The first 100 years

MICHIGAN DEPARTMENT OF PUBLIC HEALTH

...each person is, in the broadest and fullest sense, healthy and safe only as every person about him is healthy and safe

. . . Robert C. Kedzie

Table of Contents

STATE HEALTH DIRECTORS

1873·1973

Henry B. Baker, M.D.
(Secretary) 7-30-1873 to 3-30-1905

Frank W. Shumway, M.D.
(Secretary) 3-30-05 to 7-1-11

Guy L. Kiefer, M.D.
(Commissioner) 2-1-27 to 5-8-30

Clyde C. Slemons, M.D.
(Commissioner) 5-9-30 to 1-31-38

John K. Altland, M.D.
(Acting Commissioner) 9-23-47 to 3-16-48

G. D. Cummings, M.D.
(Acting Commissioner) 3-17-48 to 8-2-48

Robert L. Dixon, M.D.
(Secretary) 7-1-11 to 2-1-14

John L. Burkhart, M.D.
(Secretary) 2-1-14 to 3-31-17

Richard M. Olin, M.D.
(Commissioner) 4-1-17 to 2-1-27

Don W. Gudakunst, M.D.
(Commissioner) 2-1-38 to 7-31-39

H. Allen Moyer, M.D.
(Commissioner) 8-1-39 to 1-6-44

William DeKleine, M.D.
(Commissioner) 2-18-44 to 9-22-47

A. E. Heustis, M.D.
1965 (Director) 8-3-48 to 10-1-67

R. Gerald Rice, M.D.
(Director) 10-1-67 to 5-3-70

Maurice S. Reizen, M.D.
(Director) 5-4-70 —

An invitational conference for providers of health care was held on September 24-26, 1973 at Shanty Creek Lodge, Bellaire, Michigan. The conference was sponsored by the Michigan Department of Public Health to commemorate its 100th anniversary.

Lois Lamont, Assistant to the Director, Michigan Department of Public Health, opened the conference and Donald C. Smith, M.D., Principal Advisor to the Governor on Health and Medical Affairs, provided the "Governor's Charge" to the conference. Their remarks were as follows:

Major Issues in Health Care

OPENING REMARKS

Lois Lamont, Assistant to the Director, Michigan Department of Public Health

I'm very pleased to welcome you to our birthday celebration. This birthday party is the observance of 100 years of official State involvement in Public Health. I also want to thank you for the planning that has gone into this conference. The work that will be carried on over the next two and a half days will make our birthday celebration more than a public relations gimmick, but something of real importance.

We decided to observe this centennial with a minimum of fanfare and a maximum of work for better health care in the years ahead. The program was designed to be low-keyed, but when I look around I see it's going to be very high-powered. Rather than sitting back and reminiscing about what we've done in the decades behind us, we're trying to look ahead. Supplemented by the experience and knowledge of other people, we're trying to figure out what will be needed as we start a new century. We're pleased that other institutions, other services and organizations are also using the Public Health Centennial as a vehicle for looking at their programs.

This conference represents those who provide services and addresses the issues and trends in the tradition of health care. It will be followed by an invitational citizens' conference which like this one will be limited to something less than 75 participants, each selected on the basis of his ability to influence health care. The citizens' conference will provide the perspective of the consumer.

Both conferences will be considering priority health problems, possible alternative solutions, and recommendations for action which can be initiated by the State in one form or another.

We are looking to these conferences for clear cut proposals that are feasible and practical and which will significantly affect better health care for well defined groups of Michigan citizens.

This I might say is no small order. If, as expected, such proposals do emerge from these conferences, if they are translated into legislative action, if they bring about better State agency, interagency and institutional programming, then the Department will have celebrated its centennial year appropriately and in keeping with the same determination and philosophy its founders set forth in 1873. And we shall emerge with a reaffirmed commitment and a direction for better health care for Michigan people in the decades ahead.

GOVERNOR'S CHARGE

Donald C. Smith, M.D., Principal Advisor to the Governor on Health and Medical Affairs

The event that actually brings us together this week took place in July of 1873. It was then that the Michigan Legislature enacted, and Governor Bagley signed into law, Public Act 81 which established the State Board of Health, provided for a Superintendent of Vital Statistics, and assigned to local health departments certain prescribed duties and responsibilities.

The legislation of course created more than an agency for health. It created a social institution, which has grown and prospered in these past 100 years and has had a significant effect on Michigan citizens in all parts of the State. It has further influenced the development of community health programs in many other parts of the world.

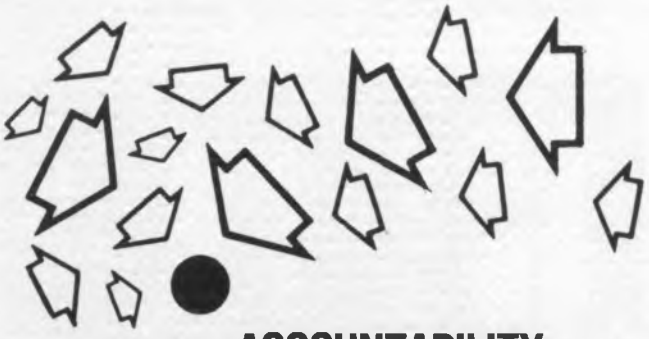
From an early point in its history, the Michigan Department of Public Health has had strong leadership and today it is one of the most highly professional, most highly respected, and most productive institutions of its kind.

It was almost a year ago when Governor Milliken stated the ways he thought the centennial of the department could most appropriately be observed. He provided a number of suggestions and expressed the recommendation that whatever the scope and the format of the celebration that major emphasis would be given not to the past, but to the future health needs and development.

A planning committee was subsequently established and the Governor's recommendation was adopted com-

pletely. It was agreed that major attention should be given on this occasion to the challenge of looking ahead at the means of determining the most critical health needs in Michigan and in considering possibilities for satisfactorily dealing with these needs.

So this then is the essence of the "Governor's Charge" to this conference. He is expecting us to provide him and the Legislature with explicit administrative and legislative proposals which will serve to further extend and strengthen personal and family health care services throughout the State.



ACCOUNTABILITY FOR HEALTH CARE

After delivering the "Governor's Charge", Dr. Smith asked that the conference participants meet in three separate groups.

Each group dealt with one of the following topics: Accountability for Health Care, Trends in the Preparation of Health Care Professionals, and Regionalization of Health Care Services. In preparation for this assignment, the conference participants studied a number of position papers on each topic. The position papers were submitted by resource people from the various health service schools of colleges and universities in the State.

An evening session on September 25 brought all conference participants together again for a discussion of a case study entitled, "Kidney Disease — A Model for Health Care Delivery in Michigan" by Franklin D. McDonald, M.D., Associate Professor of Medicine, and Director of Nephrology, School of Medicine, Wayne State University.

During the morning of September 26, recommendations that evolved from the discussions of the assigned topics were presented by each of the three groups to all conference participants. These recommendations were as follows:

RECOMMENDATIONS

Accountability For Health Care

Underlying the issue of public accountability in health is the problem of an increasingly more explicit gap between public expectations of our health care system and its performance. Despite amazing technological progress in the health sciences, the distribution of personal health opportunities and statuses is very far from adequate, at least when evaluated in the light of a philosophy of relatively equal health opportunity for all.

An increasing segment of the public is demanding that its confidence in the institutional systems for health care be shored up by means of social, institutional and public policy development. We therefore are at an opportune moment to consider how citizen, professional and governmental action may be undertaken at the State and local levels in order to do a better job of meeting the fundamental expectations of the public.

These expectations, widely held and hardly controversial today, may be summarized as follows:

- Availability of a range of needed services
- Assurance of quality
- Health care financial security
- Public accountability for planning and performance

The group on Accountability dealt with its subject in a very practical and pragmatic way, rather than abstractly and theoretically. Unfortunately, time permitted us to get deeply into just the first of these subjects, although we touched on others. Therefore the consensus of the group on Accountability is that the discussions should be continued. Thus our first recommendation is:

1. *The group on Accountability be reconstituted as a working Task Force appointed by the State Health Planning Advisory Council.*

2. *State Policy of Right to Health Care*: The State of Michigan should adopt a policy stating its responsibility to guarantee the right of every resident to have needed health care services of high quality readily available, at costs which the people of Michigan can collectively afford.The Governor should assign responsibility to appropriate State agencies to plan for the implementation of this policy. This should include consideration of requiring employers to make health insurance available to their employees.

3. *Data Collection*: The State should undertake studies of the specific necessary statistics on use, access, quality, and cost of personal health care and establish uniform state-wide requirements for the collection, presentation, and analysis of these data.

Area wide comprehensive health planning agencies should have the responsibility for collecting data from provider agencies, Professional Standards Review Organizations, and other sources and developing necessary additional data on the utilization of health care services generally in their region, the utilization of specific expensive services such as in-hospital and long-term care, the occupancy of expensive facilities, and the per capita cost of health care in the region. They should also be charged with regional responsibility for preparing analyses of special problems of access, cost, and quality and of recommending solutions to the State and other agencies. Data needs should be defined in advance and data collection efforts coordinated to avoid duplication and unnecessary demands on providers.

4. *Coordination of Regulation of Institutional Providers*: Because of the increasing complexity of health care delivery and the continuing rapid rise in costs, we believe it is essential that the State make effective organizational and administrative arrangements to carry out its major regulatory functions.

The Governor and the Legislature should designate a single governmental unit with broad authority and responsibility over all institutional providers of personal

health care (e.g., hospitals, long-term care facilities, mental hospitals, and organized home care programs). This agency would regulate certification of need programs and the health planning system, State institutional licensure and approval programs, and maintain control over institutional rate review and approval programs for all health care facilities. This agency would be explicitly empowered to delegate the execution of the administrative functions to appropriate government and private agencies.

Subsequent to the merger of Blue Cross and Blue Shield (see recommendation No. 9), the State should consider giving the new corporation the authority to conduct the direct regulation of rates and charges of hospitals and other institutions under State supervision.

5. *Encouragement of Innovative Delivery Systems*: It should be the goal of the State to provide each citizen not just with appropriate access to care, but also with an informed choice between at least two practical means of access to the health care system.

It is necessary to develop new forms of delivery systems which effectively coordinate preventive, ambulatory, and institutional care, and organized home care. We believe that the advantages of vigorous experimentation and demonstration in this area are now well known and we recommend that Blue Cross, commercial insurance companies, voluntary health corporations, State universities and others be encouraged and subsidized to develop such projects. Prepaid group practice is one such system already existing in Michigan in the Metropolitan Health Plan of Detroit. Similar programs and other innovative models such as medical foundations and models which provide incentives to private physicians under fee-for-service practice should be established. Legislation to allow these alternatives needs to be developed.

All of these experiments and demonstrations should include independent evaluations by qualified professionals such as the resources of the State universities.

To help implement the goal of informed dual choice, State employees should be offered participation in experimental programs wherever they exist, as a perquisite of employment.

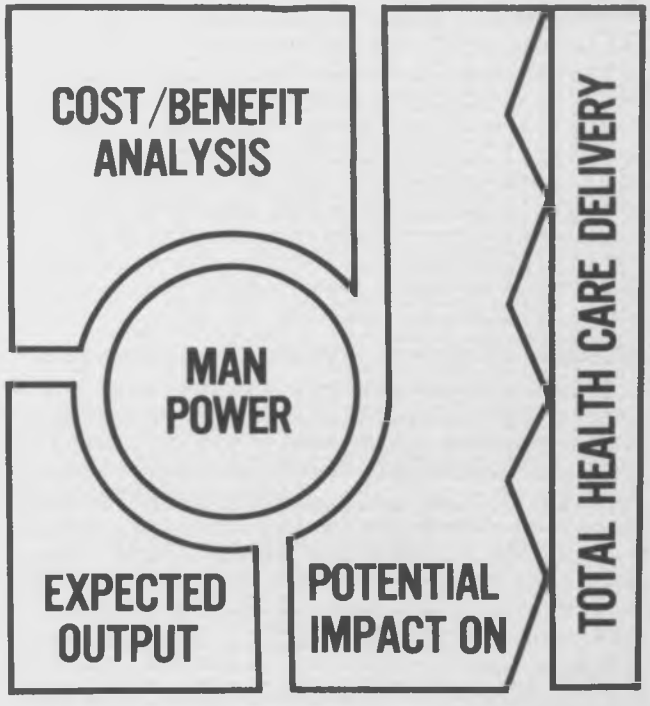
6. *Encouraging Community Involvement*: We recommend that trustee membership of voluntary health care organizations should be more than 50% public or consumer. These public members should include a substantial number of persons served by the institutions, and reflecting the sociocultural diversity of the service area. Physicians, administrators, and other health professionals, and financing agencies have an appropriate role on boards of trustees of voluntary hospitals and other voluntary institutions and agencies. However, these groups should not exceed 25% of the board.

State universities should offer educational programs to trustees of health care organizations (on a voluntary basis) to help them understand and carry out their duties.

