

THE YEAR BOOK *of*
OBSTETRICS
and
GYNECOLOGY
1973

THE YEAR BOOK of OBSTETRICS and GYNECOLOGY 1973

EDITED BY

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INTRODUCTION

During the past few years scientists have been experimenting with "genetic engineering" not only in animals but also in man, particularly the fertilization and development of a fertilized ovum in vitro. P. C. Steptoe and R. G. Edwards have been pioneers in this field as it concerns human beings (see the 1971 YEAR BOOK, p. 10).

When I was in London last October I asked Steptoe to write a special article for the 1973 YEAR BOOK in answer to Paul Ramsey and others who bitterly condemn genetic engineering. Steptoe told me there was no need for him to defend his position.

Paul Ramsey, Ph.D. (Harrington Spear Paine, Professor of Religion, Princeton Univ.), wrote a two-part article entitled "Shall We 'Reproduce'?" (J.A.M.A. 220:1346, 1480, 1972). Part I is entitled "The Medical Ethics of In Vitro Fertilization." Part II is entitled "Rejoinders and Future Forecast." In Part I the author sets forth the ethical objections against in vitro fertilization and embryo transplantation which can be drawn from applying to these experiments the received standards of medical ethics. He says that unless the ethics of the medical research profession is to be radically revised or abandoned we ought not to manipulate at risk the child-to-be. In the second part Ramsey takes up certain answers to his argument. He concludes that from the nature of these rejoinders we can clearly see the extent to which human procreation has already been replaced by the idea of "manufacturing" our progeny. Unless and until *that* concept is reversed, mankind's movement toward Aldous Huxley's hatcheries must surely prove irreversible.

I should like to quote a few statements from this provocative essay:

"I must judge that in vitro fertilization constitutes unethical medical experimentation on possible future human beings, and therefore it is subject to absolute moral prohibition. I ask that my exact language be noted: I said, unethical experimentation on possible future human beings. By this, I mean the child-to-be, the 'successful' experiments when they come.

"My point as an ethicist is that none of these researchers can *exclude* the possibility that they will do irreparable damage to the child-to-be. And my conclusion is that they cannot morally proceed to their first ostensibly successful achievement of the results they seek, since they cannot assuredly preclude all damage.

"However much these experimental embryologists may have mimicked nature perfectly, they cannot guarantee that the last artificial procedure they carry out before implantation (or know they cannot carry through such as karyotyping, which Dr. Steptoe cited when he erroneously spoke of 'bravery') may be the important one. The last procedure may induce damage (or the last procedure known to be possibly damaging may not be able to be used although it might detect damage induced by previous procedures).

"In short, if in vitro fertilization scientists appeal to intrauterine monitoring as an 'out' after what they may have done by their last procedure (which by definition could not at that point be monitored),

they may only be adding possible damage to possible damage that cannot be excluded and which may be brought upon a possible future human being whom they thus dare to initiate.

"...it is worth calling attention to the fact that a negative moral verdict against in vitro fertilization need invoke no other standards of judgment than *the received principles of medical ethics*. I have appealed to no religious and to no other ethical criteria. Either the accepted principles of medical ethics must give way, or fabricated babies should not be ventured.

"Edwards and Sharpe (Nature 231:87-91, 1971) say that while the physical health of the parents does not demand that their infertility be cured, still infertility seems to be a clinical defect to be remedied if possible by medical attention. Is the 'clinical defect' of infertility remedied by in vitro fertilization? I should say not! Instead, the child as a product of technology is to be brought forth, without remedying the woman's infertility. She remains as infertile as before. No wonder, then, that the chief concern about the child is whether as a product more damage from his natural genesis may be removed than may be caused by producing him in this way. If infertility is a 'clinical defect' which should be remedied, that would seem to call for reconstructive surgery on the oviducts, from which 30% to 50% success has been reported. Therapy is applied directly to the defect needing remedy. The woman is made fertile, and she in her marriage transmits life to her child.

