

Health

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EDITORIAL

Test Tube Children

ELSEWHERE we reproduce an interesting and instructive article by Dr. C. F. Dight, President of the Minnesota Eugenics Society, that appeared recently in the 'Medical World', under the caption 'Test Tube babies in sight', which has given the clue for our Editorial this month. The doctor says that "this (artificial child-birth) would be no greater departure from Nature's method than flying through the air differs from the old time method of transportation afoot or on horseback". Of course, to-day,

the world is full of scientific thrills, of which the process of begetting children in test-tubes is the latest. But we doubt if any comparison can at all be instituted between aeroplanes and test-tube children. The former adds to the comfort of mankind, despite all its attendant dangers but the latter is bound to lead mankind astray from all thoughts of decency and morality. To the few sterile couple, longing for children, it may be a solace but it will certainly prove a menace to the large majority of young couples, who



TESTTUBE TW SIN

A Happy mother of New York, who was childless for years, with the twins she has now got by means of artificial impregnation.

will henceforth have only unnatural children, with that milk of human kindness and parental love completely dried up in them. Recently, in America, two test tube babies had been produced and commenting on this Prof. Jeon Louis Faure, head of the Department of Gynæcology of the Paris Faculty of Medicine, observes in *'The Rajasthan'* as follows:—"Test tube babies were known to frolic in the streets of Pompeii hundreds of years ago. The Romans knew a thing or two about test-tube babies". "Anyway, syringes similar to the instruments now used by French physicians were discovered in the ruins of Pompeii". "The practice of artificial insemination has been known to leading obstetricians in Europe for the past fifty years." "In France, artificial impregnation is done only for married women." "But since I have visited the United States several times and understand something of the American mind, I can see why an American girl, jealous of her personal liberty and wanting to be able to think a child all her own might resort to this process, happy in not having to bother with a father." "Eugenic babies", said the specialist, "conceived through artificial means are still rare in France." "I know one married woman who had a child by this means, by a man whose identity was not revealed. The husband who was sterile, consented in order to make his wife happy. Usually the method is used to give childless couples infants, and the husband is the father". While people are enjoined to adopt Nature's methods in the preservation of their health, they are tempted to have recourse to unnatural

methods in the propagation of their progeny. Science may be abused here, as it has been abused in annihilating mankind in wars with poison gas and such other cruel engines of destruction. Scientists will therefore do well to give this invention a decent burial and not strive to encourage immorality by such means.

In this connection, it will not be out of place to recall here those glorious days in Ancient Hindu India when some children were born not out of wedlock but out of will-power, without the union of the sexes. The birth of Kusa was an instance in point. When Sita was sent to exile by Rama and was staying in Valmiki's Ashram in the forest, she one day took her son Lava to the river banks, whither she had gone to fetch water. Valmiki, not knowing this and suspecting that the child might have been taken away and devoured by some wild beast during her mother's absence, took a blade of Kusa grass and created a son out of his will power and left it in the cradle. Sita returned with her son and finding another baby, the exact proto-type of Lava, in the cradle, was amazed and she sought for an explanation from the Rishi. The Rishi narrated what all had happened during her absence and asked her to adopt this child also as her own. Here the creative power of mind-scientifically termed the psychic power-is manifest. To cite an example of an actual test tube child born in that epic age, we have to turn our attention to Mahabharatha. There it is said that Dhrona, the preceptor of the Kauravas and the Pandavas was born from a mud-pot wherein the ovum of Menaka fertili-

zed by the semen of Bharadwaja developed into a child. Villuputhur Alwar in his Tamil poem, Mahabharatha, graphically describes Dhrona's birth in these lines:—

“பரத நாத வேத பரத்வாஜன் என்பான்
 விரத வேள்வி தன்னின் மேனகையா லான
 சுரத தாதுவீழ்ந்த துரோண கும்பந்தன்னில்
 வரதனொருவன் வந்தான் வசிஷ்டமுனியை
 [யொப்பான்”.

Here, there was a pot or a receptacle, where the development of the ovum took place and wherefrom the child was born—the brightest intellect born of the best type of parents. This

was a clear case of a test tube child and sceptics, till a few months ago, might have treated this as arrant nonsense and a mythological legend but to-day Science has awakened our eyes to the possibilities of such a birth and no more can this process of artificial child bearing be denied or doubted. Our ancient sages, evidently knew how to create children both by will-power and by chemical means. Modern Science has only re-discovered the latter method, while the former is still in the laps of Gods, for, this power is hard to attain in this materialistic age.

The Consuming Bacillus and the Thousand Remedies

By

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TUBERCULOSIS has been called the Great White Plague. More appropriately it should have been called the Eternal Sickness. Just when the consuming bacillus first made its mark on human flesh and bones is not known, but the students of paleopathology, who read the signs of disease in ancient bones, tell us that tuberculosis was common among the ancient Egyptians. And they have several pounds of time polished bones in the museum of London's Royal College of Surgeons to prove it.

The consuming bacillus (there isn't a tissue in the body it does not attack and consume) has been one of the greatest actors in the drama called

civilization. It claimed for its victims the greatest of mankind. It stilled the divine music of Chopin; it stayed the glorious songs of Keats; it numbed the brain of the philosophical Spinoza, it cut down Schiller, Stevenson and Chekov among numerous other writers in their very prime. It has killed more human beings than all the wars of mankind. It has engraved its signature on tombstones in every cemetery on the face of the earth.

Hippocrates, the first of the great doctors, came to know the consuming bacillus early in his career. He saw how it blanched features and softened bones and made its victims cough their lives away. He said in a voice firm

with conviction; "The greatest and most dangerous disease, and the one that proved fatal to the greatest number, was the consumption." Aretaeus, another of the ancient medical fathers wrote learnedly on the disease. Galen warned mankind that tuberculosis was contagious.

In the 17th century doctors began to learn something more about the consumption. Franciscus Sylvius discovered that the germ destroyed by forming tubercles, whence came the name of tuberculosis, which meant a disease which destroyed body organs by causing many tubercles to be formed and then broken down. Sydenham, one of the greatest of early English doctors, realizing that no medicine was really effective against the disease, recommended horseback riding in the open, which was a cure as good as any.