7. *Public Health Education*: The State should encourage greater emphasis on expanding health education programs directed at improving consumer knowledge and understanding of how to utilize the resources which are available.

8. *Full Disclosure of Information*: Institutional providers of health care (e.g., hospitals, long-term care facilities, mental hospitals, and organized home care programs) in the State of Michigan, regardless of ownership, should provide a full annual fiscal disclosure, including reports from certified public accountants. Since voluntary hospitals often have special problems in the areas of interest earned and paid on large sums of public and not-for-profit funds, their reports, and those of other voluntary agencies, should be expanded to include identification of banks used, average balances of accounts, and the amount of interest earned. Voluntary hospitals should also include the source of all loan funds and the interest paid on those loans. Information subjected to the rate review agency by voluntary institutions should also be a matter of public record and should be available to interested persons, except to the extent necessary to protect the privacy of individuals.

The principal source of income and other board and corporate officer responsibilities of each board member and his or her spouse should be a matter of public



record, as should the board members' length of service and term of office.

9. *Merger of Blue Cross and Blue Shield*: Michigan Hospital Service (Blue Cross) and Michigan Medical Service (Blue Shield) should merge into a single new voluntary non-profit corporation with a majority public board of trustees.

10. *Review of Pattern of Professional Fee Payment*: The State government should take the initiative in assessing the use of and alternatives to the current pattern of professional payment based on "reasonable-usual-customary" payment of fees.

Trends In The Preparation of Health Care Professionals

To bring the many recommendations into sharper focus the Manpower group began its deliberations with capsule summaries of the numerous papers written on the topic "Trends in the Preparation of Health Care

Professionals." Though widely disparate in content, several common themes could be found among the papers. There seemed to be general agreement that more centralized planning and coordination was needed in the statewide production of all health care professionals including greater interdisciplinary articulation and involvement. Secondly, most authors called for increased State funding support of educational institutions and clinical agencies actively involved in the preparation of health care professionals. Finally, several papers spoke of the need for change in legislation regulating the scope of professional practice in dentistry, nursing, pharmacy, and allied health to promote better utilization of all health care professionals in these fields.

The plethora of recommendations contained within the papers and the difficulty of discussing those recommendations among some twenty-five members led the Manpower group to divide into subgroups. The following subgroups were delineated to reflect certain crucial steps in the process of manpower production: 1. Education and training (production) of manpower, 2. Licensure and certification, 3. Practice and practice settings, and 4. Evaluation of practice and practice settings and feedback to the educational settings. Each group was asked to review all proposals contained within the various papers pertaining to their subgroup, to generate any additional proposals they thought were warranted, and to organize those recommendations according to the following two dimensions: 1. Proposals that require legislative versus executive actions and 2. Proposals that require funding versus those that do not.

Summary of Manpower Group Recommendations

At the present time decisions regarding health manpower are made at individual institutions and within a variety of funding organizations. There is a need for overall coordination and comprehensive health planning.

1. The Manpower group recommends that continued comprehensive health planning responsibility be exercised by the Office of Health and Medical Affairs whose primary concern is the production of health manpower. Comprehensive health manpower planning involves:

   a. Assessment of health manpower needs within the State.
   b. Development of a coordinated data storage and retrieval system including the generation of data not now available for comprehensive analysis.
   c. Identification of alternative approaches for meeting manpower goals, primarily at the institutional level. Essentially this means management by objectives whereby alternative ways to achieve program objectives are explicitly defined. Proposed alternatives should include cost/benefit analysis, expected outputs, potential impact on total health care delivery and pros and cons of the proposal, plus a justification for program requirements and procedures.
   d. Selection of the most appropriate approaches to manpower needs and the facilitation of implementation of selected programs.
   e. Evaluation of the impact of manpower programs in meeting the needs and goals.

2. The Manpower group further recommends that the Office of Health and Medical Affairs examine the current trends in licensure for all health professionals and make recommendations for legislative action to prevent further proliferation of licensing laws, to reduce variations in current licensing laws, and to make certain that existing practice acts consider equivalence testing, career mobility, monitoring continued competence, and removal of unnecessary restrictions to allow for the appropriate utilization of all health professionals.

3. This body endorses the new Dental Practice Act which permits the expansion of the function of dental auxiliary personnel under supervision of a licensed practicing dentist to the best advantages of a dental patient population.

4. This body endorses a revision of the Nurse Practice Act which should recognize the expanded role of nursing.

5. This body endorses a revision of the Michigan Pharmacy Act to allow for greater flexibility in the pharmacy internship requirement.

6. Concerning the Emergency Technician Practice Act before the State Legislature, this body recommends that the Act be defeated under the existing moratorium on health professionals licensure and that the issue be referred to the Office of Health and Medical Affairs.

7. This body recommends that the State enact appropriate legislation to give legal status to Physicians Assistants and to recognize the National Board of Medical Examiners P.A. Exam as the minimum requirement for practice as a physician's assistant in Michigan.

8. Interdisciplinary approaches to health care should be actively promoted in the private sector, along with an increasing and expanding role of allied health personnel in providing health services. This should be coupled with the development of more effective reimbursement mechanisms for the wide range of multidisciplinary health services which may be prescribed in resulting treatment programs.

9. This body recommends that whenever possible, service programs include a well defined consumer education component directed toward the more effective utilization of the health service by the consumer.

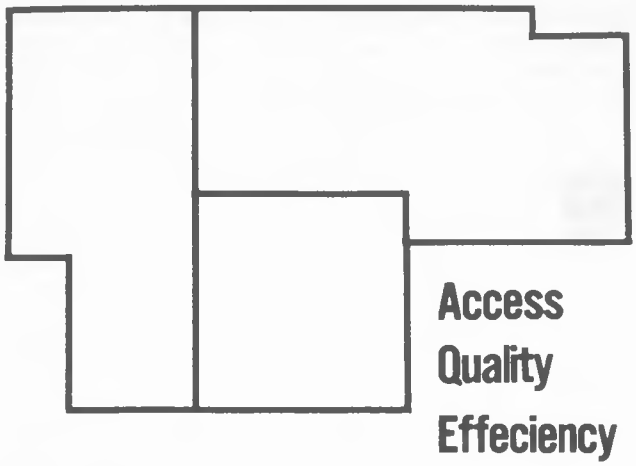
10. This body recommends that health education programs should be developed for appropriate groups in every community to focus on health problems which apparently can be prevented, detected early, or controlled through individual action. High priority should be given to legislative action which would mandate the establishment of comprehensive and effective K-12 health education programs in Michigan's public schools.

11. This body recommends that financial support be provided which will allow for the expansion and improvement of the manpower education capacity of the practice setting. This would be coupled with a cost/benefit analysis of this type of health manpower development and its impact on the health care setting.

12. A statewide evaluation should be undertaken of current patterns and trends in solo practice, group practice, health maintenance organizations, and other modes for the delivery of health care in Michigan, including their relative impact on current health status and current and future health manpower needs in Michigan.

13. Funding mechanisms must be developed for the education and training of professionals and paraprofessionals in efficient methods of health care delivery. Ad-

REGIONALIZATION



ditionally, programs should be developed for retraining and continuing education.

14. This body recommends that the State should develop a mechanism for support of research in health services including research on the impact of interdisciplinary health delivery and other alternative forms of health care delivery.

Regionalization Of Health Care Services

The group on Regionalization used various elements of the position paper "A Regional Approach to the Management of Health Care Systems" as a reference. The discussion of the study group centered upon such themes as the following.

1. Regionalization is a process, the elements of which include timing, and the phasing of events so that involved individuals and groups develop the capability to effectively and efficiently act upon reliable information.

2. Regionalization should be voluntary and autonomous rather than forced or imposed; however it requires legislative sanctions, authority and controls, and a state-level mechanism to guide and facilitate the regionalization process. Thus, it requires a compatible state-regional arrangement.

3. Regionalization strategies may lead to a merger of functions, establishment of a new agency, or the modification of an existing agency.

4. Regionalization requires appropriate attention to the characteristics and the needs of the involved consumers and providers of health services. Thus, different regionalization efforts will differ in organization, structure and, possibly, in function.

5. Regionalization requires a management function which ties planning and implementation closely, allocates resources, and maintains clarity of expectations among the involved groups.

The group strongly supports the concept of regionalization of health care in Michigan, as being essential to the improvement of health care in terms of, for example, improved communication, access, efficiency, and quality. Regionalization for these purposes is considered to be the organization and coordination of all health resources and services within a defined area. It is concerned with the linkages and functional relationships between various health resources, and includes a mechanism for allocating resources, including manpower, facilities, educational programs, and data collection.

The success of regionalization of health care will depend upon many factors. Of great importance is that elements of both State and local resources be utilized. The study group offers the following as a possible approach to regionalization of health care.

1. A statewide organization should be utilized to develop a plan for the regionalization of health services. This plan should provide a mechanism for dealing with those problems that overlap regional boundaries, or to deal with those problems within a region that local groups are unable to cope with.

2. Regional groups should be utilized to develop plans to deal with local problems within their regional boundaries.

3. It is reasonable to assume that each of these groups will require the expertise of the other; and integration and linkages of function will be necessary.

4. It is further recommended that the existing 314 "A" and "B" agencies should be directed to carry out the planning role that has been outlined above.

5. It will be necessary to develop legislation and funding to provide for the implementation of the planned regional program, adhering to principles of *process* and *management* as discussed in the position paper. Among the problems to be resolved are those of the distribution and utilization of facilities, manpower, data collection, and educational programs.

Five health science deans reacted to the recommendations. They included: John A. Gronvall, M.D., Medical School, University of Michigan; Clive I. Mohammed, D.D.S., School of Dentistry, University of Detroit; Richard Ohvall, Ph.D., School of Pharmacy, Ferris State College; Tom D. Rowe, Ph.D., College of Pharmacy, University of Michigan; and Margretta Styles, Ed.D., School of Nursing, Wayne State University. Their reactions were as follows:

Reactions To Recommendations

John A. Gronvall, M.D., Medical School, University of Michigan

Dr. Smith said that he hopes that our responses would be specific and directed at the recommendations that had been made and would provide either support or interpretation of them. I don't believe that I can appropriately attempt to do that having just sat through these three reports which cover a great deal of material. I don't see any way to just stand up and try to go through them and say yes, yes, good, bad, intermediate, yes, no. There is much material that will come out of this conference and I believe that the only way it can be appropriately worked on is to be referred to bodies such as the State Health Planning Advisory Council and other appropriate bodies where it can be worked on in a perspective.

What I will do is try to point out what to me represents three important axes along which I think we find ourselves as we try to deal with these recommendations or in fact with all of the problems that we face in health. And I think that identifying these three axes of tension is at least to me helpful in trying to create an overall frame of reference within which we try to respond to individual recommendations.

First I would point to the axis that has categorical programs at one end vs. comprehensive care, comprehensive programs, and comprehensive problem solving at the other end. We find ourselves shifting back and forth along that axis in a kind of easy state of dynamic tension, sometimes focusing on very categorical and highly defined programs.

The nephrology discussion last night I think is an example of a well defined categorical program. We find ourselves inclined to make decisions on the basis of categorical approaches and then a week later, when we are trying to act with a comprehensive hat on, they may conflict or make even more difficult some of our comprehensive jobs of cost containment, most effective utilization of resources, etc. So that's one axis of tension that I think is very important.

Second, I would point to the axis that has at the one end continual incremental funding for new, better, and expanded health programs and has at the other end the question of whether the job really isn't priority setting for expenditure of funds or for operation of programs within some kind of a fixed total budget for health. Again on different days or even within different minutes within the same meeting we find ourselves operating along that axis.

Third is an axis that at one end has highly centralized overall State or Federal planning and coordinating operations which can say no to something that has no real power to implement a program or deliver, and at the other end are individual institutions or individual people who have initiative, who can get a job done, but by necessity operate on the basis of self interest, limited interest, or limited understanding of the total set of problems to which the State or the nation is trying to respond. Again, I think many of us move back and forth from the status of being institutional people while at the same time having to wear the hat of the comprehensive planning agency or a comprehensive review mechanism.

I believe that pointing out these three reference frames does not particularly help in dealing specifically with recommendations or setting the way in which to respond to them, but I think they do provide a helpful frame of reference within which to try to lead with the multiple problems and multiple interests that we all face and share together. I've enjoyed the conference. Thank you.

Clive I. Mohammed, D.D.S., School of Dentistry, University of Detroit

A former professor of mine who also became a dean at the University of Illinois said to me that a dean should possess three things. He should possess knowledge for the look of wisdom, strength for the look of courage, and hemorrhoids for the look of concern. Well even without the latter I'm very concerned.

I feel a little peculiar representing as I am a private institution that has I think accomplished much in the production of dental health manpower for the State of Michigan over the last 40 years with virtually no state aid to this institution until the last three years but which is dependent upon this kind of continued aid for its continuation. I think the conference has done much for establishing a commonality of needs in the production of manpower and indeed I think that's the business that we're in.