"By contrast, in vitro fertilization is arguably *not a medical procedure*. It concentrates on the 'product', not on a medical condition which itself can be cured, if at all, only in the only actual patient. . . . To construe this procedure as a practice of medicine, we have to construe medicine to be devoted to the satisfaction of desires. . . . In my opinion, medical practice loses its way into an entirely different human activity—manufacture (which most wants to satisfy desires)—if it undertakes either to produce a child without curing infertility as a condition or to produce simply the desired sort of child.

"A significant move toward in vitro fertilization and all the rest was made when first we began to use a manufacturing term—'reproduction'—for procreation, human parenthood and transmission of life through life by the generating generations of mankind. Scientists working in the field of 'reproductive biology' have now drawn not improper conclusions from the linguistic mistake.

"The wounds we have inflicted upon natural objects for lack of a proper sense of the natural environment are becoming clear to us—the lashes and the ecological backlash. Aristotle's view that all things in nature 'have certain works and courses of action' has enough amplitude to be helpful as we search for a sense of man as a natural object too. Procreation, parenthood, is certainly one of those 'courses of action' natural to man, which cannot without violation be disassembled and put together again—any more than we have the wisdom or the right impiously to destroy the environment of which we are a part rather than working according to its lineaments, according to the functions we discover to be the case in the whole assemblage of natural objects.

"So today we have the oddity that men are preparing to play God over the human species while many among us are denying themselves that role over other species in nature. There is a renewed sense of the sacredness of groves, of the fact that air and streams should not be violated. At the same time, there is no abatement of acceptance of the view that human parenthood can be taken apart and reassembled in Oxford, New York and Washington D.C."

L. R. Kass (New England J. Med. 285:1174, 1971) wrote a most provocative paper entitled "Babies By Means of In Vitro Fertilization: Unethical Experiments on the Unborn?" He said the use of in vitro fertilization to initiate a new human life involves the necessary and deliberate manipulation of a human embryo, conceived and nurtured, at least for a time, in an artificial environment. Serious questions can be raised about the safety of the manipulations and of the environment and, hence, about the "normality" of any child whose conception and early development were subject to such manipulation. The moral question is this: Does the parents' desire for a child (or the obstetrician's desire to help them) entitle them to have it by methods that deliberately impose upon that child an unknown and untested risk of deformity or malformation? The risks are unknown. The ability to produce normal young regularly by this method in monkeys is a minimum prerequisite for use of the procedure in humans. But, even after normal young are produced in monkeys, we could not be certain that normal young would be produced in humans. There is at present no way of finding out in advance whether or not the viable progeny of the procedures of in vitro fertilization, culture and transfer of human embryos will be deformed, sterile or retarded. The problem of risks and mishaps that accompany the experimental phase of this new technology provides a powerful moral objection sufficient to rebut the proposed implantation experiments. This moral objection should be widely shared, for it rests upon that minimal principle of medical practice, do no harm. When the subject-at-risk cannot give consent, the presumption should be abstention. The first attempt to produce a live baby with in vitro fertilization will most probably be described as serving a therapeutic purpose for the parents, namely the treatment of their infertility. But infertility is not a disease in the usual sense, although it can be a symptom of disease. If it is any kind of disease, it is a "social disease." Just as infertility is not a disease, so providing a child by artificial means to a woman with blocked oviducts is not treatment (as surgical reconstruction of her oviducts would be). She remains as infertile as before. What is being "treated" is her desire—a perfectly normal and unobjectionable desire—to bear a child. Most of the scientific reports on human-embryo experimentation are strangely silent on the nature of the egg donors, on their understanding of what was to be done with their eggs and on the manner of obtaining their consent. This silence is surprising in view of the growing sensitivity of the medical and scientific communities to the requirement of informed consent, and especially surprising given the kind of experiments here being performed. It is altogether too easy to exploit, even unwittingly, the desires of a childless couple. Kass suggests