It was Sydenham who started the open air treatment of tuberculosis as opposed to those who attempted to cure the disease with drugs. Two centuries later, also in England, George Bodington, Marwickshire opened a sanatorium for the first time for the specific purpose of treating victims of consumption. Bodington gave his patients fresh air, nothing but fresh air every minute of the day and night. He was so enthusiastic over the results he obtained that he published them in an article. He said that "To live in and breathe freely the open air, without being deterred by the wind or weather, is one important and essential remedy in arresting the progress of phthisis." This seemed like madness to the drug-conscious medical fraternity. They seized Bodington's sanatorium, drove

out the patients and turned it into an insane asylum.

For twenty years doctors in England did not dare to talk about the fresh air treatment of tuberculosis; they remembered the fate of the luckless Bodington. Then in Belfast, Henry McCormac, began anew to argue for fresh air, as did Benjamin Ward Richardson. In Germany the sanatorium treatment of consumption was started anew by Herman Brehmer. Humboldt and Schonlein became very much interested in his proposed project and through their support he opened the first sanatorium in the mountains of Silesia, a sanatorium which still exists. It was his pupil, Peter Dettweiler who introduced the reclining chair which became so popular with consumptives.

Brehmer's work became known throughout the world in a short time. In this country it was enthusiastically taken up by Edward Livingston Trudeau. The consuming bacillus played a very important role in the life of Trudeau. It killed his beloved brother. He determined to become a doctor in order to solve the eternal riddle of the White Plague. A few years after his graduation, Trudeau himself was smitten. He went into the wilderness to die. An Andirondack yokel who carried him upstairs to his room said: "Doctor, you don't weigh more than the dried skin of a lamb." When winter came, Dr. Trudeau was advised to go South. But he had faith in the healing air of the forest. He remained in the Andirondacks and lived. It was he who made the Andirondacks the most famed of sanatoriums for consumption in the eastern part of the

United States. He founded a famous sanatorium. He founded a laboratory to study the ways of the killing bacillus. All his life tuberculosis haunted him and his. It slew his daughter Chatte, and soon Trudeau himself was forever stilled by the disease.

Today the sanatorium way of treating tuberculosis is an established institution, and sanatoria are to be found in every country of the globe. But while new and more modern sanatoria were being built the consuming bacillus was being studied by more and more scientists. New facts were brought to light. Laennec, himself a victim of the disease, invented a tube which magnified a hundredfold the sounds which came from the lungs. Bayle noted the minute changes brought by the White Plague on the organs which it attacked. Louis told the medical profession that the tuberculous infection always began at the apices of the lungs.

It was Koch who forever attained immortality by discovering and identifying the germ which was at the bottom of it all. It was also Koch who drunk with the wine of achievement announced to the world that he had a cure for the plague. He offered a fluid made from the carcasses of the consuming bacillus, a weak broth of the attenuated toxins. Throughout the world hope was aroused, but it was false hope. Tuberculin was no better than the ancient Pliny's wolf's liver infused with wine or his smoke of dried cowdung drawn through a reed, or the tips of the burnt horns of bullocks.

Koch's failure was but the signal for other hopes. Other doctors offered

other remedies. "Tuberculosis will vanish before my ichthyol," confidently announced Mauritz Cohn. "The best remedy is creosote," said Reichenbach, sure that he was right. "Churchill was skeptical of these and proclaimed: "There is nothing better than idoform pills." "The best way to treat consumption is by the injection of cinnamic acid," asserted Landerer. "It is better to inject formalin into the patient's blood." "No, Pyoktanin is the one remedy which will really cure tuberculosis". So believed Sheinmann. "Best of all is the insufflation of thiocol", wrote Fasana in the medical journals. "There is nothing better in all the world than asse's milk," Vigerat told everyone. "Everything else fades into insignificance besides phosphoric acid", thundered Berheim. "Lactic acid is the supreme medicine", so said Krause. "Don't overlook the best of them all, potassium cantharidate," Leibreich was sure he had the right remedy. "Tincture of iodine is the antiseptic which dissolves all tubercle germs," said Coghill solemnly. Barbery was contemptuous of them all: "After all, the best of them all is guaiacol cacodylate."

They were all wrong. None of these medicines was of any value. Since then others have been offered. Friedmann startled the world with a serum made from turtles, but it was of no value. Camphor in oil has been used by Dr. Lowenberg, but the results have not been startling. Calcium chloride has been enthusiastically advocated by some doctors, particularly to stop hæmorrhages, but the confidence placed in this remedy has been too sanguine. There is really no

medicine which when given to the victim of the consuming bacillus will do much good.

Within recent years some rather interesting advances in the treatment of tuberculosis have been made. Dr. Frederick M. Allen found that insulin was a valuable drug to give certain types of tuberculous patients, not as a cure, but as a means of increasing the appetite and building the patient's weight and strength up. Insulin acts as a tonic. Dr. Allen found that while insulin had no direct effect on the disease itself it worked up an appetite for the patient with a subsequent gain in weight and strength as well as an improvement in spirits. The results were best in mild or arrested cases. Insulin is of value in some cases of tuberculosis but only as a tonic in helping to build the patient's strength up.

Much has also been done to prevent tuberculosis, which after all, is the best effective of all ways of curing it. Dr. Albert Calmette has for ever written his name in the annals of this disease by offering to the world what seems to be the best of all ways of preventing the disease. In association with Dr. Guerin he developed what is known as the bacillus Calmette-Guerin (the famous B.^oC. G.). Dr. Calmette has found that with the B. C. G. he has been able to effect a drop in mortality in infants from 15.9% to 3.4%. In New York City the ardent disciple of Dr. Calmette, Dr. W. H. Park found a drop in infant mortality from 8.6% to 1.1% when the infants were vaccinated with B. C. G.