I think the symposium last night on kidney disease as a model of health care delivery is closely akin to what's happening in dentistry. We are presently trying to identify the dental health needs for the people of the State of Michigan. For example, there is much discussion around the point of whether or not there is a need for orthodontists, whether or not the training of orthodontists ought to be continued at the same level, and whether or not to train the same number of orthodontists as previously.

I was gratified to note that the members of the manpower group have endorsed the Dental Practice Act as presented and I think that this is a step in the right direction. This is particularly so with increasing demands for dental health care, which will be placed in the dental profession with the passage of recent union negotiations.

Richard Ohvall, Ph.D., School of Pharmacy, Ferris State College

We have indeed this morning been presented with a rather far reaching broad group of recommendations which I think have rather critical implications for us all. A number of common threads seem to be running through these recommendations and I would just like to comment on a couple of them.

One of them that seems to come up again and again is that we are certainly suggesting increased state or governmental control of all of our activities in one way or another. There seems to me to be no question that were all these recommendations to be implemented immediately that there would be considerable concern among practitioners around the State for a variety of reasons which I think are perhaps obvious to us all. So I think that in developing implementation mechanisms for these recommendations as they move along it becomes increasingly important that we have all sorts of participation, information, and communication with practitioners on a grass roots level.

I think this has been pointed out in a couple of the recommendations. For example, in the Accountability group they encouraged community involvement. I think this is what that means. At least that's what it means to me and what everybody mentioned. We need a lot of data, we have to share it and it should be shared with everyone so that they understand why some of these things have been recommended and so that they understand the needs. If this isn't accomplished, I'm afraid that we will have massive paranoia among the citizenry and perhaps among practitioners if they don't understand the origin of some of these recommendations and the deliberations that go into them. So it is extremely important that everybody has a part to play so that the actions are understood.

In implementing these recommendations it is again quite evident that somebody somewhere is going to have to begin to make some rather critical qualitative judgments or qualitative evaluations as to how many people

are enough? We can consider practitioner-population ratios which I think are wholly inadequate. What kind of care is adequate care? Again this gets into data collection, but there is a fair amount of subjectivity that is going to have to be developed in making a lot of qualitative judgments. Again, extreme care I believe has to be taken in seeing that practitioners of all of the health professions understand the basis for these evaluations and judgments that have to be made.

It is perhaps possible to go ahead with some cost benefit analyses and of course cost containment is a major effort. I sometimes thought in some of our deliberations that the economic aspects of all of our activities were a little bit underplayed. I'm not sure. I think as the discussion went along they became more and more evident, but we almost seem to be sometimes embarrassed to consider our economic status. I don't think we have to do that. In the regionalization discussion, I think the economic implications of some of our suggestions became more and more evident.

Tom D. Rowe, Ph.D., College of Pharmacy, University of Michigan

You (Dr. Smith) made a remark in your opening comments that I would like to refer to which pleases me very much. You said that you plan to make use of the recommendations. I do hope that this comes about. As I mentioned to you and the others, there have been meetings, not necessarily of this type, where many recommendations have been made and nothing comes of them.

Dean Ohvall said that he hoped that these recommendations would be implemented in a decade or so. I guess I'm a little impatient. If we have to wait a decade I think that will be too long. I hope you can implement them within a few years. Certainly less than a decade.

One of my concerns is that all of our input came from providers. I'm not sure that the recommendations that came out of our group, which was regionalization, would have been the same if we had had consumer input. Throughout our conference I think almost everybody emphasized the need for consumer input. So I would hope that in the future there might be a conference of this type in which we could have the consumers and the providers meet together so that this reluctance to give up turf might disappear. This was quite evident in our meeting. A reluctance to give up turf. This is understandable and I think it is bound to continue, but I think if we had a little more pressure from the consumer this reluctance might disappear.

Margretta Styles, Ed.D., School of Nursing, Wayne State University

Dean Coye (Robert D. Coye, M.D., School of Medicine, Wayne State University) promised on Monday, (Sept. 24) that he was bringing to the conference some tavern wisdom. Well as his counterpart in nursing at Wayne, what I brought to the conference was abysmal ignorance. But fortunately it is coupled with an enormous thirst and curiosity which could not be so well satisfied in the tavern as it could be in participating in the group discussions and in conversations with individual participants.

As a nurse educator, I hoped to use this conference as a crystal ball through which I could assess the opportunities for collaboration among health professionals in the training of providers, in determining the kind and quality of services to be provided, and in fact even in the design of the delivery system. The composition of this group suggested to me that in fact there would be substantial opportunity for this kind of interdisciplinary endeavor in the State.

At first, I was rather depressed because it seemed to me that it was not made explicit in our deliberations that we were talking about professions other than medicine. And in fact the paper on professional accountability dealt only with the medical profession and was so titled. I sort of hestitate to use this emotionally charged word, but frankly I felt that perhaps what I was perceiving was tokenism in this particular regard.

Then as we began to wind up our meeting it seemed that sentiments were being expressed which indicated that something had occurred in this regard. I think it was best expressed by Dr. Coury (John J. Coury, M.D., President, Michigan State Medical Society) who in his final remarks to the group said, and I'm going to try to quote him approximately, "that all health professionals have the same goals, good quality care, equitably distributed and at reasonable cost, and a need to work together to arrive at some common understanding about what all this means." In relation to this matter of interdisciplinary cooperation, collaboration, and collegiality I leave the conference with considerable optimism and commitment.

I had also hoped to take from the conference a climate in regard to the expanded role for nurses who as licensed professionals have historically demonstrated their ability and both their public and professional accountability. My overall impression is that there is considerable support for the utilization of nurse practitioners and perhaps midwives to improve the quality and availability of health care. However, there appear to be legal barriers to the fullest implementation of this expanded role concept. I would certainly hope that the weight of this group, both collectively and individually, would be behind efforts to replace legal strictures with flexible statutes which would enable the health professions again collaboratively and cooperatively to respond to changing health needs and manpower trends.

The conference closed with comments from Andrew D. Hunt, Jr., M.D., Chairman, State Health Planning Advisory Council, and Dean, College of Human Medicine, Michigan State University, and comments from Theodore R. Ervin, Deputy Director, Michigan Department of Public Health.

Andrew D. Hunt, Jr., M.D., Chairman, State Health Planning Advisory Council

As I think of our meeting yesterday and the certain amount of constructive tension between people of differing doctoral degrees I am reminded of the situation of a physician that recently went to heaven. When he arrived, he found Saint Peter as usual standing by the door, but there was an enormous long line, several hundred light years in length. After looking at the situation for a few minutes he said, "My time is much too important to stand in line." So he went charging up to Saint Peter and said, "Let me in, I'm a Doctor." Saint Peter said, "Don't worry doctor, there is no problem with time up here. Just go to the end of the line, you'll get in in due season." While standing in line, he suddenly saw a person with a white coat, head mirror, and stethoscope walk past Saint Peter and through the door. Not liking what he saw, the doctor went back to the Saint and asked him why the guy didn't have to stand in line. Saint Peter said, "Don't worry, that's God. He likes to play Doctor."

I thought that it might be well to provide you with a little bit of the history about the A agency in this State since it is important in terms of understanding where we are today.

The comprehensive health planning law came into effect in 1967. Governor Romney established the A agency in Michigan according to the legal requirements.

He established it first as a commission. This commission consisted of the heads of Departments of Health, Mental Health, Education, Social Services, and a couple of others. This commission was collectively to be the A agency.

The advisory council was established according to the rules of the game with 51 or so percent consumers. I was asked to be chairman of this council.

Those first few years of comprehensive health planning at the A level were confusing ones indeed at all levels. The law itself of course was a masterpiece of very idealistic pronouncements, goals, and objectives subject to as many interpretations as the gospel according to St. Matthew. After a year or so, Governor Milliken, with the advice of the advisory council, decided that the commission itself was an extraordinarily difficult group to function as a line agency. Each department had a function as a department and found it very difficult to function as a collaborator in a new agency. The meetings sometimes assumed the nature of a security council meeting rather than of a group process trying to solve problems.

The commission was abolished about three years later and the A agency stood alone with the advisory council advising it. However, the agency itself was rather low on the executive office totem pole which made it extremely difficult to recruit appropriate staff. It was also hard to know what was happening to the advice coming from the council, how well it was being used, indeed if it was being used at all.

So a new committee was formed in the advisory council with Dr. Margaret Ferris as chairman. She came up with a recommendation that the A agency be lodged in the Governor's office with the director of the agency responsible directly to the Governor rather than to somebody below. Eventually this led to the establishment of the Office of Health and Medical Affairs headed by Dr. Donald C. Smith.

Now, the responsibility to the Governor is established in a way in which the advisory council recommended. The advisory council has had its name changed a little bit, but I think that the basic responsibilities are not terribly different.

The advisory council is a very dynamic group, very active in its outspoken behavior at the meetings, and should be a group which can accept the responsibility for many of the recommendations which this conference has produced.

The recommendations that are sent to the advisory council will be dealt with. It would seem to me that some of these recommendations would be very interesting to the citizens' conference. They are quite consumer oriented and should give them some hope. The recommendations are not elitist recommendations at all. They are really politically very reasonable recommendations.

I think this has been an excellent meeting. I think it is very unusual in a State for this kind of interaction to happen with a kind of freedom and a lack of constraints that have characterized this meeting.

Theodore R. Ervin, Deputy Director, Michigan Department of Public Health

I want to say thanks to the people who have helped plan this conference and who have spent these three days working together to come up with this set of recommendations.

I have a confession of sorts to begin with and that is that more than a year ago some of us who were plotting, planning, and hoping that this conference and the citizens' conference might have sort of a hidden agenda — an agenda that traces back to the earliest times of public health in Michigan. If we go back to 1873 for example and read the reports of the first board of health, Dr. (Homer) Hitchcock said in his opening address, "I welcome you to this work, grand, self-sacrificing, and sublime." There was something in those records that contained a spirit, a motivation, and a willingness to innovate, a willingness to experiment, a willingness to look ahead, and a willingness to work together.

Some of us wondered if we could recapture this willingness 100 years later. After listening to the recommendations and reactions this morning, it seems to me that our expectation is being met. We have in fact recaptured some of that motivation that brought about those early gains in health and have led us down the trail to where we are today.

Listening to the recommendations, I was struck by the remarkable change that has taken place in a broad sense. Twenty-five years ago I remember being in a room where a program was presented by a group of physicians in the State and the program was entitled, "I Don't Want The Government To Run My Business". And this morning as I heard the recommendations, particularly the recommendations concerning the professional fee structure, it seemed to me that there has been a great deal of change — a healthy change for all of us in this State.

I also noticed a sense of cooperation that came through in many of the comments made here this morning. I suppose it is an understatement to say that it has not always been true in this State that the universities and medical schools were able to work together. I think the cooperation demonstrated here is a real accomplishment. It is a foundation from which I think some great things can be done for the people.

Furthermore, I noticed a willingness to confront an issue such as regionalization. I remember back to the time of the constitutional convention in Michigan one of the delegates with a great deal of political "oomph" behind him got up in blazing terms and said that there is nothing in the world more sacred than a county boundry line. It seems to me that there is now grown, both in this group and hopefully also in the citizens' group, a recognition that we have got to look beyond those parochial boundry lines if we are going to do the job as we should.

I want to again compliment this group for the work done. I think it can be part of a real good new beginning for Michigan.

Left to Right: Ralph E. Lewis, Executive Director, Michigan Medical Schools Council of Deans, University of Michigan; Carolyne K. Davis, Ph.D., Dean, School of Nursing, University of Michigan; Aaron L. Andrews, Dean, School of Allied Health, Ferris State College; William R. Mann, D.D.S., Dean, School of Dentistry, University of Michigan; John E. Affeldt, M.D., Medical Director, Department of Medical Services, County of Los Angeles, Los Angeles, California; Myron S. Magen, D.O., Dean, College of Osteopathic Medicine, Michigan State University; Tom D. Rowe, Ph.D., Dean, College of Pharmacy, University of Michigan; Donald E. Smith, M.D., Principal Advisor to the Governor on Health and Medical Affairs; Lois Lamont, Assistant to the Director, Michigan Department of Public Health; Clive I. Mohammed, D.D.S., Dean, School of Dentistry, University of Detroit; Robert D. Coye, M.D., Dean, School of Medicine, Wayne State University; John A. Gronvall, M.D., Dean, Medical School, University of Michigan; Willis E. Moore, Ph.D., College of Pharmacy, Wayne State University; Richard Ohvall, Ph.D., Dean, School of Pharmacy, Ferris State College; Captain Ouida Upchurch, M.A., Special Assistant for Education and Training, Research and Development, Department of Navy, Washington, D.C.; Paul Sanazaro, M.D., Consultant in Medical Care Organization, Bethesda, Maryland; Franklin D. McDonald, M.D., Director of Nephrology, School of Medicine, Wayne State University.

