make boys and girls different, they grew up to be very different kinds of people; and this finally caused trouble. Now, when we pay no attention to the differences, but treat all children just the same, they grow up very much alike. And that is much more pleasant."

"But why did they try to make children different from each other?" asked Corin.

"For several reasons. One was that when boys grew up, they had often to go to war and fight and kill each other. For that they needed to be hard and brave. In most countries, girls never became soldiers, so they could be more gentle."

"What horrible times they were!" exclaimed Grendon. "How could anybody kill another person?"

"It is difficult for us to understand now; but in those days the people of one country were often taught to hate those of another country; and if you hate somebody enough, it is not hard to kill him."

"What other differences were there between children then and now?" asked Marlo.

"In those days, children were often punished. I had a good father; but more than once, when I was naughty or displeased him, he whipped me with a switch, and it hurt. Many children were beaten much more than I was."

"My parents never whipped me," declared Corin.

"Nor mine," added Grendon. "Only once, when I was little, Emina slapped my hand when I wouldn't stop playing with the

televisor, and I'm glad she did. I'd be very sorry now if I had broken it."

"You have nearly always been a very good child, Grendon," Emina assured him. "And so has Marlo."

"One great difference that I notice," continued Adrian, "is that children and their elders — their parents, grandparents, and so forth — feel very much closer today than they used to. My father was only twenty-four years older than me; yet when I was a child he seemed to belong to another age and to move in another world. My grandfather May was fifty-two years older than me, and I thought him positively ancient. I am nine hundred and eighty-seven years older than you, Marlo, yet I feel very close to you, as though I were your older brother; and I hope you feel the same."

Marlo rose, stepped behind Adrian, threw his arms around his neck, and said: "Yes, Adrian, you do not seem much older than me, only bigger, and very much wiser. I wish we could be together more."

"I do, too, but they keep me so very busy, answering letters, attending meetings, and doing other things that may or may not be important."

"How do you account for this change in the attitude of one generation toward another, Adrian?" asked Gilbert from across the fire. "When I was a student, and our parents averaged twenty-five or thirty years older, much was made of the 'generation gap,' which sometimes seemed an impassable chasm between us and our elders. Now parents may be hundreds of years older than

their children, yet the generation gap has all but vanished. To what do you ascribe the change?"

"It is an interesting psychological problem that has never, to my knowledge, received the study it merits. A number of factors appear to be involved. For one thing, society was changing at a dizzy pace back in the twentieth century; while now, having achieved a fairly satisfying manner of life, we make changes slowly and cautiously, so that the children are not brought up with habits and values that clash with those of their parents. Moreover, since we preserve our youthful appearance and temperament, we do not look much older than the children, can understand them better, and join in their games with hardly less zest than they have."

"Don't you think it equally important that the few who become parents these days can give much more time and thought to their children?" asked Phoebe. "It used to be that fathers were so busy getting ahead in their business or profession, mothers with housework, social involvements, or other things that they thought more important than being with their children, that they didn't become intimate enough with each other. Parental commands must often have seemed to the children like the edicts of an autocrat, the arbitrary decrees of some remote authority. Now that parents and children are much together, the latter can see and feel that their parents are wiser and more skillful than themselves, that when they forbid something, it is for the children's own safety, or everybody's. I believe that this is one of the chief reasons why children have become,

age for age, much more mature and cooperative than when I was growing up."

Corin had fallen asleep on his mother's lap. The fire burnt low. As conversation lapsed into thoughtful silence, they became aware of the night sounds: the murmur of the stream beside them, the buzzing and chirring of insects, the rustle made by some small animal rummaging in the leafy litter beneath the neighboring thicket, the soprano cries of a night bird. Overhead the stars shone brightly, flashing red and blue and yellow through the stirring atmosphere, in the very same patterns that had suggested fanciful names to Mesopotamian astronomers ages ago. It was easy for Adrian to imagine that he was a boy again, sitting around a campfire with his contemporaries — boys who had grown old and died more than nine centuries ago. Compared to the changes in human society that Adrian had lived through, nature changed so slowly that it seemed to be immutable, linking the dead past with the living present, providing the continuity that gives meaning and stability to progress. And even human nature had changed little since Adrian was a boy; all that was lovable in children and their elders had been preserved; only its baser side had been attenuated, if not eliminated, by the Great Renewal.

They rose and started back toward the house, Arvano leading the way through the dark forest with the flashlight that he had thoughtfully brought, Melisind carrying Corin pickaback, Grendon holding Phoebe's hand, and Marlo that of Emina. Adrian walked thoughtfully at the rear of the column, hoping that he would survive to celebrate his two-thousandth birthday in a world that had become so pleasant and friendly.

Part II Written Sept. 18-Oct. 24, 1973.