Dr. Calmette believed that resistance to tuberculosis was induced by impregnating the lymphatic system with a

living strain of tubercle bacilli which was capable of producing progressive tuberculosis in animals. The famous strain known as B. C. G. was isolated in 1908 from a cow and has since been grown continuously on cultures containing beef bile. After 13 years the tuberculosis germs lost their fearful virulence and became healing. From 1924 to 1930, 210,000 babies in France alone have been vaccinated with the B. C. G. and the mortality from this disease has dropped tremendously. Dr. Calmette was one of the really great tuberculosis fighters.

Besides drugs, doctors have been fighting consumption with other weapons, with oxygen, with sunshine and with surgery. In 1911 Drs. Moore and Williams discovered the interesting fact that the tuberculosis germ failed to grow in surroundings where the concentration of oxygen exceeded 80%, and after an exposure of one month to such conditions they were dead. In 1915 Dr. Todd found that guinea pigs who had been infected with tuberculosis and who lived in an atmosphere of oxygen and ozone were benefited. Some ten years later Dr. Ross found that there was some improvement when he injected oxygen into knees which had become tuberculous. Other doctors also found this to be true.

In 1926 Dr. Barach produced a fatal form of chronic pulmonary tuberculosis in rabbits by the injection of human and bovine tuberculosis germs. He then studied the effect of the inhalation of 60% oxygen over periods as long as seven and a half months. The duration of life in the majority of the oxygen treated animals was from two to three

months longer than those who had not been given the oxygen treatment.

Encouraged by these results Dr. Barach began to treat human victims of tuberculosis with oxygen. While no remarkable cures had been effected the patients had been immeasurably benefitted. Oxygen is one of the physical measures used to afford relief.

In 1904 Dr. Malgat enlisted the aid of the sun as a curative agent in consumption. He let the sun play its healing rays upon the chest for twenty minutes a day. A year previously Dr. Rollier, who is now immortal as the father of modern sun healing methods, founded his famous sun-cure clinic in Leysin, Switzerland for the treatment of tuberculosis of the bones and joints. Because the sun was to be found everywhere, because the methods of healing were not spectacular, doctors at first disregarded this great healing force and lent a willing ear to take serums and ineffective drugs, because their makers always announced them with a flourish. But as time went on the value of the sun in the treatment of certain forms of tuberculosis became established. The Rollier treatment for tuberculosis became one of the greatest that modern science had to offer. Sun-cure pavilions are now to be found everywhere where tuberculosis is treated.

The method of sun treatment is simplicity itself. The patient is gradually made accustomed to living in the open air. After having become somewhat used to living in the air, he is placed on an open porch for an hour or two. The time is gradually increased until he is able to be in the open practically the twenty-four hours of the day. During this time, he of course, is either dressed or has full bed coverings and is not placed under the direct rays of the sun. While he is thus adjusting himself to open air life the patient is carefully observed. He is then ready for the real solar bath.

No sun is given later than one half hour before a meal and not sooner than two hours after. The treatment is carried out in the recumbent position, on the floor, or in bed or on a couch. The body is gradually, through a period of six days, exposed to the sun's rays, until the entire body is acted upon. The head is always protected either by a linen cap, umbrella, or awning at the head of the bed. The eyes are shielded by means of coloured glasses.

The sun's magic rays heal all that they come in contact with. It repairs broken down bone tissue. It dries up running sores and ulcers and causes new skin to grow over. It causes swellings to go down. It stills pain, it brings motion



Go, ye children! and play daily in the Sunshine. Sunshine not only cures but also prevents consumption.

back to diseased-looking joints. It brings down the temperature, diminishes the drenching sweats and decreases the cough. The sun is the greatest of all natural healing agents in consumption.

In addition to the sun surgery is of value in staying the progress of the disease. It was as early as 1822 that doctors realized that tuberculosis could be benefitted by resting the diseased lungs. Dr. James Carson, of Liverpool, England, stated that "If ever this disease is to be cured, and it is an event of which I am by no means disposed to despair, it must be accomplished by mechanical means, or in other words, by surgical operation." He proved in animals that one lung could be collapsed by letting air into the cavity surrounding the lung. He advocated the same procedure in pulmonary tuberculosis. He wanted to put the diseased lung at rest by collapsing it. He believed that the disease would thus be stayed and the patient's life prolonged.

Fifteen years after Dr. Carson stated his revolutionary beliefs, Dr. William Stokes observed that nature sometimes performed the collapsing of the diseased lung herself. Spontaneous pneumothorax the process was called. The patients were immeasurably benefitted when the diseased lung collapsed and was put at rest. In spite of these convincing demonstrations doctors seemed to lack the courage to attack the disease surgically. It was not until Forlanini of Pavia in 1894 and J. B. Murphy in this country, four years later reported their experiences in putting the diseased lung at rest by surgical means that this practice began to attract attention throughout the world.

As time went on three methods of putting the tuberculous laded lung at rest were evolved. These were (1) artificial pneumothorax, (2) phrenic paralysis and (3) extrapleural thoracoplasty. Artificial pneumothorax is the simplest of all of these and is the method of choice. It is the most efficient and the least dangerous.

Artificial pneumothorax consists of letting in a stream of air into the pleural cavity surrounding the lung that is to be collapsed. The increased pressure of the newly added air caused the diseased lung to fold up. Doctors have found that this method is life saving in all cases of extensive, rapidly advancing tuberculosis. This method, or any other surgical method is never used in mild, beginning cases. They are used only in advanced cases in which other remedies are of no use.

When pneumothorax is performed and the diseased lung put at rest there is an improvement in the patient's condition. Cough is decreased, fever lessens, the spitting up of blood is abolished as is expectoration. The appetite improves, and the patient gains in weight.

In more advanced cases simple pneumothorax cannot be performed because strong adhesive bands have formed which will not permit the lung to collapse when the air is let in. A more extensive operation has to be performed known as extrapleural thoracoplasty, in which the chest is opened up, several ribs removed and the adhesive bands broken up. The diseased lung is then collapsed and the same benefits as outlined above can be hoped for.