the following specific steps: The first would be a profession-wide, self-imposed moratorium on attempts to produce new children by means of in vitro fertilization and embryo transfer (and by other new procedures), at least until such time as the safety of the procedures can be assessed and assured. The second would be initiation of critical, prospective studies in primates and other mammals to assess the "normality" of the young produced by artificial means. The third would be establishment of intraprofessional bodies and forums to discuss and to evaluate critically work in mammalian and especially in human reproduction. Reports by such responsible professional groups could help to prevent the creation of inflated hopes and fears. The work described is a giant step toward the full laboratory control of human reproduction. Should not the weighing of ethical and social considerations concerning both the widespread use and subsequent uses of the new technology enter into the decision to apply it for the first time? Kass makes the following proposals: Initiation of interdisciplinary discussion, both in and out of the government, of the desirability of introducing the new technologies, and of the means for anticipating and minimizing the undesirable social consequences, if they are introduced. Co-operation with lawyers, legislators, theologians, philosophers, humanists, social scientists and laymen in establishing ethical guidelines for the use of reproduction technology, and in providing for the proper legal safeguards for experimental subjects, including unborn children. Convocation of international groups to consider desirable, necessary and feasible means of preventing follies and evils committed in the name of international competition. Scientists and physicians have a growing responsibility to the broader community to which we belong, the human race and especially to each human being upon whom we exercise our power.

A writer (J.A.M.A. 220:721, 1972) in an editorial on "Genetic Engineering in Man: Ethical Considerations" says that physicians, scientists, philosophers and theologians are astir with thoughts and pronouncements on genetic engineering, especially the growth of a fertilized ovum in vitro (already achieved) and with cloning (substitution of the nucleus of a cell from another being for the nucleus of an unfertilized egg of a being of the same species). The first, the "test tube baby," implies the possibility that the conceptus at some stage in development might be implanted into the uterus of a woman otherwise unable to conceive and deliver a child. Cloning already shown to be successful in frogs, if applied to humans, could "result in the development of individuals... identical to whatever donor individuals had been chosen: boys genetically exactly like the father, girls like their mother or individuals like some true or false hero of art, science, or sports, or like some demagogue, or some saint." Although Fletcher defends the propriety of cloning, he also strongly believes that in vitro production of a human conceptus is fully justified for the purpose of fulfilling an infertile woman's desire to deliver her own child. Kass disagrees. In a symposium sponsored by the Kennedy Foundation on the subject "Human Rights, Retardation and Research," Ramsey was most forceful in his condemnation of in vitro fertilization. The time seems clearly at hand to declare a moratorium on

experiments that would attempt to implant an in vitro conceptus into a woman's uterus. Representatives of various disciplines should be assembled to discuss again the thorny issues raised by the genetic engineers.

Kal (J.A.M.A. 221:1409, 1972) says that rigidly following Ramsey's first argument, we could never perform any medical procedure on any child who, not only legally but in psychologic reality, cannot give a truly informed consent. Nor could we administer medication to any pregnant woman, or any person of childbearing age (or younger), for we could never be certain of not causing genetic damage to the unborn. In fact, we would have to outlaw sexual procreation as well, for there too the outcome is uncertain, and no unborn child could be asked if he wishes to accept the accidents of either his future socioeconomic environment or the meiotic roulette of his parents' chromosomes. The naturalness of sexual procreation does not remove our responsibility. It is as freely engaged in as the mixing of the ingredients in a test tube. And if parents and *in loco parentis* courts can be permitted to give consent in behalf of minors who already exist, perhaps similar rights could be granted *a fortiori* concerning persons who don't yet exist. As to the second argument alleging dehumanization of procreation by in vitro methods Kal agrees that man is a unique spiritual-material being, and the ideal completeness of human procreation demands intimate personal involvement, mentally and physically. But of the two composing principles, it is the spiritual that renders man specifically different from animals and machines. Adoptive parenthood (not to speak of the celibate spiritual fatherhood so consistently upheld by some Western religions) is no less noble nor human than plain physical copulation. The humanness of the process and the product depends less on whether the chemical ingredients get mixed in the test tube or fallopian tube, and more on the capability of the product to have (at least potentially) a rational human self-consciousness, and the possibility of an "I-thou" relationship between the producers and the product. It is man's duty not to deface nature; but to think, to dream, to experiment, and to change is of man's very nature. By simply refraining from doing so he may avoid some risks, he may preserve the bald eagle, but ultimately he will not develop. Perhaps we should not ask "shall we reproduce?" but "shall we do it heedlessly or responsibly—as if playing with toys or as dealing with persons—and who shall control it: individual libido, chromosomal roulette, Big Brother, Drs. Frankenstein and company, or who?" God (or whatever else you may believe in) help us!