A Consumer Advocate Looks at
ENVIRONMENTAL HEALTH

By Andrea M. Hricko, M.P.H.

EDITOR'S NOTE: This article is based on an address by Ms. Hricko to the State Health Department's "Centennial Citizens' Conference on Health Care" at Shanty Creek Lodge, Bellaire, Michigan — October 1-2, 1973.

I appreciate very much the opportunity to address this Citizens' Conference at the Centennial celebration of the Michigan Department of Public Health.

I have spent three of the past five years doing research on the public health aspects of accident control. For the past two years I have been working with Ralph Nader's Health Research Group, a public interest group involved in investigations and advocacy of health issues. My principal area of concern is currently occupational health.

Nearly everyone in the audience today, as well as on the reactor panels, has had wide experience in public health and, in most cases, has worked in this area of concern years longer than I have. I don't pretend to know more about environmental health problems or their solutions than any of you, but perhaps I can supply some fresh insight into the environmental health area from my experience in public interest work.

Leaving Washington, D.C. to fly to Detroit, one must cross over the polluted Potomac River to reach National Airport. This historic river contains sewage, chemicals, germs, and debris to the point that signs are needed to warn children that swimming or any other kind of contact with the water are prohibited because of the health hazards involved.

The river, however, is only part of the Washington environmental health problem. Just four weeks ago, we suffered for 13 days an air pollution alert caused, in part, by stagnant air that lacked wind to blow it away, but caused primarily by automobile exhaust, which accounts for 80 percent of Washington's air pollution. During the alert, the number of hospital admissions for respiratory and heart ailments climbed, although it is impossible to know what the real long-term effect of the air pollution alert might be.

Air and water are only two of the many environmental health problems for Washingtonians, or in any other city, if one considers that the environment in which our personal health can be threatened includes our homes and the places we work, as well as the entire outdoor environment. Take the occupational environment, and again let's look at the non-industrial District of Columbia.

Last year, our group cooperated with the local newspaper's union pressmen's study in a project on hearing loss caused by the presses that turn out the famous Washington Post. An inplant noise survey revealed that the presses often ran at levels over 105 decibels. The hearing of 81 of the pressmen was tested. More than half of them had a hearing loss at at least one frequency tested. The information was used by the men to obtain a written guarantee that the noise level would be reduced in the pressrooms.

Turning to the home environment, an 81-year-old woman living in the District of Columbia died several months ago. She died from burns sustained when her nightgown was ignited from a stove burner. The flames engulfed her, burning her over most of her body before she was helped in extinguishing them.

Or, let's look at another aspect of our home environment — our drinking water. The latest crisis in drinking water, of course, is the discovery of cancer-causing asbestos fibers in the drinking water of Duluth, Minnesota. Years ago, horrifying but not as lethal contaminants were found in the drinking water at Washington, D.C. — thin, red, wiggling blood worms. Although health officials have claimed that the worms are harmless, their presence does little to inspire public confidence in our drinking water systems.

ABOUT THE SPEAKER

Ms. Andrea M. Hricko is a Research Associate employed in Washington, D. C. by the Health Research Group, an affiliate of Ralph Nader's Public Interest Organization.

She attended Connecticut College where she earned a Bachelor's degree in Zoology in 1967. In 1970, she received a Masters degree in Pubilc Health, with a specialty in accident control, from the University of North Carolina.

From 1967-69, Ms. Hricko was employed by the U. S. Public Health Service as an epidemiological investigator of home accident injuries. Her current work in the consumer field deals mostly with aiding workers in actions aimed at the elimination of hazardous conditions from the workplace environment.

I have been using the District of Columbia as an example of the types of environmental health problems that can be found almost universally in the United States. The flood of goods that has been coming off the assembly lines has extracted its price in land stripped of minerals, rivers polluted with chemicals, and air filled with toxic gases. Industry has often brought harm to its workers in the process of producing those goods. Moreover, industry has produced goods that are not always tested properly prior to marketing, and they sometimes end up unnecessarily injuring consumers. We may just now be witnessing home injuries from products that were introduced two years ago. Or workers may just now be experiencing illnesses from jobs that they held over 20 years ago.

We need to focus today not only on solutions to the problems that have sprung from past practices, but to focus on aggressive, preventive environmental health problems and situations which have not yet even been experienced.

First this morning, let's focus on occupational health. Workers comprise 40 percent of the entire population. During their working hours, they may be exposed to physical hazards such as noise, heat and vibrations, to chemical hazards such as solvents, trace metals, or carcinogenic dyes — dyes known to produce cancer from their use. For example, three solvents — benzine, carbon tetrachloride, and carbon disulfide — are especially linked to leukemia, liver damage, and neurological problems among the people who work with them. Workers may also be exposed to hazardous dust and gases.

Groups of workers often end up with cancer, heart disease, and accidental injury in higher proportions than the general population. The President's report on occupational safety and health in 1972 estimated that 14,000 people out of a workforce of 80 million are killed every year. One hundred thousand workers die every year from occupational illnesses such as pneumoconiosis and cancer. Ten million people are injured every year in their workplace and 2.2 million are disabled.

The true magnitude of the problem in the nation, or in Michigan, is nearly impossible to assess because medical record keeping and reporting of occupational illnesses and injuries have been inadequate and inconsistent. Only the State of California has had a mandatory reporting system for all occupational illnesses and injuries.

In 1970, Congress responded to the problem of job health and safety by passing the Occupational Safety and Health Act (OSHA). With this legislation, Congress recognized the inadequacy of State and Federal programs and recommended an overhaul of the system. There is great potential in the new Federal Act, but unfortunately the law has been compromised by inadequate budget commitments, by wholesale delegation of enforcement authority to the states, and by voluntary instead of compulsory compliance by inspectors.

Basically, OSHA requires that the U.S. Department of Labor set specific standards for the workplace. Compliance inspectors then inspect the workplaces to see if employers have complied with the standards. Employers who are not in compliance are then issued citations for which penalties are proposed. Workers also have the right to complain about workplace hazards, and they can request inspections. Moreover, an employee representative has the right to accompany an inspector while he makes his inspection rounds.

The regulations originally promulgated May 29, 1971 covered only 400 toxic substances. However, by conservative estimates, there are over 12,000 potentially toxic substances that are used in the workplace. One problem with standard setting activities at the State and Federal levels is that the action is almost entirely retrospective; that is, they rely primarily on epidemiological results from past exposures in the workplace. And this approach does nothing to regulate the flood of new chemicals into the working environment. Moreover, because of the variety of new chemicals and the secrecy of most employers, workers often do not even know the names of the chemicals to which they are exposed. Obviously, this greatly hampers them when they want to file complaints about hazardous conditions.

Prior to enactment of the Occupational Safety and Health Act, State efforts varied greatly in terms of injury rates and forced incapacity, and per capita expenditures. The 1971 Department of Labor study showed that New York spent $4.83 per worker while the State of South Dakota spent 6 cents. Michigan was among the top ten for most effective State programs, spending $1.94 per worker for occupational health. Although some states had better records than others, no state was exempt from criticism.

Because of the variations in the stringency of State regulations and enforcement, hazardous industries were able to flee to states with lax programs. For example, when the State of Pennsylvania regulated the use of a chemical used in making dyes which had been known to cause bladder cancer in humans who worked with it, the company using the chemical fled to Georgia and continued in operation. It was not until this past year that the Federal government was finally able to get the company in Georgia to exercise the type of controls needed for workers using this particular chemical. Obviously, Congress is using OSHA to eliminate this kind of competition among states.

Under the Federal Act, states were given the option of developing plans to take over the functions of the Federal government if, and only if, the states were able to demonstrate that their plans were equally as effective as the Federal Plan. In keeping with this option, Michigan has developed an Occupational Safety and Health Act of 1973 which has been under review since February to determine its acceptability. I understand that the Michigan Plan was approved by the U. S. Secretary of Labor last week. The State of Michigan will therefore again have the go-ahead to resume enforcing occupational health and safety standards.

Although the Michigan Departments of Labor and Public Health have a long history of concern for workers, there will still be a need for citizen groups, especially health advocates, to maintain certain surveillance over the State's program. Past history in many states has shown that State programs are not always as effective in reality as on paper.

From my reading of the Michigan Plan, two separate and distinct bodies will have responsibility for promulgating standards. Two other bodies will enforce these

standards, and an additional three groups will handle hearings and appeals and enforcement action. The Michigan Department of Labor will handle enforcement of regulations covering occupational safety and general industry and construction. The Department of Public Health will enforce regulations dealing with occupational health matters. In the Department of Labor there will be a Job Safety Standards Commission and a Construction Safety Commission, both of which will promulgate standards to be enforced by the Labor Department. An Occupational Health Advisory Committee will be set up to advise the Director of Public Health on health standards. In addition, the following appeals boards will be established in the Department of Labor — the Board of Occupational Safety Compliance and Appeals and a Board of Construction Compliance and Appeals. Also, a Health Review Commission will be established.

I think it can be said that, with certain variations, the method of handling complaints and inspections will operate nearly the same under the Michigan Plan as it did under the Federal Plan.

Several areas of concern in the Michigan program that consumer groups and labor unions might look at come to mind. How will employees know which agency to contact with complaints about hazards? Will each agency have a different interpretation of standards? Will the review boards have varying interpretations of standards? Will this bureaucracy as established lead to delayed action on worker complaints? Will the safety and health program be more aggressive than it has been in the past?

Michigan's Occupational Health and Safety staff consists of about 103 safety inspectors and 37 industrial hygienists. This is a much larger staff than most other states provide. Nevertheless, this state, and every other state, has a long way to go before it can be said that every working man and woman is assured a safe and healthful workplace. Here's a case in point. A study which our group released last month of 459 auto workers seeking workman's compensation for their disabilities is strong evidence that not enough has yet been done to conserve the health of Michigan workers. In the study, a higher proportion of foundry workers had heart and lung disease than did other auto workers.

Moreover, some of the problems are not isolated to the workers in our study. The Michigan Department of Public Health says that the leading occupational diseases in the state in 1973 are dermatitis, carbon monoxide poisoning, chemical intoxication, and hearing loss.

Back in October, 1875, a layman, the Rev. Charles Brigham of Ann Arbor, addressed the State Board of Health in Lansing on the influence of occupations on health. He categorized the nuisances of labor as bad air, noxious odors, loud and harsh sounds, and dangerous exposure to heat and cold. In speaking about disease, Rev. Brigham asked, "Who can say what proportion of maladies comes from work and what proportion from other sources — bad surroundings, bad air, bad constitution, bad personal habits?"

The same question can be asked today, nearly 100 years later. But we are finally becoming aware that a person's work can play a much greater role in causation of disease than had before been realized.

In closing this section, let's consider some ways in which a health agency, a public interest group, CHP personnel, or anyone interested in occupational health can help workers in their struggle for health and safety. First, by monitoring the State Plan for Occupational Safety and Health as it takes over in Michigan, we can make sure it remains as effective as the Federal law; we should lend all assistance possible to the State Departments of Labor and Public Health as a means of encouraging a strong occupational health and safety program in the state. Two, by initiating discussions with labor and management to find ways to support and improve health and safety programs. Three, by developing work education courses to teach Michigan workers their rights under the act, to explain to them the new law in the state, and to teach them how to recognize and to monitor workplace hazards. Four, by referring workers to local sources of technical and medical expertise, if they have particular occupational health problems. Five, by identifying occupational health hazards in particular communities around the state and encouraging the development of a labor-management-health coalition to tackle these problems. Six, in an effort to end the insidious, adverse effects of occupational hazards on workers' health, agencies, including CHP agencies, can screen workers for symptoms of occupational disease.

I'd like now to turn to my second area of concern— drinking water. Americans are only beginning to appreciate the fact that a variety of toxic industrial chemicals, pesticides, and sewage may be in our water supplies. But most Americans assume that somehow these substances are removed from our drinking water before it comes out of the tap. Unfortunately, this is not true. Although many local officials tend to minimize the hazards of drinking water, most municipal water supply purification plants were designed to kill bacteria only, and thus the toxic chemicals and viruses are able to slip through. The enormous growth of industries producing synthetic or organic chemicals since the 1940s has added to the already existing pollution load from refineries, steel mills, textile mills, and other industries.

Dr. Wilhelm Hufer, an expert on environmental carcinogenics, has warned that very little reliable evidence is available on the carcinogenic effect of drinking polluted water. Exposure in drinking water to pesticides, arsenics, radioactive substances, run-off from tarred roads, or fuel oil cannot be considered safe. Cancer, which becomes manifest years or decades after contact, may never be traced to its original source.

The fact is that viruses and toxic organic compounds have been repeatedly demonstrated in drinking water that had supposedly been given complete treatment. A survey in Evansville, Indiana detected 40 organic compounds in the tap water supplied from the Ohio River. Two compounds were traced to a chemical manufacturing plant which was 150 miles upstream. In April, 1972, a EPA survey of industrial pollution of the lower Mississippi River found 40 synthetic organic chemicals, three of which are carcinogenic, in the drinking water in Louisiana. Moreover, a study of well water in Ames, Iowa showed that groundwater supplies are also subject to contamination; 14 potentially toxic organic compounds were isolated in the study.