The last and least used of the

operations to put the tuberculous lung at rest in order to arrest the progress of a fatal disease is known as phrenectomy which simply means cutting and putting out of commission the long nerve known as the phrenic. The phrenic nerve controls the largest and most powerful of all the breathing muscles, the diaphragm. When the diaphragm is paralyzed by the destruction of the phrenic nerve it rises and collapses the diseased lung. The difference between this and the other operations is that phrenectomy is permanent, and the lung has forever been put out of commission. It is a necessary operation in very desperate cases and it saves the patient's life.

But operation is not the one and

final treatment. Sunshine is also required as well as good nourishing food. Healthful habits go a long way in healing tuberculosis or any other disease for that matter.

The earth is still going on for medicines to heal the White Plague. Occasionally a doctor attains fleeting fame by announcing a drug or a serum, but always these are found of no value. For many years doctors have been announcing a drug to heal the terrible hurt, but up till now no medicine has been found which will really heal. The sun, pure air, good food, and in advanced cases surgical measures are the only means of combating tuberculosis at the present time. Perhaps the future will find something better.

Germany, The Land of Swimming Baths

“GERMANY is a marvellous country”, so exclaimed recently an English traveller who had been on tour through Germany last summer, “but one feature struck me as something unique—no matter where you find yourself in this country you can always bathe and have a swim.” Another foreign visitor, when travelling on the HOLLENTAL railway in the Black Forest, was impressed by a fellow traveller who took the opportunity of a short halt when changing to Dreiseen railway in Titisee to take a rapid, refreshing dip in the clear water of the Titi lake. This is in fact a characteristic feature as that Englishman discovered.

When after highly instructive wanderings through museums and castles in the summer heat or after a long motor journey, or after a delightful

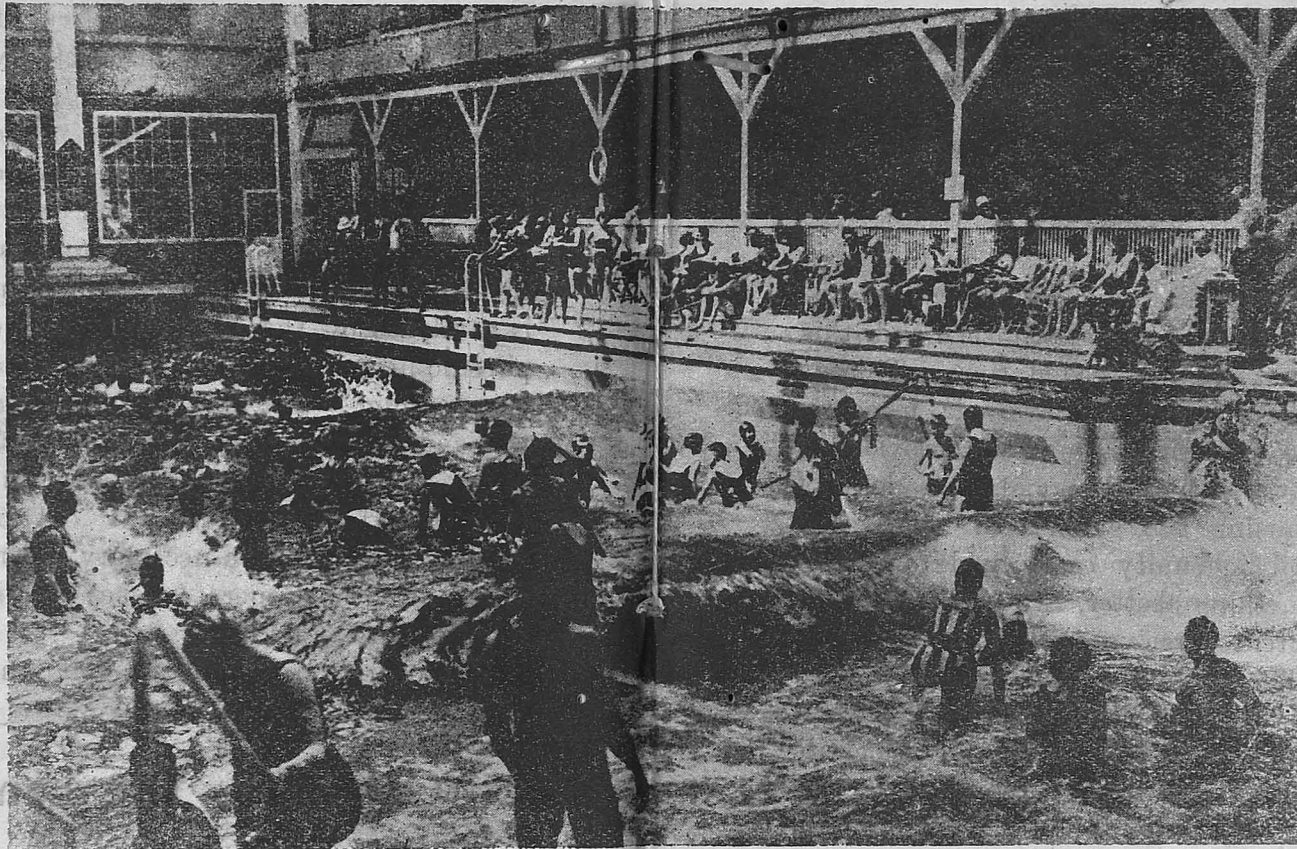
but exhausting walking tour over mountain and valley, one puts on a bathing costume and reinvigorates the tired limbs to new activity in a cooling swimming bath—it is only then that one can enjoy the full delight of his tour and feel really benefited.

It is actually the case that you can bathe everywhere in Germany. In the North of the country alone, in the provinces between Hamburg, Kiel, Lubeck, Stralsund, Stettin, Danzig and Konigsberg are no fewer than 3,000 lakes which invite you to a refreshing free bathe. In the same territory the Baltic Sea Coast presents along a stretch of over 1,000 kilometres (about 630 miles) an almost unparalleled variety of bathing places, while to the west of Emden by way of Bremen and Cuxhaven as far as the

Danish frontier, the more rugged coast of the North Sea and its bathing resorts provides manifold attractions. In the immediate neighbourhood of Berlin will be found also hundreds of fine forest lakes in which one can enjoy a free bathe. Here and there also will be found bathing establishments including the gigantic ones, such as those on the Wannsee and on the Muggelsee in Rahnsdorf, which attract as many as 80,000 visitors on the hot summer days.