Mazur, Leibo, and Whittingham (Med. World News, p. 57, Nov. 10, 1972) successfully removed mice embryos from their mothers, froze them, and, after thawing, transplanted them into foster mothers, where the embryos developed into living, healthy offspring. The researchers started out by injecting gonadotropins into female mice to get them to superovulate. Then, after mating the animals, they removed the fertilized ova at various stages of development ranging from two to eight cells and subjected them to deep freezing. They froze close to 3,000 embryos. After being thawed, 360 of the embryos were directly implanted into

foster mothers, and 2,500 were cultured 2 to 4 days mainly to see how many had survived. The investigators used 118 foster mothers; each received 6 to 8 embryos. Some 1,800 of the cultured embryos turned out to be alive. The number of 'takes' was the same as would be expected if they had been transplanted without freezing. Once the pregnancies started they continued as though they were the products of natural conception. The scientists permitted 57 of the fetuses to be born spontaneously. However 210 were removed surgically 3 days before delivery in order to subject the animals to intensive laboratory analysis. No difference between these mice and those normally conceived was found. The authors draw the line at commenting on any use of the study in humans. That, they say, is out of their province.

Step toe and Edwards (Ob. Gyn. News 7:1, 1972) said at a meeting of the British Medical Association that far from being a breach of ethics, it would be an abrogation of medical responsibility not to attempt in vitro fertilization and embryo implantation for infertile women with tubular defects. Approximately 3% of the couples are infertile as a result of tubal occlusion, so many thousands could be helped through in vitro fertilization and embryo implantation. In over 3,000 laparoscopies performed for this purpose, the morbidity has been less than 2%. The embryo can exist in vitro for a maximum of 3 days, possibly less. A successful implantation will be carried out through the cervix and will be a minor physical procedure performed without anesthesia. This procedure is the only alternative when tubal occlusion prevents conception and tubal surgery is unsuccessful or cannot be applied with a reasonable hope of success.

In the foregoing pages I have included data from opponents of genetic engineering. I leave it to the reader to decide for himself how he feels about this matter which involves experimental science, embryology, morality, ethics, religion, the law and other disciplines.

J.P.G.