Improved technology does exist for removing contaminants from drinking water. The food and beverage industry, for example, has been using special treatments since the 1930s to rid water of objectionable compounds. But . . . Ralph Nader, in testimony before the

Senate Commerce Committee in May, 1973, said that one survey has shown that only 35 out of an estimated 12,000 public water supply systems that receive polluted surface water have used the best possible technology for eliminating toxic pollutants.

As a result of the concern over the polluted drinking water situation, several bills have been introduced in Congress. A Senate bill has already passed. A House Bill has moved out of the Subcommittee on Public Health and Environment and is currently being considered by the Committee on Interstate and Foreign Commerce. I shall briefly outline a few of the main features of each bill, stressing that the House bill is far superior in certain aspects of the protection of public health.

In both bills, the Administrator of EPA will be responsible for prescribing national primary and secondary drinking water standards. Basically, the primary standards would be based on adverse human health effects; secondary standards would, on the other hand, be based on adverse effects on taste, odor, or the appearance of such water.

The Senate bill states that primary standards must "reasonably protect the public health." The word "reasonably" is not further defined. These standards must be proposed within 180 days after enactment and promulgated as soon as practicable. The standards shall prescribe maximum permissible levels for contaminants. Secondary standards shall specify the level of quality of drinking water "the attainment and maintenance of which is a prerequisite to reasonably assure aesthetically adequate drinking water." Again, "reasonably" is not further defined.

The House bill, on the other hand, is much more specific about the goals to be reached for drinking water. Within 90 days after enactment, the Administrator of EPA must propose "national interim drinking water regulations which shall protect health to the extent feasible using technology-treatment techniques and other means which are generally available, taking cost into consideration." After stating these interim standards, the Administrator of EPA would then set a goal and maximum contaminant level at which no known or anticipated adverse effects on the health of persons would be expected to occur. These maximum contaminant levels would be based on recommendations from the study done by the National Academy of Sciences. On the basis of that study, the administration of EPA would revise the interim standards that had been set earlier to be sure the safest standard possible was set; again, the safest possible in regard to technology — the best available at that time. Moreover, under the House bill, these levels would be amended whenever there was change in technology that would allow a water supply to come closer to reaching the maximum contaminant level than had been previously possible.

The basic enforcement scheme under both bills is for the states to enforce the law with Federal takeover if a state fails in its duty. Both bills provide that whenever a supplier of water has information that the level of contaminants exceeds the maximum allowable level, the supplier must notify its customers. This public notice would be of extreme value.

One important feature of the Senate bill is that it authorizes citizen suits in federal court to secure compliance with drinking water standards. The House bill, on the other hand, relies on administrative enforcement rather than citizen action.

Another feature of the House bill must be mentioned here. It pertains to regulation of underwater waste injection. Underwater waste injection is a system whereby industry disposes of its leftovers in underground waste injection wells. Perhaps in response to the tightening of controls on the dumping of wastes into surface waters, the House bill provides for regulations to ensure the protection of groundwater. But the Senate bill is silent in this area. Such groundwater protection is particularly important in rural areas where it is estimated that over three-fourths of the population uses groundwater for their domestic water supply. In Michigan, for example, the population is growing and groundwater resources are becoming increasingly important. Over 30,000 new individual well water supplies are installed in Michigan every year. The House bill offers a potential remedy for the groundwater situation by calling for the proposal of regulations under the groundwater injection program within 180 days of enactment of the law.

In addition, the House bill spells out provisions for the regulation of bottled water which is not mentioned in the Senate bill. Bottled water becomes increasingly important after people lose their confidence in the public water supply system and turn to bottled water as an escape.

Setting levels as the Senate bill does, specifying that the best of available technology must be used, may end up in meaningless and nonenforceable standards. The House bill offers an incentive and innovative development by stating that the drinking water regulations must be amended when other technology or treatment techniques permit attainment of a level closer to the recommended maximum level of contaminants.

Andrea M. Hricko

Another report by the Michigan Department of Public Health has stated that the semi-public water supply program has needed strengthening since it has not received the attention it undoubtedly deserves. I understand from Mr. Vogt that Michigan has a groundwater control program and has already had a chance to do work in the groundwater area that probably a lot of other states have not attempted to do.

Hazards in the water supply must be detected before there can be eliminations. Michigan will also need separate laboratory services for the detection of trace metals, toxic substances, and pesticides. Such detection is currently not being done.

Action must be taken soon to protect us from a potential epidemic situation with regard to drinking water. Again, health agencies and consumers should follow the drinking water legislation and encourage their legislators to pass a strong bill. Once passed, consumers should monitor implementation of the law in the same way they monitor the Occupational Safety and Health Act.

In closing, I would like to present eight general questions for you to consider, among others, in your discussions.

One — what new role can your agency, business, or organization play in aggressive solutions to the three problem areas I have dealt with in my talk?

Two — how can you help develop a personal health services delivery system in which the diagnosis and treatment of occupational illnesses and injuries will be coordinated and integrated with all of the health services provided to a worker and his family?

Three — I would like you to consider whether Michigan has a sufficient base of technical and epidemiological knowledge to know if certain types of chronic diseases — like bladder cancer or heart attacks — are appearing in certain occupational or neighborhood clusters. If a sufficient base of such knowledge does not now exist, how can this base of information be improved?

Four — in what additional way might you establish working relationships with students or the faculties of Michigan's schools of public health to work on these problems? In this regard, are the schools of public health responsive to the local environmental or occupational health problems that arise?

Five — will adequate funds be available to handle an increased burden of labor services for toxic identification work when the safe drinking water legislation is enacted?

Six — does the consumer or the worker have a sufficient voice in shaping solutions to environmental and occupational health problems? What additional steps could each of you take in those areas that I have gone into in depth to ensure that citizen participation in legislation, standard-setting, and enforcement of standards will improve?

Seven — what are the methods for upping our priorities in concern for the environment? Example — how can we balance the cost for pollution control of drinking water with the benefits in improved human health? Can actual equations be set up to determine the dollars saved in human costs, or is human life so valuable as to render valueless the cost-benefit analysis?

Eight — how stringent should environmental health regulations be? Should the regulations only reasonably protect the public health? Should cost be a consideration in setting standards for specific toxic chemicals, i.e., should the cost of removal be a consideration in cases where the chemicals have drastic chronic effects on man such as cancer, or must there be assurances that these toxic chemicals are removed according to the best technology available or removed regardless of cost in such drastic situations?

Again, I thank you for the opportunity to meet with you here today. Best wishes for success in your discussion groups.

RESPONDERS

JOHN E. VOGT, Chief, Bureau of Environmental Health, MDPH: Certainly our speaker has laid the groundwork for a very interesting discussion that should take place in the next couple of hours. Rather than respond specifically to this fine presentation at this time, I'd like to use the few minutes that I have to throw out a concern of mine which has been developing.

We have heard about the credibility gap in various quarters — in government, in industry, the media, and elsewhere. I have been developing a fear that a credibility gap may be developing in the drive for a quality environment. I say I fear this, because this may adversely impact on the momentum the environmental movement has generated, and this could be disastrous.

It seems that similar expressions of concern are emerging elsewhere. A regional executive of the National Wildlife Federation is quoted as saying in August at the Midwest Environmental and Consumers Protection Seminar in Missouri, "We are suffering in this country from an environmental credibility gap and the people do not know who to believe." He stated further that the average American citizen is confused by proportioned scientific rationale that mixes philosophy, politics, and opportunism with the analysis of factual research data. The confusion leads to disgust, and then rejection, when professionals of similar long-term experience come forth with diametrically opposed conclusions from an analysis of the same environmental research data.

John E. Vogt

Along the same line, an article in the September issue of the Archives of Environmental Health of the American Medical Association is reported as stating that unscientific exaggerations and demands for instant results are the greatest deterrents to solving environmental problems. The article, based on a report by a research team from the Industrial Health Foundation in Pittsburgh, stated: "A major problem is that some people are calling some situations hazards when they are merely nuisances." The researchers stated that the introduction of harmful, impure, or undesirable substances into untainted air, water, and soil is "contamination," but the result may be "negligible." They added that only when these substances render the atmosphere or water foul, or noxious to health or life is the word "pollution" properly applied.

Dr. George Symons, President of the American Waterworks Association, in a keynote speech in June, pointed out that many water supplies in the nation do have inadequacies, and the AWA's actionable program had as its goal their elimination to the greatest extent possible in the shortest possible time. He stated that when the Environmental Protection Agency put numbers on the inadequacies, the news media and others equated them to "unsafe, unpure, poisoned water." He observed that no water supply professional would ever draw such conclusions. Dr. Symons further stated that the EPA officials testified before a Senate committee on drinking water legislation that studies in two Massachusetts cities had shown that viruses were in the water, and the EPA extrapolated from this test that 44 million persons in the country were exposed to the same conditions. He stated that a later in-house EPA report admitted that the sample had been contaminated. Yet for months, those statistics were being quoted.

The August 20, 1973 issue of the publication "Air-Water Pollution Report" reported that the State of Virginia Environmental Coordination Act has jeopardized citizen participation in policies by weakening the environmental advisory boards and transferring important initiatives to new centralized agencies. Testimony before the state's Advisory Legislative Council brought out that the State General Assembly may have been misled while the legislation was being prepared and was under consideration during the legislative process, noting that the wording was vague and did not specify lines of authority or provide safeguards against abuse of authority.

I have been interested recently in reading many other examples to suggest that credibility in the environmental movement has suffered. However, in the interest of time, I won't pursue them any further here.

I would like to suggest just a few simple guidelines that I think we all might consider.

One: testimony before the legislative committees at both the Federal and State levels must be based upon facts and sound, considered judgments.

Two: Federal and State agencies' rules must be technologically sound and administratively reasonable.

Three: program implementation and enforcement must be objective and uniform.

Four: the scientific community must not speculate on the probable outcome of a research project before all of the data is in and analyzed. Scientific and professional judgment must not be compromised for the opportunistic approach.

Five: expressions of citizen groups must have balance and recognized alternatives that need to be considered.

REP. RAYMOND J. SMIT, State Representative, District 52: We certainly have had some food for thought today. I would like to reflect on perhaps which hat I should wear in this discussion; I guess I am perhaps the most confused person in the room. I don't know if I should talk to you about our State Legislature and our approach to these kinds of problems, or from the standpoint of the environmentalist who is very racked up in the environmental movement we have been developing, or from the standpoint of the design engineer who has been responsible for the design of some of these horrible water supplies we have heard about. Maybe I can combine all into one little package.

As we look at our situation from where we stand now, we see that we are in what has been termed an environmental movement, and on the heels of that comes along the consumer protection movement. However, as the political process works, it moves in cycles—a cycling process—a process like the swing of a pendulum. While we have seen the pendulum swinging in favor of environmental legislation and environmental programs and strict enforcement in the past, I submit that we are at about the extreme of that swing, and it's starting to come back with a crunch. The question is, how far will it swing in the other direction, and will the pieces be picked up sufficiently soon that we'll be able to retrieve any of the gains we have made in recent years in the environmental movement? This bears very directly on what John Vogt said about credibility.

This pendulum can swing very erratically when we start getting away from credibility and honesty in the presentation of our issues and our facts. In fact, if the political process responds to information and attitudes that have been developed without credibility, the risk is that the pendulum will be kicked out so far that when it comes back again it will kill the very effort that you were trying to develop. So we have a delicate situation here in our political process, one that has to be handled with some degree of balance—some degree of integrity

Rep. Raymond J. Smit

—in order to get the right kind of result that will have lasting benefit for our people.

Taking some of the programs and items that are long overdue for state and national attention, when you deal with safety in the working place and drinking water quality, these are programs that have a legitimate need. The question is, can we keep the thing in balance so that we maintain some credibility to our program? As you look at where the environmental movement is at the present time, and you realize that we're just now starting to see some of the counterattacks developed by opposing forces, you have to ask yourself—how successful will that be, how successful is the fuel shortage issue going to be in destroying our efforts in air pollution control? A very important problem and issue, and one that begs for accurate data and facts, is—is it a contrived shortage or a real shortage? Are the pollution control standards that have been advocated really necessary, or are they somebody's pipe dream of what they would like to have for their program? This gets into this whole credibility issue.

We get into the problem of safety in the workplace and, as I have indicated to you, this is a long overdue legislative program, both state and national. Yet we hear horror stories coming out about this kind of a program being used by the adversaries of the business community to force their programs, their efforts; harassment taking place during inspection, and large fines. We hear about the importance of enforcement, and is enforcement in itself—the levying of large fines and putting people out of business—a desirable social end, thereby creating unemployment and additional welfare problems. Is that solving anything for us?