Where no lakes are to be found, streams and rivulets offer satisfactory facilities. The swimming-baths belonging to the old towns on the Rhine, on the Weser, on the Danube and Main are magnificent. No less charming even from the landscape point of view are the stagnant lakes to be found in many large valleys, which nearly all have bathing stations. The Eder valley dam in the neighbourhood of Cassel constitutes, for example, a water basin of 200 million cubic metres' capacity and the Bleiloch valley dam, which stems the Saale, not far from Bayreuth, is even greater still; it holds 215 million cubic metres forming a water expanse of 28 kilometres in length and 2 kilometres in width ($17 \times \frac{1}{4}$ miles).

Specially rich in magnificent bathing sites is the country at the foot of the Alps-South Germany. The first to be mentioned here is the Bodensee with its quaint old towns, such as Constance, the romantic Meersburg, the Zeppelin town of Friedrichshafen and the island town of Lindau with their up-to-date strand bathing resorts which will repay a visit. Bathing resorts equally famous are by the lakes



One of Berlin's swimming baths which has artificial waves.

of Upper Bavaria. The Starnberger and the Ammersee by Munich, the Königsee by Berchtesgaden, the Kochel-Walchen and Tegern Lakes and last but not least, the splendid Chiemsee by Bad Tolz and also the Staffelsee, more or less in the vicinity of Oberammergau, the latter of which is particularly warm.

All the foregoing and the majority of the other free bathing stations in Germany offer bathers not merely facilities for extensive swimming exercise but also meadows and sand beaches for air and sun bathing. Most of these are in the immediate neighbourhood of comfortable hotels and hostelries, which throughout the whole summer are crowded with gay, unconventional throngs of bathers. What seems a special feature in Germany is the therapeutic baths with swimming annexes, such as, for example, the open air Thermal

swimming baths in Badenweiler in the South of the Black Forest where the water is normally at 26° , the Sole swimming baths in Nenndorf and Stassfurt, the Otto baths in the Harz town of Gernrode and many others.

Innumerable also are the halls with swimming baths which, in contradistinction to the open air baths, may be made use of in the winter as well. Every larger town has an installation of such baths. As being specially up-to-date may be mentioned to name only a few the swimming baths in Gartenstrasse, Berlin, which with its basin of 60 metres in length and 22 metres in width (approx. 200×70 feet) is the largest in Europe. There is also the Lichtenberg swimming bath in Berlin, one of the few warm water baths, and also the sea-water indoor

bath with artificial waves at Norderney on the North Sea, which may be recommended to all those whose doctors have forbidden them to bathe in the open air. Berlin further can boast of a swimming bath with artificial waves, which is at present being modernised and enlarged.

In all cases where these baths are equipped with supervised cabins for dressing and undressing and with fields for air and sun bathing, with facilities for sport and for all kinds of exercise, an entrance fee is charged, though nowhere is it anything but moderate. Whoever prefers to be alone may have a bathe gratis in the country in some sequestered forest lake, in a stream or rivulet. In this respect also Germany is well equipped to satisfy the requirements of all such predilections. In other words, that English swimming and bathing enthusiast was thoroughly justified when he said "Everywhere on a tour through Germany you can always have a dip and a swim!"—*Hans Zippel.*

A few Aphorisms on Music

"Music gives pleasure, is stimulating or restful, depending on the nature of the Music and the reaction of the individual."

"The man who sings at his work is a happy man and probably a well man."

"Life without Music is like food without salt."

"Music washes away the dust of every-day life."—CHICAGO'S HEALTH.

About Toothbrushes and Toothpaste

By

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If disease germs are destroyed by proper oral hygiene,
the risk of contracting infectious disease is greatly reduced.

THE mouth is almost an ideal hunting ground for germs. It contains all the necessary elements for their growth, namely warmth, moisture, air, and food. Moreover the mouth contains so many inaccessible corners and crevices where these little creatures can flourish and form colonies. So long as the general resistance remains high, these bacteria lurk around ever on the look-out for some weakening of the defences of the body to multiply and produce their diseases. It is safe to say that if microbes were attacked and destroyed in the mouth, the risk of contracting serious illness would be greatly reduced.

The materials required for carrying out oral hygiene are few and simple. They are a good toothbrush and reliable toothpaste, or powder, aided by the occasional use of a toothpick or dental floss silk. Mouth-washes, as a rule, are not required for a healthy mouth, being more used in abnormal and diseased conditions. It might be well to notice a few points about each of these articles in turn.

Choosing a Toothbrush.—First, the toothbrush. This is by no means an ideal instrument to use, chiefly owing to the fact that it is very difficult to sterilize. Boiling for ten minutes is the only effective method of sterilization and most brushes soon succumb to this treatment. In the Orient, the

natives use a small, freshly-cut stick or cane in place of a toothbrush and this is not used a second time. This is certainly a more hygienic measure. The toothbrush, however, provides a convenient and popular means of cleansing the gums and teeth, and until ingenuity can provide us with something better, we shall have to content ourselves with its use.

The toothbrush should possess a good bristle of medium stiffness. It is a common mistake to use one which is too soft and thereby the teeth are not properly cleansed. The bristles should not be packed closely together as is commonly seen, as this prevents their penetrating between the teeth. The bristles should also be arranged in the form of a curve to conform to the natural anatomical curve of the teeth. It is an advantage to have the end bristles set at an angle, projecting out beyond the rest so that the back teeth are reached easily.

It would seem unnecessary to add that each individual should possess his own toothbrush and use no other were it not that we know of cases in which this rule is not strictly adhered to.