PRESIDENTIAL AND OTHER ADDRESSES

Page (Am. J. Obst. & Gynec. 113:433, 1972) presented the Presidential Address before the Pacific Coast Obstetrical and Gynecological Society. His subject was "The Clinician as a Scientist." Page gives several reasons why a physician's mind is superior to a diagnostic computer, despite the fact that the machine is speedier, has total recall and is completely accurate in its calculations. In preparing a machine, the programmer tries to eliminate information that apparently is not pertinent to the program at hand. The mind of man, however, must inescapably record and store literally millions of observations that are seemingly unrelated to the conduct of his profession—facts our medical students now like to call irrelevant. The story of medicine is replete with examples of how apparently useless bits of information have led to innovative solutions. Page offered a few random examples which illustrate the application of science to human problems, the value of serendipity and the unhappy fact that any change from traditional indoctrination is likely to meet with resistance. There are other reasons why the physician's mind is superior to the best-programmed computer: the establishment of a patient's confidence in you, the healer of illnesses; the compassionate understanding of her anxieties or grief; the use of the semantic richness of our language to comfort her; and the timely use of nonverbal communication. Such intuitive things as these constitute the art of medicine, in which the computer is a complete failure. Science, on the other hand, is simply a method of approaching the truth. As a method, it has no loyalty to people or to institutions, traditions, theories or authority. The practice of obstetrics and gynecology, like all fields of medicine, is an indivisible mix of both art and science; to advance these skills "the equipment a clinician most needs is to improve himself." That which makes any research activity basic is the basic importance of the question, and that which makes it science is how accurately the question is posed and how well the work is designed, carried out and analyzed. Whatever the merits of research may be in the etiology and pathogenesis of disease, the domain of diagnosis, prognosis and therapy certainly belongs to the clinician, because he alone has the necessary skills and experience for such pursuits. One of the problems that we have is our difficulty sometimes in defining disease. A diagnosis that does not explain the illness may be worse than useless because it may lead one to a form of therapy, such as a surgical operation, that may only increase the patient's biosocial disadvantage. It is the repetitive recall of our accumulated experience with illnesses similar to the one under observation that tells us what the natural course of events will be in the immediate and in the more remote future, and this we call prognosis. The next step in our mental processing is to decide whether we can alter the course of events favorably by instituting some form of therapy—medical, surgical or other. The next step is to decide whether the potential hazards of our proposed therapy are greater than the hazards of doing nothing. During the past decade, computers have been introduced into the practice of medicine for the purposes of differential diagnosis, the interpretation

of psychologic tests, data retrieval, the production of medical records, the analysis of electrocardiograms, the management of critically ill patients, the planning of menus and special diets and the improvement of clinical judgment by multivariant analysis technics. The basic elements of a computer are grouped into five units; input, storage, control, processing and output. The addition of science to our daily practice requires a continuing education, a constant refurbishing of our informational stores and the improvement of clinical judgment by the integration of knowledge pertaining to the clinical experience of others. There is no such thing as a standard therapy for a given illness; there is no standard pregnancy; there is no standard woman. There are only high standards, and it is up to us as clinical scientists to buttress these as a guiding star.

Mary P. John (J. Obst. & Gynaec. India 22:487, 1972) gave the 5th Subodh Mitra Memorial Lecture. Her subject was "Notable Advances in Obstetrics in the Last 40 Years." She discussed antenatal care, diagnosis of pregnancy, placenta praevia, operative obstetrics, induction of labor and isoimmunization in pregnancy.

Another new journal is *Gynécologie Obstétrique et Biologie de la Reproduction*, which replaces two former French journals, *Gynécologie et Obstétrique* and *Bulletin de la Fédération des sociétés de gynécologie et d'obstétrique de langue française*. The editor is Claudeureau. Best wishes for success of the new journal.

Guttmacher (J. Reproductive Med. 8:159, 1972) presented the Guest of Honor Address at the 3d Annual Meeting of the Family Planning Association of the Americas. His subject was "Progress and Failure in Population Control." He said the world population in 1969 was about 3,500,000,000 people but in 1930, just 40 years before, it was only 2,000,000,000. At the end of the decade it may be between 5,500,000,000 and 7,000,000,000. Perhaps the most optimistic feature in the population control is the increasing awareness of the problem; 75% of the governments of the less-developed countries are in favor of some form of population control. Also there is a marked increase in biomedical and social research. Guttmacher pointed out that when one has increasing economic security there is no longer the need for several children to furnish old age security. If one is attempting to establish population control, there are only four mechanisms available: advancing the age of marriage to give couples a lesser time to cohabit; contraception; abortion, with over half the world living in emancipation from the rigors of punitive abortion laws; and sterilization, which is unequally practiced.