I think that's a very important problem we have to keep in perspective while being aggressive on the basis of fact not fancy. It seems insignificant to me, for example, to go around a manufacturing plant and cite someone for having fire extinguishers more than 40 inches off the floor, giving citations for this type of thing rather than what we need to be looking at—the real safety hazards for workers in the working place. We have to really use some judgment in these things.

I am reminded of the poor small businessman who came to me not too long ago and said, "They're running these inspections on me and I don't really know where to turn. I went to the Federal people and the State people and tried to find out what I am supposed to do to comply with this new Act that they're talking about—all these tremendous fines for it—and all that I can get is this mountain of paper, and I can't begin to read this mountain of paper and get an understanding of what I'm supposed to do." And yet, he is expected, of course, to know what to do, and expected to understand that mountain of paper. So I think we have a problem here again of people taking things in balance—of addressing the problem from the perspective of how our society exists today, not trying to put the entire economic system out of balance to rectify the problem we have, but to bring about meaningful results in improving the working place. There is a real challenge for the people administering that Act.

When we look at the idea of a drinking water law, here is the whole area of drinking water that has been a step-child to the environmental movement up until now and one that has needed to be addressed. Whether or not it needs to be addressed in the fashion that Congress is looking at it, I think is highly debatable. It is a problem that needs to be addressed, for we have situations where communities, for example, have put improvements to their drinking water systems on the back burner. Why have they? They have been under intense pressure to do something about sewage pollution problems and, with their economics what they were, they put first things first and put water supply on the back burner. We have been developing serious problems because of that, but I submit that the solution to the problem is not to upset the entire process of government, but rather to get a program that will work and will move and will provide meaningful improvements of the drinking water supply.

Quite frankly, I would heartily disagree with the conclusion that a well designed water treatment facility today only removes bacteria. I think that is a misstatement of fact; I don't think that is the fact at all. However, the problem we do have is that we have communities suffering with overloaded treatment plants that are not doing an adequate job of treating. Because they have been putting priority in other areas, we have not been doing our job of bringing to the public the information they need to stress the importance of drinking water as a product. When we look at the conclusion that seems to prevail—that the basic wisdom for solving these kinds of problems, safety and health problems, rests at the Federal level . . that if we have the enforcement of occupational health here at the State level, we aren't going to do as good a job as the Feds will do, I would like to submit that the history of performance at the Federal level refutes that conclusion. And I would argue very strongly that this is not a proper conclusion. All we have to do is recall the problems we have had in Michigan over meat standards with the Federal level to realize that it is not true that what may be good for the country as a whole is good for Michigan. And that is why it is absolutely vital that we maintain a strong program here in Michigan.

The fact that you have a national water pollution control program has not solved the water pollution control problem to our satisfaction here in Michigan. We have the Great Lakes in Michigan; there's not another area of the country that has, and we put a very high priority on protection of those Great Lakes. And so we're very concerned when the Federal government says we cannot enforce both safety standards and pollution standards in Michigan, that they're going to preempt us and let watercraft continue to discharge overboard until they get around to getting some standards and treatment processes we can agree to. And the boat interests were very successful in lobbying in that area over our objections. So here we stand as a state that really had a much better idea or law and was ready to go ahead and implement it until Congress decided to the contrary.

We see again in the water pollution area that the Federal Congress came out with a grant-in-aid program that was designed to solve all the problems of the world as far as sewage treatment was concerned. I have watched that program professionally since 1956 when they first started the program. And what has happened there—a credibility gap again—the Congress claims they are go-

ing to do something but they actually do not perform. They say they are going to solve the sewage problem and yet they don't put any money into it. So what happens is that we have everybody waiting for that share of a sewage treatment grant for sewage treatment improvement, thereby delaying needed construction until they come along with the federal dollars. So it's a nice way to control things from the Federal level, but it has not resulted in a speedup of sewage treatment construction in Michigan. It is my observation that it has severely retarded it. And I can see the same thing coming down the tracks when we talk about drinking water standards. As John Vogt and I have discussed for years, they're talking about a pittance of money that they're going to put into drinking water programs, and that money is to act as a carrot of inducement to communities and states to do something about their drinking water when, in fact, it will act as a retardant to doing something.

If you're not prepared to do the job and do it right, then there is no reason to upset the apple cart and retard the progress that is being made in other quarters.

At the time the Congress passed their Clean Water Act they were going to put $800 million into the program for sewage treatment grants for two years. The President came back and cut it to $400 million in two years, further retarding a much needed program. Examine the $800 million that Congress originally put into the thing for two years and $1.3 billion the third year. If you examine the dollars that they were talking about there, and then look at the action Congress took, all the additional goodies that they threw into the Act, there is no way you can finance the necessary improvements in storm sewers, lateral sewers, property acquisitions, and all the other goodies that were thrown in at the last minute, for the money they were talking about. We're talking about four and five times that much money, so then you have a curtailment of the program from what is actually needed—a severe curtailment of progress in water treatment.

In Michigan, the best we can do is to approve grants for some 19 construction projects in one year when we have a backlog of 300 construction projects in one year. That gives you some idea of the magnitude of this problem, the dimension of it.

And so . . this idea that the Federal government is going to solve all of our problems for us is, I think, sadly wrong. I think, as a matter of fact, that the stimulus must come from all levels of government and from citizen groups. It must come from the local government, it must come from the State government, it must come from the Federal government. Local and State may think that they're the big guys, that they can do it all. The Federal guys must think the same thing; the bureaucracy must think they're the greatest thing to come since Christ. And local units of government think, "We're at the local level and we really know what the people want and need," whereas, as a matter of fact, you can point to case after case where one level of government or another has fallen down on the job, and fallen down seriously. For that reason, it takes a combined cooperative effort of all levels of government to bring these things about for positive gain in our environmental efforts and programs.

ANDREA M. HRICKO: Everyone here has been talking about the credibility gap, and I would like to make a couple of comments with regard to Rep. Smit's reaction to my talk.

One, we've heard much about the large fines and harassment that have resulted from the Federal Occupational Safety and Health Act. Mr. Smit talked about the incredibly large fines and the businesses that are being closed down by the Act. To set the record straight, I would like to announce that the fine, the average fine, for 1972 under enforcement of that Act was $22.00. And I think that this is hardly enough to close down any business.

Secondly, with regard to the statement that my entire talk focused on the need for Federal Control, the Safe Drinking Water Act, under both bills, would allow states to enforce drinking water quality standards. The Federal government would only move in if a state failed in its duty. And the Federal government would give the state 30 days notice that they were going to issue a court order for the water supplier to comply with the federal standards.

So the Federal legislation would not advocate a total Federal take-over of the drinking water situation, but would only move in if the State failed to do its duty.

I recognize that the State of Michigan is probably far ahead of most other states, because of its concern with environmental affairs and because of its Great Lakes. Unfortunately, other states do not have the same type of concern about the environment, the water or the drinking water, as the State of Michigan does. And it's because of those states that Federal legislation and control over state programs is necessary.

Community Health

One of the roads to human well-being

by Herman E. Hilleboe, M.D., M.P.H.

It is essential for those of us who talk about the very practical aspect of health—Community Health—to have some concepts of what we mean. So I would like to take some minutes to conceptualize health, and to conceptualize some of the elements of that dirty word "planning" which, whether you like it or not, must be done, and to talk a little bit about what the communities must be concerned with when they are going about, first to define the health problems, and then to find some alternate solution to them.

First of all, let me give you a concept of Community Health. To me, there is one part of Community Health which is frequently left out that is just as important as the other two.

We know that good personal health is important—in other words, the care that is given to the individual or groups of individuals—and we know that environmental health is important. The third aspect—the one so frequently omitted—is what we call health-related social problems. If you don't do something about health-related social problems in a given community where you have people of lower socioeconomic status, you can forget about any benefits from the things you do in health. It just doesn't make any sense!

I like to think of this as a triad of Community Health, these three things, which is another way of saying I am hoping that in your discussions on Personal Health and Environmental Hazards to Health you will bring in the social aspects to health which are so important.

I'll never forget some of the orthopedic clinics I used to attend when I was first working in Minnesota after being trained in pediatrics. The orthopedic surgeon from a wealthy part of Minneapolis told a poor little woman from a small city, who didn't have very much money and was on relief, that her child needed some good red beef, that she should go to the meat market and get some beefsteak, preferably sirloin, scrape the meat off and feed it to the child five times a day. Probably this woman hadn't had a piece of beefsteak in her house in months, and obviously she wasn't going to do anything about scraping some beefsteak, or even getting it in the first place. So, this was one of the things about her social environment that greatly influenced health. Therefore, one has to consider the social status of people, some of their problems, before recommending what should be done.

The second concept I would like to speak about very briefly is . . . what do we mean by health.

I'm sure you appreciate that I'm not making definitions, because I don't like definitions for the simple reason that you get people into arguments. I may define something one way and you may not like it, and then we have an argument going. But I feel that if I give you a concept of health which I have learned over the years from colleagues and from working with it, then when I talk about this concept I'm telling you what I mean when I use it. If you have a different concept of health, and you tell me what it is so I can understand it, I'll accept it and I won't argue with you because whatever you talk about I am going to think of in your conceptual context. When I talk about it, I want you to think about it in my frame of reference.

This is why I think we need to concern ourselves more with the conceptual approach to health. If we perceive of something in this way, it becomes a part of our intellect. It is then part of us and will stick with us, unlike something we have memorized as a definition or whatever.

ABOUT THE AUTHOR

Dr. Herman E. Hilleboe of Tampa, Florida is Clinical Professor, Department of Community Health and Family Practice, University of Florida Medical School and a visiting professor in Health Administration at North Carolina University School of Public Health.

Dr. Hilleboe received his M.D. degree from the University of Minnesota Medical School in 1931. He added a Masters in Public Health from Johns Hopkins University in 1935.

From that time on, Dr. Hilleboe was actively engaged in the field of public health, working for the State of Minnesota, the U.S. Public Health Service, and the State of New York (1935-1963). He served as the Commissioner of the New York State Department of Health beginning in 1947, a post he left in '63 to join the teaching staff of the Columbia University School of Public Health in Administrative Medicine.

Retiring from Columbia in 1971, he moved to Florida where he continues to keep active with the aforementioned Florida and North Carolina teaching activities.

In truth, a concept of health should include some very definite things. I like to think of the concept of health as being comprised of three parts.

The first one is what we call human well-being. Human well-being has three aspects—social, mental, and physical. I won't go into detail because you know what these are. But in order for human well-being to be attained, one needs to know something about human behavior, as human well-being is influenced by human behavior and vice versa.

Then what are the principal aspects of human behavior that we're concerned about? I think there are three. First, the knowledge that an individual has. Second, the attitudes of the individual toward health, toward himself, and toward his welfare. Third, the behavioral practices of the individual toward other persons. So now, we begin to get a concept of the interplay between well-being and its three major components.

The psychologists have a very fancy term for knowledge. They call it the "cognitive domain." But I'm just a simple health officer and I like to talk about knowledge; I don't talk about cognitive domain. The psychologists, with all due respect to them, talk about attitudes as the "affective domain," and they talk about the third area as the "action domain."

But really, we're talking about knowledge, attitudes in practice, and how they inter-relate.

The third triad, in giving this concept of health, that I think we should bear in mind in our discussions is the focus of health. And here we frequently leave out one of the three major foci. The first one, naturally, is the individual. The second one is the family, because the individual is usually a member of a family, and you can't separate the health of an individual or his illness from the family where he lives and where all members of that family are affected if it is an illness of any concern. The third aspect, of course, is the community.

So if you think of the focus of health as the interrelationship of the individual, the family, and the community, you now have three triads to consider. This is what we mean by health. If you leave any one of them out, you're really not talking about health. You're talking about only a part of it, because people who are concerned about physical defects forget there are social problems associated with physical defects, and some terrific emotional problems. Take a woman who has cancer of the breast, is married and in her prime, and suddenly loses a breast. Even the cosmetic effect is a shock. The fact that she's got a disease which may kill her before her time is also a terrific psychological shock. To look upon her physical disability in terms of the fact she has lost part of her body and by doing so may live longer, doesn't take into consideration, really, the mental and emotional problems which are related, nor the social problems. What I'm saying is, don't leave any of these out when you're talking about health.

Let me go on quickly to one or two other concepts.

I know that people don't like to talk about planning. And I know that users of health services particularly like to think, "This is something that a bunch of high-powered experts have figured out to fool us and I really don't think too much of it; why don't they just find out what the problem is and try and find a solution to the problem?" But in this day and age of health, any programs or projects that are developed without good planning have a good, certainly a 75-25 percent chance of failing for the simple reason that the factors behind success were not considered.

If you look at the problems, know what resources you have and develop objectives based on them, then look at alternative solutions, and then proceed—really, you have a good plan whether it affects your home finances, the way you run your business, or the way you carry out a health program. No businessman would just step out and decide he wanted to buy a building on a corner and set up a store. The fact of the matter is, business is very carefully planned with a profit motive and all factors are considered. They spend a great deal of time planning and then proceed, see how it works out and adjust it as needed.