Powder or Paste? Second, the question of a good, reliable paste or powder is most important. So many preparations are on the market at the present day that one may find considerable difficulty in deciding which to use. Some

of these do not fulfil the claims made for them, while others perform their work at the expense of the enamel of the teeth and the delicate mucous membranes of the mouth. Generally speaking, preparations containing such substances as carbolic acid, salicylic acid, and chlorate of potash should not be used. Carbolic acid, is widely known as an antiseptic, nevertheless its use is not to be recommended for such delicate structures as are found in the mouth. Salicylic acid and salol attack the enamel of the teeth, and should never be used. Chlorate of potash attacks the red blood cells of the body. The best antiseptics for use in the mouth are the essential oils, such as oil of cinnamon, eucalyptus, and winter-green, oil of cinnamon being especially useful.

The basis of most tooth-powders is calcium carbonate. Quite a good tooth-powder may be made by using three parts of this with one part of magnesium carbonate, adding a few drops of oil of peppermint if desired. Pure soap with a little saccharine may be used, especially for children.

Tooth-powders of this nature, however, while cleansing the teeth mechanically, do not attack the cause of the trouble, namely the germs, and for this reason a good paste is to be preferred. There are several very efficient ones on the market such as Gibbs, Kolynos, Euthymol, etc. Such preparations cleanse the teeth and are also antiseptic owing to the presence in them of the essential oils mentioned above.

Besides these materials, we require a toothpick or dental floss silk to remove food debris from between the

teeth and reach crevices inaccessible to the toothbrush. A good quill toothpick should be selected; no metal instruments, such as pins, should ever be used on the teeth or gums. Floss silk is very useful for this purpose and may be sterilized by dipping it just before use in a solution of perchloride of mercury (1 in 1,000), or in absolute alcohol.

Mouth Toilet.—The toilet of the mouth should be performed at least twice a day—morning and evening. The evening is by far the most important time, as during the night less saliva is secreted, and hence the acids are not washed away so quickly.

To perform the toilet of the mouth, a small strip of dental paste, about one-third to half the length of the brush, is laid on a *dry* brush by gently squeezing the tube from the *bottom*. The teeth and gums are then brushed vigorously in an upward and downward direction, and also employing a circular motion so as to penetrate well between the teeth. Not only must the outsides of the teeth receive attention but also the insides and especially the biting surfaces, as it is here that the teeth most commonly decay. The tongue and the roof of the mouth should be brushed and the gums gently rubbed with the tips of the fingers. If there is a tendency to pyorrhœa the gum over each tooth should be squeezed between the thumb and finger, *towards* the tooth (*i. e.*, downwards in the upper jaw and upwards in the lower). Thorough daily massage of the gums with a little toothpaste is the best preventive of pyorrhœa and also hinders the formation of tatar.

Having spent several minutes in brushing the teeth and gums, a little water should now be taken into the mouth and sluiced about between the teeth. A little gargling may with advantage be indulged in at this stage. The mouth should then be well rinsed

with clean water.

The toilet of the mouth is made complete by occasionally passing a little piece of floss silk between the teeth. This removes food particles from between the teeth, a spot where decay is most prone to occur.—*Good Health (London)*.

Test-Tube Babies in Sight

By

C. F. DIGHT, M.D.,

President of the Minnesota Eugenics Society.

To the embryologist it seems likely that before long children may be developed from the ovum stage and artificially born outside of the bodies of their mothers. This would be no greater departure from nature's method than flying through the air differs from the old-time method of transportation afoot or on horseback.

An ovum may be fertilized in an artificial uterus and its development go on there, no doubt, by securing the few essential conditions which nature furnishes in the mother's womb. These conditions are a uniform temperature of about 98.6° and a circulating fluid containing and supplying oxygen and nutritive ingredients to nourish the child's developing cells, which fluid, while circulating, takes up and removes from the blood of the fetus the waste matters from its cells. In this way a mass of cells from a chick's heart, placed in a receptacle, has been kept alive and growing for twenty years.

For the development of a child in nature's way a placenta—an intermed-

iate organ—has to be formed to bring about transfer of the nutritive ingredients of the circulating fluid (the mother's blood) into the body of the child and to excrete its waste products. It is an inherent function of a fertilized ovum to form a placenta on the surface where it may be lodged whether that be in the uterus or outside of it, in a Fallopian tube or on some organ in the abdominal cavity, if it happens to get there, as it sometimes does.

Inside an artificial uterus the ovum would still possess its inherent capacity to form a placenta by the villi of its chorion inserting themselves into the substance contacted with, and if a suitable substance for that, like a sponge or gauze pad, be supplied in the artificial uterus for the ovum to rest on with the nutritive fluid circulating through or about it, simulating the blood flow in a real uterus, a placenta would probably be formed there that would function until the child was developed to the stage where it could be removed—artificially born—and then breast or bottle nourished.

When the success of this method of extrauterine child development is demonstrated on the lower animals, it will be time to try it in the development of humans. Its advantage would be that from one of the removed and carefully protected ovaries of a mentally superior female hundreds of superior children might be produced in incubating rooms by selective fertilization of each individual ovum as it ripens and is discharged monthly from the ovary for a period of thirty or more years.

Perhaps we will ultimately be driven to this way as an eugenic means to beat the rapid increase of feeble-minded and other socially-unfit people who are breeding intelligence and the qualities of good citizenship out of the race and threatening to swamp us before long in a sea of mental and moral degeneracy.—*The Medical World*.

The Self-Disinfecting Power of the Skin

BACTERIA die rapidly when smeared upon the unbroken surface of the skin. Arnold (in 1930) showed that reductions in the number of the bacteria of ninety to one hundred per cent could be effected in from ten to thirty minutes. It was also demonstrated that the condition of the skin caused marked changes in the rate of reduction, a clean skin causing a more rapid destruction of bacteria than a dirty skin.

Recent experiments (reported in the *Journal of Laboratory and Clinical Medicine*) have been carried on at the the Michigan State College by Drs.