Sir John Peel (J. Obst. & Gynaec. Brit. Commonwealth 79:385, 1972) delivered the William Meredith Fletcher Shaw Memorial Lecture, the subject of which was "A Historical Review of Diabetes and Pregnancy." This is a fascinating history of diabetes in pregnancy. For the 12th British Congress of Obstetrics and Gynaecology, Peel and associates collected such data as were available from the leading teaching hospitals in Great Britain and Ireland for a 7-year period. From 26 teaching hospitals, 458 pregnancies were recorded, an average of less than 3 cases each year. A trial of hormone therapy was carried out under the guidance of

the Medical Research Council, and the results were published in 1955. The conclusion of that trial was that "stilbestrol and ethisterone in the doses here prescribed do not reduce infant mortality in diabetic patients and have little if any beneficial effects on maternal health in pregnancy." From then on hormone therapy has lost its popularity. Because little improvement was made in perinatal mortality in 4 years, in 1958 it was decided to adopt the policy of hospitalizing all patients at 32 weeks' gestation or earlier in the presence of complications. It was from that point that the perinatal mortality began to fall so that within the last few years perinatal mortality has fluctuated between 4 and 7%, a great improvement over the 33% with which the study started. Newer types of insulin, particularly long-acting ones, have been of great advantage in the treatment of these cases. Estriol assays, placental lactogen measurements and observations of fetal growth by ultrasound are all valuable additions to the routine clinical observation of the progress of the fetus. Intensive care of the fetus during labor and also during the neonatal period have contributed greatly to further reduction in perinatal mortality. Diabetes is increasing rapidly in our affluent societies. More satisfactory registration, better methods of diagnosis, improvements in treatment both of diabetes itself and its complications, and increased longevity have all contributed to the steadily rising incidence. Over-indulgence, especially in middle age, in the good things of life is also contributing to maturity-onset diabetes. But improved reproductive efficiency must also be a contributory factor. Pregnancy and obesity are great revealers of diabetes.

Hotchkiss (Bull. New York Acad. Med. 48:525, 1972) gave the 10th Ferdinand C. Valentine Memorial Lecture. His subject was "The Role of the Urologist in Infertile Marriage." In closing he appealed to the younger urologists to become interested in the study of reproduction. The area possesses new technics that will open doors to new scientific adventures; the field is relatively uncrowded and it is ready for further important human applications. Association with a basic scientist is highly desirable, for such persons supply mutual needs and stimulation and furnish the ultimate opportunity for human interests and application.

A. S. Duncan (J. Obst. & Gynaec. Brit. Commonwealth 79:193, 1972) delivered the 11th J. Y. Simpson Oration before the Royal College of Obstetricians and Gynaecologists. His subject was "Medical Education through the Eyes of James Young Simpson." This is a very erudite paper well worth reading.

Das (J. Obst. & Gynaec. India 22:105, 1972) presented the Presidential Address before the 16th All India Obstetrics and Gynaecological Congress. Das said there are now 32 societies in India with a total membership of more than 1,600. The maternal mortality in India still continues to be higher than in many countries, particularly the advanced ones. Many factors operate for this high mortality rate, among them the poor nutritional state of the mothers, the widespread protein deficiency in the Indian diet, tropical diseases and inadequate antenatal supervision. A new factor, despite our best attempts, will be added in the near future, namely, abortion. Most gynecologists are of the opinion, with which

Das concurs, that abortion should be done only once in a lifetime. Ideally, it should not be resorted to until the second or the third child is born. It then should be followed by sterilization of the wife or the husband. Thus, there will be no need for repeated abortions. The intrauterine device is not the most effective contraceptive nor is it free from minor or major complications. As a result, it is losing much of its popularity. This is well reflected in the census report. In 1965-66, 812,713 intrauterine devices were inserted in India. Next year the figure went up to 909,726. From then onward, there has been a steady fall to 136,464 in 1969-70. During the corresponding years there was a rise in both sterilization operations and use of conventional contraceptives. In the opinion of Das, sterilization should be considered for a couple who is experiencing difficulties with existing methods of contraception. The decision as to who should be sterilized in these circumstances depends on the attitude of the individual couple and is best left to them.