So I would like you to have a concept of planning which takes into consideration all of the factors. In this case there are elements which are pretty clear-cut.

We should start health planning by looking at the problem we're trying to do something about. We know something about its extent and characteristics, but we need to know details. It may be a problem in environmental health. It may be a problem in personal health. It may be a problem in the social aspects of health. One must look at the problem they're trying to do something about, either in a broad or specific way. Then, after you've looked at the problem, you have a notion as to what your objectives should be to get something done about the problem.

But don't start with the objectives—start with the problems! It's so easy to put the cart before the horse and say: "Everybody knows about VD. We've got VD all over the place. Let's set up some clinics in six different places and hire some doctors and nurses, and let's get going. We've got to spend this money; if we're going to get it from the legislators next year, we've got to spend it all this year. So let's hurry up and spend it."

At the end of two years, somebody is going to come up and ask what they got for their money and you're going to say: "We had 'so-many' clinics and 'so-many' visits." But if they ask what you did for the morbidity and mortality from VD (particularly the morbidity, as people seldom die from these diseases), your answers are going to be very poor, and suddenly your money gets cut off after two years. So if you want to avoid that, look at this thing rather systematically.

The second thing in conceptualized planning is a very practical thing for all of you in your own affairs as well as health—the resources which are necessary to achieve the objectives related to your problem. The three principal resources, obviously, are money, manpower, and facilities and equipment. So, to do something about your problems and objectives you must have the resources.

The third part of your concept of planning has to do with what we might call constraints and initiatives. I mention both constraints and initiatives because, usually, constraints occupy most of our attention—do we have authority to do a particular program, what are the attitudes of the people who provide most of the money, the providers, the users?

As for constraints and initiatives, whenever you put together a health program you've got to have authority to do it; otherwise, you have no business doing it. Secondly, there are the attitudes of all the groups concerned—the providers and the users, and a lot of people in between. Thirdly, you have to look at the standards of care in the particular community where you are working at a particular time and for a particular population group, because each community differs from the others. What works in one community often will not work in another. These things, of course, are largely constraints.

Initiatives are also important. For instance, I'll never forget when I was working in the New York State Health Department and 200 mothers of 200 children with

cerebral palsy came in and demanded that the Governor give them some money to care for their children, to do things for them medically. And they wouldn't leave until they got the money.

I suddenly got a call saying we were going to get $750,000 for children with cerebral palsy. I said, "Look, we don't have the staff or the facilities for care—the occupational therapists, the specialists, or clinics, or anything. Will you let us have a little time to make some plans, train some people, do some things?" He said, "You have no choice; you have to spend it in twelve months, and you spend it or you don't get anything next year." So the only thing we could do . . . in that situation where we were confronted with an initiative which we love to have but don't get very often . . . was to build a wing on our rehabilitation hospital for children with cerebral palsy. This satisfied the mothers, satisfied the Governor, and satisfied the legislators. And we saved some of that money to start training people and get clinics set up.

The second year came. We had spent $750,000 and now had a good clinic but no staff for it, which meant probably another $500,000 a year. This required setting aside several hundred thousand dollars a year to run the clinics. I told the Governor we didn't expect it to cost $750,000 per year, but the truth of the matter was . . . either we just leave that wing vacant, or we do these other things.

So what I'm saying is, look for initiatives as well as constraints, because every once in awhile you will run into a gold mine . . . not every day, but once in awhile.

I mention this because these three things are very important. And the thing that pulls these three things together—problems and objectives, resources, and constraints and initiatives—is the planning process itself.

The planning process is really not very complex or complicated. The businessmen who are sitting in this room know that the processes of management and organization in business can be applied to health. There's no reason in the world why they cannot be. So part of the planning is organization.

The second part is the science and technology involved in what you're trying to do something about. Medicine changes so rapidly that one has to keep up with the science and technology which bring about those changes.

I remember many years ago when we first started having a serum to treat pneumonia. We developed our laboratories and established a tremendous program. Then somebody came along with sulfa drugs and the whole serum program went out the window—not in two years, not in one year, but in three months. That's exactly what happened. So one has to be prepared to keep up in the planning process with changes in science and technology.

The third thing—and this is a critical issue—is some kind of information system so you can get the data you need to accomplish everything else in the planning process.

Now, I've taken fifteen minutes to go through some of the concepts which I think are important. These are things against which you have to consider some of your problems.

I like to separate the problems of community health into two areas. First, what we call generalized health care. This is where you do everything that needs to be done. And believe me, there aren't very many communities in this country where this is possible. There are some, and there are some industries that are doing this, plus some areas where they are attempting to do it.

Then we have specialized health care, which can be broken down into three principal areas: particular kinds of services like emergency medical services, health centers or health maintenance organizations; the special population groups like the children and their mothers, and the migrants; and the third area or grouping which we shall call human ailments.

I say human ailments because it is not enough to talk about disease alone. One has to talk about diseases, about injuries, about defects, and about dysfunctions—human dysfunctions—because one of our major problems in health, of course, is mental disorders. And I mean mental disorders to include both illness and retardation. So we have to think of this third special area of delivery of health services as including the major diseases, injuries, defects, and dysfunctions.

When you're looking at your community, you're going to have to decide what the major problems are. And again I remind you that this is a normal part of the first step of planning. But when you look at the major areas and decide what they are, then you have to look at resources. You should look, too, at the broader area

Herman E. Hilleboe, M.D., Clinical Professor, Department of Community Health and Family Practice, University of Florida Medical School; and Visiting Professor in Health Administration, North Carolina University School of Public Health. Dr. Hilleboe died suddenly at his home in Tampa, Florida April 11, 1974.

of supporting services because these include the resources that I mentioned—the manpower, the facilities and equipment—things of this sort. And they also include such things as the managerial units—a place. You've got to have a health agency to run the operation—an official or voluntary agency, depending on the community and which group is prepared to do it.

So you see, now you're beginning to match your problems with your supportive services within the limits of the resources you have available.

When you've decided what you're going to try to do something about, you have to think about intervention activities—medical interventions, we call them.

What do I mean by medical intervention? I'm talking about the basic things we've learned from the epidemiology of human ailments that should be included in a comprehensive or complete program. There are five steps: first of all, trying to prevent the problem if possible; next, screening and detecting the various human ailments early enough that you don't get into too heavy expense and have no chance to do something; third, having a facility for diagnosis and treatment; four, having rehabilitation resources when indicated or needed; and five—the thing that's often left out—what we call continuing care.

After the surgeons, the radiologists and the other experts have finished their work, you've still got a patient. And that patient is going to require such things as housekeepers, somebody to clean the house, somebody to help them out of bed, somebody to help with dressing. This doesn't take a doctor and it doesn't always take a nurse. I would say that about 80 percent of continuing care services are nonprofessional in nature. Yet if you leave these things out of the important problems like cancer, heart disease, or stroke, you're going to lose the benefit of all the money you've spent getting these people up to the point where there is really not much more you can do except to occasionally see them.

So think in terms of these areas we call intervention activities.

Now then, if you will conceptualize what to do in a given area once you are into the planning and have decided what you're going to work on—and I should be more specific, i.e., what problems you're going to work on, what objectives you're going to try to achieve, and what resources you have—then you need to see if you can apply all five of these interventions. If you can't, use as many as you can.

If you do such a thing as screening—let's say pap smears for cancer of the cervix in women—and through studies you learn that you're going to find cancer of the more serious invasive type in the older age group, and you're going to find it more often in the socio-economic classes where they're at a lower level and haven't had the opportunity for this kind of care. . . . At this point you're in a position to say: "Okay, let's not do just pap smears and then refer the patient to a physician if it's positive or suspicious," because you've only done one of five things you should do. And so, as soon as possible, do whatever is necessary to get the follow-up done. You dont' have to do it yourself, and if the medical society wants your work, I would certainly do it whatever way they want.

But somebody has got to keep a record of what happened to that person with a positive pap smear. If a record isn't kept, and if somebody doesn't follow it up, this is criminal practice of medicine, I don't care what you say, because you've given a woman a false sense of security. She has an examination; she's given a little slip. She may not understand what it means so she goes home and tells her husband, "I had a careful examination today and the doctor didn't do or say anything to me, or didn't give me any treatment, so everything is fine." Yet she may have a positive smear which on biopsy will turn out to be cancer *in situ,* which means limited to the surface, and which can be cured in 98 percent of the cases without any question of doubt, if properly treated. But if not treated, it very often—more often than not—develops into invasive cancer, gets into the uterus and body. Then, if the woman comes in with symptoms, we're in trouble—deep trouble—because not very many of these have too long a survival rate. And not too many of them can be cured. The only way we measure cure is how many years they live after there is real trouble.

Now, let me bring up certain points I think might be worthwhile. I'm going to raise mostly questions without answers, because I think the answers should come from you.

I think, first of all, that it is quite essential to bear in mind that unless the users of these services understand what we mean by these different health activities, and unless they understand them enough that they can accept them as part of their individual lives and support them through their elected representatives, you aren't going to get very far. And I'm not talking about pamphlets and posters and exhibits; I'm talking about "conceptual approach teaching" of people by every conceivable means you can think of, so that you will get understanding, and acceptance, and support.

Now, *how* you do this is something you will have to talk about, because we haven't given enough attention to this. We've thought of the provider and not enough of the user, so let's see what you people who represent citizen groups have to say about how you would go about doing it.

When you get to some of the broader questions about whether the present State and local health departments are organized and managed in such a way that they are ready to meet the problems of the '70s, I think the answer is very simply "no"—not if there's any question

about it. Because medical practice changes, science and technology change, health departments should also change to fit the need. So I would like to have you discuss the ways in which you think health departments might change in order to handle some of the problems they're going to be facing.

For one thing, we're going to have to get into the question of accountability. We must face up to the necessity of stopping some things that are going on that are not producing results. It's terribly hard to abolish a division when somebody has been the head of it for ten years, but this is exactly what must be done when a program is nonproductive. So you had better take a look at this aspect.

One other thing which I think very important is that we do have a Federal policy on health which is very broad, but we don't have a Federal Plan to back it up. What good is the formulation of a policy without a plan of operation to carry it out?

I mention this because states and local communities often pattern their programs after the Federal government. This is only natural, and uniformity is often useful, but I think that on this score we have to be critical. I can do this because I'm not a Federal employee. I'm not being personal, but I think we have to have some Federal leadership in pulling together in the Federal government those things in health which will carry out the policy directives that have been established at the higher level.

The next point I would like to have you explore is the question of whether or not the State as a large community (because a community can be any size), whether or not the time has come in Michigan—and I'm not saying it has—to think of combining the major operations. I'm thinking particularly of health and social welfare, because they are so inter-related and have so many things in common. You'd better look at the pros and cons of this.

Actually, in the majority of states the governors and legislators—the legislatures, I should say—have broken off an environmental section and have set it up separately. And there has been good reason for this.

All right, we accept this. The health departments have been left a few regulatory functions, a few inspection functions, but the major problems of environmental protection are now separate from the health departments. The old days are gone. Let's not waste time fighting, arguing and trying to get the programs back. Let's do what we should in the other fields.

Secondly, I think there is need in the local communities—I'm speaking of the cities and counties or combinations of them, rather than the State—for voluntary and official agencies to sit down and compare plans.

I don't mean to attend a luncheon meeting, have two martinis and a big steak, sleep during the speech, and go home at two o'clock saying: "Boy, wasn't it a wonderful meeting and wasn't that a fine speaker?"

That's not what you call matching plans! That's an advisory committee meeting so each organization can say, "We worked very closely with our offices, and we're good friends, and everything is fine."

Well, everything isn't fine! What I'm talking about is writing out a plan with five agreed-upon headings, or six, or four, and sitting down with the leaders in each group and comparing them; then deciding—we'll do these things in the official agency, you do these in the private agencies, and in the grey area in the middle, depending on the local situation, either of us can do it. But we're going to meet once a year, and we're going to match plans.

Do you know how long this takes? Not from 12:00 to 2:00; this takes three days of sitting down and meeting, and talking, and working, with a great deal of advance preparation. This business of matching plans is particularly important.

One or two additional things. In this game of planning, it's true we have to think primarily of the year ahead of us in order to know what to do, but we should also think in terms of where this will lead us. What we do in the next year is going to lead us in the next two or three years. We, in health, have got to face up to deciding what we're going to do in the 1970s, and that means 1974 through 1979. So start doing some talking about where you expect to be in five years, where you expect to be in 1979.

When it comes to the community groups, it's a tough job trying to persuade the power structures in the community and the special groups to begin to combine some of their pet programs, things they have been doing and things they want to do. How do you do this? I don't know, but I think you need to discuss this, and you need to speak out and say what should be done. I'm saying you need to get the users and some of the organized user groups—the church groups, the PTA, the unions, any user group that's concerned with health—to get in on the planning, and to get in on putting the plans into effect. And also, to get into the evaluation of what is accomplished.