Bryan and Mallmann, to find out if the living skin has an inherent germicidal power. For convenience, the back of the hand was used for the skin tests. At the same time, bacteria were smeared upon glass and other surfaces kept at the same temperature as the hand, in order to determine if the bactericidal action was due merely to the drying up of the bacteria when spread upon an exposed surface.

Their conclusions were that although dessication, or drying up, does have an important role in the destruction of bacteria, there is also in living skin an inherent power to destroy bacteria implanted upon the surface.

It had been previously demonstrated by Walker and Pryer that water irradiated with ultraviolet light had imparted to it a germicidal power that remained for several hours. An attempt was made to see if such remaining germicidal power could be produced in the skin. After being tested for self-disinfecting power, the hands of three individuals were irradiated for one minute with ultra-violet light. Five minutes afterwards, these hands were tested for disinfecting power. It was found that whereas before the exposure to the ultra-violet light only eighty-five to eighty-nine per cent of the bacteria were destroyed at the end of fifteen minutes, after the exposure they were all destroyed at the end of ten minutes.

It was then determined to find out if the effect of the ultra-violet light was merely local or if it was systemic, increasing the disinfecting power of the whole body. One hand was irradiated and the other protected against exposure. It was found that the skin

of the hand not irradiated also had increased disinfecting power, though not to the extent of the irradiated hand.

The value of sunlight was then

tested, the hand being exposed to the sun for fifteen minutes. The results were similar to those obtained with the ultra-violet light.—*Good Health*, (U. S. A.)

Frail Mother of Six Gives Birth to Five

We quote from the *New York Times* of 28th May '34:—

Five baby girls, the largest weighing three pounds and four ounces and the smallest a pound less, were born to-day (28th May 1934) to Mrs. Oliva Dionne

of the family, the oldest, Ernest, being 7. One other child of the couple, who were married in September, 1925, died.

'Well, do you feel proud of yourself?' the father was asked.

'I'm the kind of fellow they should



Mrs. Oliva Dionne of Callander, Ontario, Canada, who gave birth to quintuplets.

in her farm home two miles from here.

Visitors found the 24-year-old mother and the babies in good condition and the father, seven years older than his wife, busy at his chores.

There are five other children in

put in jail,' he answered.

The father was torn between pleasure at the unexpectedly large addition to his family and the thought of the financial burden. He said he is going to do the best he can, but stressed the fact that he is not exactly built for

hard work, being 5 feet 8 inches tall and weighing only 130 pounds. His wife is slightly smaller.

None of the Dionne children goes to school yet, but the parents have been giving them instruction at home.

Mrs. Ben Lebell attended the mother at birth and reported all five girls were born between 4.30 and 5 a.m. Three of them arrived before the doctor did, she said.

* * * *

Dr. F. C. Routley, general secretary of the Canadian Medical Association, said to-day that the birth of five daughters to Mrs. Oliva Dionne, near Callander, Ont., is the first quintuple birth in Canada so far as he knows.

Birth of five children at once, such as occurred to-day at Corbeil, Ont., is so rare, medical historians said here, that only thirty cases have been recorded in the last 500 years.

Dr. Morris Fishbein, editor of *The Journal of the American Medical Association*, added that in none of the cases on record have all the children lived more than fifty minutes.

'If the five girls born to Mrs. Oliva Dionne live longer than an hour or so,' said Dr. Fishbein, 'then it is truly a rare and noteworthy event.'

There are only six cases of sextuple births on record, he continued.—*Birth Control News*.

Health Tit-Bits

Commercial Utility of Rice Oil.—The possibilities of utilizing Rice Oil as a substitute for cod-liver oil and in the preparation of vegetable butter are indicated below.

Rice Oil contains the fat-soluble vitamins A and E: and, when irradiated, vitamin D is developed in the oil. Should the vitamin D content of rice oil be increased, with sufficient irradiation, to that of cod-liver oil then the rice oil may become an important nutritive substance. Possibly it could be used as a substitute for cod-liver oil. Rice oil has a bland, fatty taste and in this respect the oil is certainly more agreeable to take than cod-liver oil.

In the United States the use of vegetable oils, particularly coconut oil, in making margarine has increased very

considerably in recent years. According to Snodgrass:—

Since the war, the vegetable fats and in particular, coconut oil have continued to grow in popularity in U. S. A. until now the ratio of animal to vegetable fats used in margarine is almost the reverse of what it was before the war. Approximately 60 per cent of the ingredients are now of vegetable origin, and only 40 per cent animal fats. Coconut oil is by far the most important single ingredient. In 1925-26 more of it was used than of all the animal fats together and over a period of several years it has been more important than olive oil and neutral lard combined. The only other vegetable fat used in appreciable quantities is cottonseed oil.

Coconut oil does not contain the fat-soluble vitamins A, D, and E. Since rice oil contains the fat-soluble vitamins A and E, it might serve as an important product for use in the margarine industry as the rice oil would supply the vitamins which are not contained in the coconut oil. Mixtures of coconut and rice oils should make a margarine more like natural butter than when coconut oil alone is used.

In producing rice oil for commercial purposes either bran fresh from the polisher may be used or, bran which has been heated and properly preserved. The rice oil may be extracted from the bran by means of hot coconut oil. The rice oil may also be produced by expressing mixtures of rice bran and expeller copra cake or by expressing the rice bran alone.—*Scientific Indian*.

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Poisonous Effects of Salt:—An experiment conducted at the Agricultural College of Oklahoma (Heller) has clearly demonstrated the toxic properties of weak solutions of salt, which have heretofore been regarded as harmless. The so-called normal solution, containing .9 per cent. or 9 parts in 1,000 of water, has been by many regarded as entirely innocuous. Some authorities have even recommended the drinking of a quart of salt solution every morning as a laxative.

The Oklahoma investigator employed salt solutions of different degrees of concentration, varying from .5 per cent. to 4 per cent. He found that young rats were killed by 1½ per cent solutions. Examination showed the intestinal walls inflamed and covered with hæmorrhagic blotches. It was

found that the effects were worse when sulphates were added to the solution.