Krishna Menon (ibid. 23:1, 1972) delivered the Guest Lecture before the 16th All India Obstetrics and Gynaecological Congress. His subject was "Education and Training in Obstetrics and Gynecology." His aim was to draw attention again and again to the necessity of treating obstetrics and gynecology as a semisocial discipline and not as an isolated one. If that view is accepted, it stands to reason that there is need for a total change in the pattern of training students. There are enough indications on the horizon which tell us that the future of obstetrics and gynecology is not cesarean sections and radical hysterectomies but biology of human reproduction.

Gardiner presented the President's Inaugural Address before The American College of Obstetricians and Gynecologists (Obst. & Gynec. 40:461, 1972). His title was "The American College of Obstetricians and Gynecologists - 1972." He said the American College of Obstetricians and Gynecologists (originally called the Academy) was incorporated in 1951 to "...establish and maintain the highest possible standards of obstetric and gynecologic education...practice and research..." The sound foundation on which it was established and its subsequent growth and accomplishments have justified the College's peer acceptance by other medical organizations. Today there are current needs in the delivery of obstetric and gynecologic care that are of great concern to the College: (1) the need for an increased number of well-trained obstetric and gynecologic physicians, nurses and other health personnel and the development of efficient obstetric-gynecologic health care teams to improve the availability and continuity of obstetric and gynecologic care for all women; (2) the need to solve problems of maldistribution of available obstetric-gynecologic professional personnel; (3) the need for evaluating and, where appropriate, implementing regionalized-centralized obstetric-gynecologic hospital facilities and, at the same time, establishing centers, with necessary communication and transport systems, for the care of high-risk pregnancies and high-risk newborns; (4) the need to develop standards of quality obstetric and gynecologic care to be used as guidelines by comprehensive health planning councils, regional medical programs, foundations for medical care, health main-

tenance organizations, peer review organizations and state and federal agencies; and (5) the need to redirect and revitalize our present system of delivering comprehensive obstetric and gynecologic care to curb rising costs and to assure that financially sound and equitable forms of health insurance coverage are available for obstetric and gynecologic care for all women.

Dillon (*Fertil. & Steril.* 23:371, 1972) gave the Presidential Address before the American Fertility Society. His subject was "The State Of The Society."

T. Mann (*ibid.* 23:699, 1972) presented the Ayerst Lecture at the meeting of the American Fertility Society. Concerning artificial insemination versus artificial inoovulation, he said the following. The impact which fundamental laboratory research on male fertility has on practical problems is best exemplified by the remarkable success of deep-freezing technics for mammalian semen, and the fact that some of the bovine semen now being used for artificial insemination has been in cold storage for over 20 years. The methods of processing semen for artificial insemination in animals other than bulls and in man are also steadily improving. Parallel with these advances, there has also been considerable progress in storage of mammalian eggs and in vitro maintenance of embryos. As a practical off-shoot of these researches, egg transfer, or as we now call it, "artificial inoovulation," is rapidly assuming an important role as a potential method in animal breeding. There is hope that it may one day compete with artificial insemination as a means of enhancing fertility. The technic of artificial inoovulation represents one of the major current lines of study in Mann's Unit of Reproductive Physiology and Biochemistry. In 1965 the first brown-white Hereford calf was born in Cambridge to a black-white Friesian cow as a result of cervical insertion of a Hereford embryo into the uterus of a Friesian foster mother. Since then, successful attempts have been made to transfer surgically two embryos to the same uterus, resulting in the birth of twins. In 1971, several pairs of such twins were produced, differing in breed and color not only from the foster mother but also from each other. A Friesian mother nursing a pair of twins, one a Hereford, the other a Jersey, is a familiar sight on the grounds surrounding Mann's laboratories. Thus, as regards animals, we are very nearly in a position to select not only the "baby's sex" but the "baby's color" as well.

A new journal, *Contemporary Ob/Gyn*, made its appearance in January, 1973. The editor is John T. Queenan. I want to wish him and his associates great success.