These observations agree with those reported by von Noorden, who called attention many years ago to the fact that the habitual use of saline mineral waters gives rise to colitis. In view of these observations, the use of salt solutions, even though weaker than those ordinarily employed, must be regarded as injurious and to be strongly condemned.—*Good Health, U. S. A.*

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Menace to Public Health.—An “alarm-ing menace to public health” from the presence in the city streets of a “vast army of mendicants” was reported by the Welfare Council of New York City.

Disease, frequently in acute and highly communicable stages, chronic alcoholism and narcotic addiction are rampant and a highly developed system of social parasitism has been revealed, according to Walter D. Wile, chairman of a committee of the council.

In an investigation of 370 beggars brought before Magistrate Jonah J. Goldstein in night court during the last three weeks, the committee found 150 were suffering from diseases, 110 were chronic alcoholics and 25 were narcotic addicts.

In making public his report, Mr. Wile renewed a plea to the public to put an end to street begging by refusing money to beggars. They should be referred to existing agencies of relief, he said.

Nearly 25 per cent of the mendicants had been in this city for less than a year, Mr. Wile said. They

told the magistrate that they had come here because they had been told it was easy to beg a living on the streets of New York.

One man had more than \$25 which he told the magistrate was the "takings" of begging for two days. Another man sent to the municipal lodging house for the night was found to have more than \$1,100 in cash in his clothing.

A large number of the men were habitual mendicants who had been arrested ten or more times. One aged man had a record of fifty-six arrests for vagrancy.

One beggar, 63 years old, asked the magistrate for permission to continue begging until he was old enough to apply for an old-age pension. He said he had come to this country from Ireland in 1891, and had been begging for a living ever since. Another man of 60 said he had been a dock-worker in his youth, but had found begging easier than work.—*The Medical World*.

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Sugar from Water.—Prof. E. C. C. Bayly of the Liverpool University claims to have discovered the secret of the process whereby plants convert into sugar the water drawn from soil. By emulating the method of the plants he has succeeded in manufacturing a quantity of sugar from water.—*Indian Views*.

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The Doctor:—A famous doctor came to the court of an Eastern prince. On his arrival, he asked, "How do you manage to live here?"

"We do not eat until we are hungry," was the reply, "and we eat no more than is enough."

"Oh, is that it?" said the doctor. "Then I will go my way at once, for here I shall find nothing to do"—*Selected*.
—*The Treasure Chest*.

* * *

Removal of Larynx.—Ten years ago, when a surgeon removed his larynx, John T. Bowers of Chicago, was told that he would probably never speak again. For a year he was silent. Then by persistent use of his stomach muscles he began to make guttural sounds that only his wife could understand. Now Mr. Bowers has completely overcome his handicap and earns a living as a salesman. Triumph of mind over matter.—*The Sunday Chronicle*.

* * *

Painless Motherhood.—*Liverpool Doctor's Invention*—According to the sponsors of a new British invention, painless childbirth has become an accomplished fact. They claim that it will rank among the greatest discoveries by which pain and misery, always considered to be an essential part of motherhood, can be eliminated without harm to either the mother or child.

The new method, invented by a Liverpool doctor, has been tried on a large number of cases at a hospital in London. Of one hundred cases tried, 58 women felt no pain whatsoever, 40 found great relief and the remaining two were given some relief.

A writer dealing with this new invention in a London paper, says that it is based on an entirely new idea, for the anaesthetic is self-administered, the patient herself controlling the action. The apparatus consists of a mouth-piece connected to a source of gas which is mixed with twice the amount of air. On the face mask is fitted a

spring "trigger" which has to be kept pressed down to allow the gas mixture to pass. Directly it is released, gas is shut off and ordinary air alone is released.

Harmless and fool-proof—He goes on to say: "In practice the patient is given control of this mouthpiece directly she asks for relief, and is told to press the trigger and inhale. Within a few seconds enough gas is inhaled to produce drowsiness and complete relief.

It is added that the most important point is that complete unconsciousness—which is dreaded by many people and often causes the refusal of any sort of anæsthesia—is never reached. Directly sufficient relief is obtained the patient herself automatically shuts off the gas by relaxing her grip on the trigger. Thus, it is affirmed, the invention is free from danger and absolutely foolproof.

Opponents of anæsthesia during child-birth have always previously based their attacks on the fact that many anæsthetics, leading to full un-

consciousness, are dangerous to both mother and child and frequently prolong the period of labour. It is declared that experiments show that this method of self-administered nitrous-oxide and air does not have these effects, but that, on the contrary, natural forces appear to be increased.

Other claims are that sickness is almost abolished. The patient is naturally not nearly so worn out by her ordeal, and frequently remembers nothing at all about the birth on the following day.

It is pointed out that since the machine itself is so simple, it could, if regulations permit, be used in the home by any midwife with slight training. This is an advantage of great importance. At present, I am told, 60 per cent of births in England take place at home under the supervision of midwives. The supply of skilled anæsthetists, necessary for ordinary anæsthesia, is limited.

Already most of the main London hospitals have ordered one or more machines.—*The Hindu*.

Book Reviews

Residential Buildings suited to India:—By *R. S. Deshpande*, B.E., A.M.I.E. (IND), Bombay, First Edition-1931, Price, Rs. 6/-Pages 295.

This book has come at an opportune moment and will certainly prove an eye-opener to the numerous builders of houses in India with whom sanitary and climatic considerations have not sufficiently weighed hitherto. The author has taken considerable pains to draw designs for all, from the humblest cottage dweller to the highest prince and that, economically too, and the book therefore deserves to be in the hands of every individual who wishes to have a house of his own and of every local

and municipal body which has to regulate building construction.

The Art of Living:—By *George S. Foster*, M.D., Published by the Christopher Publishing House, Boston, U. S. A. Price \$ 2.50. net.

In this book, the daily routine of life has been expressed in a narrative form and the reader is not disgusted but is rather delighted to go through every page of it and digest its contents. The style is lucid, the get-up and printing excellent and every health-seeker and health administrator will, we are sure, be profited by the health principles enunciated therein,