It seems to me that if this is done, then we will do what we started out to do, and that is to use our resources allocated to health, scarce as they are, to improve the health of the people, which is our initial objective, not our primary objective. You know what our main objective is in health work. It's very simple—to improve human well-being. Health is only a means by which we can reach the end result of human well-being. It requires looking at personal health, environmental health, and health-related social problems.

Personal Health

A study in complexities by Robert van Hoek, M. D.

I want to express my appreciation for being invited to attend this conference. I find it very valuable in my current position in health services research and development. It gives me an opportunity both to continue to be kept current on what the problems of health services delivery are from the standpoint of all the people at the local level, as well as giving me an opportunity to discuss some of the issues that we are directly involved in, in trying to help improve delivery for all citizens.

The two subjects of community health service and personal health service are clearly closely inter-related. I'd like to give you a definition of personal health service, not because I believe it is a good definition but because it is good from the standpoint of the discussion I propose to have, as well as for giving some focus perhaps to the discussions of the work groups. With this limited definition we're really dealing with some of the major problems of the delivery of health services today, with some of the major problems with resources to provide services, and the increasing costs of providing those services.

I'd like to discuss personal health services from the standpoint of the delivery of medical and dental care to individuals and families. Such care includes prevention, diagnosis, treatment, rehabilitation and maintenance care, with primary emphasis on the more traditional forms of private and public delivery. The problems in health services delivery, and particularly personal health services, have been placed in three categories which you may have seen in many items of literature and at many meetings you may have attended. These three categories again are used primarily for discussion purposes in order to focus on specific problems and specific mechanisms for addressing those problems. And these are: access, including availability; quality; and cost. The problems of these three categories are obviously not mutually exclusive. They're not easily identified and therefore I would like to address them separately, and then bring them together later in this discussion.

Under access and availability, we're dealing with the problems of the geographic location of the delivery of services. In dealing with geography—the location of the services—one of the major problems is the identification of the need for those services. Frequently, services are relocated or placed in situations which are convenient to the provider of the services, or convenient by the nature of the organizational and administrative arrangements for providing the services, rather than through definition of the need for the services. We're talking then about what it is that the population as a whole requires and what it is that specific target populations may require. Similarly, with regard to geography, we have to deal with the problem of manpower—the distribution of physicians and related manpower. And in a category such as physicians, we even have to deal with such issues as the types of specialties of the physicians, and whether or not they are adequately distributed and effectively utilized in delivering services. And thirdly, there are the questions of the types of facilities needed in which those services should be provided, i.e., whether ambulatory care facilities, hospital, or other types of inpatient facilities.

Access and availability must also be determined and measured by the needs of the individual, by the needs of the family as a whole, and as I said earlier, by the nature of the problem to be addressed. When we deal with access and availability, aside from the question of geographic location and the types of services and the types of resources available, we also must consider what barriers need to be eliminated, because the presence of a delivery system and the availability of the services may not necessarily mean that the individuals have access to that system. Here we are dealing with such problems as eligibility requirements—whether those eligibility requirements are determined by the age of the individual, by the sex of the individual, by the income of that individual and his family, or by some other measurement of social status which may have been administratively established through one mechanism or another.

It's clear from studies that have been done through various mechanisms locally and nationally, there are significant problems with access and availability. There have been attempts at solutions, both at the local and

national levels. Such attempts have been the development of neighborhood health centers to bring medical and dental care to the inner-city areas that no longer have adequate resources to provide services; the use of allied manpower—physician extenders like physician assistants and nurse practitioners—to try to solve some of the problems of maldistribution of manpower and actual absence of manpower in many locations; the attempt to expand development of health maintenance organizations with the concept of individuals and families being enrolled with an organization having the responsibility and accountability for providing a range of services for a fixed premium so that the cost to the individual and the family is known and can be planned for; the development of family practice training programs to overcome the problems of primary care and to reverse the trend of over-specialization of physician manpower; and finally, expansion of financing arrangements like Medicare and Medicaid with proposals which hopefully would eliminate the economic barriers to the delivery of health services.

I would suggest to you that many of these approaches to the solution of specific problems have not been as effective as they could have been. They have been developed on a piecemeal basis. Many of them were developed with multiple objectives in mind and were developed with limited data to substantiate the appropriateness of the approaches, if we were to look at them from the standpoint of a solution to a national problem or even for large geographic areas.

The neighborhood health centers have indeed provided health care and dental care to populations which were not previously served, but they have also developed significant new approaches to health care which relate very well to Dr. Hilleboe's comments about tieing in a whole range of health services and social services to deal with the broad family of community problems. The problem is that the concept is not financially feasible if the system is not prepared to accept that approach, is not prepared to pay for and recognize such integrated services. And so the neighborhood health centers take on the problem of having to maintain multiple eligibility processes, maintain multiple books to afford multiple financing arrangements, and in many cases the services aren't even covered by any financing programs.

The health maintenance organization concept is a very valuable one, but the experience to date with HMOs has been that they deal with a selected population group. They are not as yet widely accepted by either consumers or providers, and they don't necessarily deal with a community population . . . they deal with selected population segments of a community.

And similarly with family practice training, the question is—are we trying to reverse a tide which is irreversible? Are there other mechanisms by which primary care can be delivered and the manpower distribution problems resolved, in terms of physicians, the development of primary care physicians, and the use of physician extenders?

I would emphasize that we have learned a great deal from studies of these approaches. We have learned a great deal about the problems of implementing innovative, new approaches to the delivery of health services which are valuable for the future. But we have a lot further to go. One of the primary responsibilities we face in the agency I work for is to provide the data for developing and expanding the innovations and modifications of the delivery system which could work on a wider scale.

The second area of delivery—the second component—is that of cost. And for this, I would like to limit the discussion to the direct payment of bills for medical care, and not deal with a much more important and more difficult issue to deal with—the total problem of social costs, i.e., the cost to the individual and to society for providing or not providing medical care, aside from the actual payment of the bills.

ABOUT THE AUTHOR

Dr. Robert van Hoek is an Assistant U. S. Surgeon General and Director of the National Center for Health Services Research and Development, Health Services and Mental Health Administration, United States Department of Health, Education and Welfare.

Dr. van Hoek received his M.D. degree from Columbia University's College of Physicians and Surgeons in 1953. Two years later he was commissioned in the U. S. Medical Corps. From 1955 to 1963 he saw service with the Air Force and thereafter with the U. S. Public Health Service.

His assignments since 1963, all in the D.H.E.W., have included positions of responsibility in training and research, direct health services, and health services delivery.

Dr. van Hoek holds the Distinguished Service Medal and the Meritorious Service Medal, both awarded by the Public Health Service.

The basic policy since 1965 has been to gradually remove the economic barriers to access to medical care. It started with Medicare for the aged and then medical care for the low-income group. It has been expanded with the federalization of medical programs for the disabled and, as you know, there are a number of proposals to make this a general program for the entire population. The primary issue is not whether there should be some form of program but rather what kind, and what should be the mix of public and private financing.

For purposes of discussion, both the current situation with regard to the financing of medical care and any health insurance program of the future create two major problems. One is that we are currently faced with major inflation, not only in the general economy but specifically in the cost of health care services. The impact of this is that less services can be provided for the same amount of dollars today as last year and five years ago. It also means that the public, through payment of premiums and taxes, is paying a mounting health bill for the same or in some cases less services. And it means for the intermediaries, the private insurance industry and the government, that reserves are being drained which could have been used to increase benefits for capital financing of health care, and for other broadening of health care services.

So, increasingly important to the Federal agencies and the total public is the question—what is the consumer, the public, receiving for the costs involved? At the

present time, as you know, the costs of medical care—expenditures for medical care—are approaching one hundred billion dollars. And over one-fourth of that comes from public funds—federal, state, and local taxes. And, that public fraction will increase with legislation such as was passed recently . . . Medicare coverage of renal disease and other provisions of the Social Security Amendment.

So then, we're faced with the problem in the delivery of health services, assuming that a budget has to be fixed, that health care cannot continue to be an uncontrollable budget item! This means some tough choices must be made on what services can be provided and what services can be paid for . . . questions which will have significant impact on and for the public. It is critical, therefore, that we, as Federal representatives, and the other individuals who deal with health programs, provide information to the public with which decisions can be made in regard to trade-offs.

The immediate short-term solution to the problem is, in essence, price fixing—wage and price control on cost escallation; that is, a limit on the cost increases that can be set by hospitals and other institutions. There is a limit on the increases in charges that physicians can make for their services, but this was done without a comparable price control on the costs of the services—all the input costs to the system like supplies, rental, salaries for employees, and so forth. This creates a margin squeeze which causes a number of things, such as the cutting back on services or the unintentional reduction in the quality of medical care.

So while there is cost control, we're faced with looking not only at the services being provided, their effectiveness and their quality, but at the same time we're exploring new mechanisms by which to pay for medical care. Right now, medical care is paid for primarily through a cost-plus arrangement with hospitals and charges set by the physicians and the other providers.

So the question is: are there other ways of reimbursing for services? Whether those are capitation payments, whether those are payments based on specific kinds of services, they will be explored over the next several years in an attempt to develop a better mechanism for paying for services rendered in the health care system while at the same time maintaining the standards of the services.

The third problem category in the delivery of personal health services is quality. Until now, most of the emphasis and attempts at the measurement of quality of care have been focused on input and process measures. We determine quality by the training and experience and qualifications of the professional, the accreditation of hospitals, and various processes by which medical care is rendered. But we are gradually moving in the direction of evaluating medical care by the results of the care process. Initially, what we have again is a trade-off problem because the standards for the quality of medical care at the present time are sufficicient that they contribute to the costs being charged for medical care.

The question is, is there a way of determining whether the standards are appropriate—whether the medical care process is effective; is there a way that the care can be provided in a more efficient manner, perhaps in different ways of structuring the delivery system, different ways of utilizing health manpower, and so forth, and thereby reduce the overall cost or the unit cost of medical care?

There are two major components of this quality evaluation. One is the quality of the individual interaction in the system; in other words, what is the quality of medical care that is rendered to individual patients or groups of patients by individual physicians or groups of physicians? I might add that this can be extended to the other professionals in the health field besides physicians, and will be, in the long run. The second question is a broader one—what is the specific effectiveness of the system and its components? Is it an effective system? Does it perform in a manner in which is reaches objectives? Does it reduce infant mortality? Does it reduce the mortality due to automobile accidents or an emergency medical system, and so forth? Very difficult questions; a very difficult approach in terms of evaluating the data that we currently have and the data which would have to be collected. But a necessary job.

How are these problems being addressed currently? I've already alluded to some of the ways. The major emphasis at the present time, at the Federal level, is first examination of the various options for a national health insurance program with a specific objective of removing the economic barriers to medical care, essential medical care. And here, as I said before, it's not a question of the need for such a program, but finding the best mechanism and program possible while utilizing the resources and capabilities within the existing delivery system.

The second item, for both the present problem and a problem geared toward national health insurance, is cost control . . . control not just from the standpoint of mixing specific budgets and specific fees or that society cannot tolerate more than a certain dollar expenditure for health care. Choices have to be made as to what will be provided under a limited expenditure, what those services should cost, and what price will be considered reasonable to pay for them. As I have said, there are a number of reimbursement experiments under development by H.E.W. where that specific problem is being tackled.

The third area that we're very much involved in is the whole question: if there is a national problem—a shortage of certain types of manpower, particularly a maldistribution of manpower, both in terms of numbers and categories, is this severe enough that it warrants Federal involvement in the solution to the problem? At the present time, there have been programs to support the expansion of medical schools, dental schools, and other professional schools; there have been funds to stimulate the development of new curricula so that the training of physicians and other professionals can be shortened; and so forth. There have been various incentives proposed to attract physicians into specialties, particularly the primary care specialties, and to attract them into scarcity areas.

There are serious questions being raised at the present time, and those of you who have been involved in the manpower field know that this has been current since the President's submission of the revised '73 budget and the formal submission of the '74 budget. There are major reservations concerning continued Federal subsidy of

medical schools, both for expansion or continued support of medical education, for several reasons. One is that with the increased enrollments in medical schools, and with the population projections available, the need for physicians that had been projected by prior studies will have been met within the next few years. This is strictly a numerical calculation; it does not deal with the problems of what specialties these physicians will go into and where they will practice, or even how they will practice medicine. But the subsidy of medical education will not solve these problems.

We're dealing with what happens to a physician after graduation, the type of post-graduate education that goes into the type practice he enters, what his choices are for locating his practice. What is being examined here is, are there incentives and disincentives which can be developed that will redirect manpower into the shortage areas? There are various options: provide loans to medical students with the loans forgiven if they go into certain specialties or practice in certain areas for a given period of time; provide scholarships to certain students, particularly those who are disadvantaged, in exchange for certain practice locations and specialties training. The specialty boards are already looking into this incentive. They are examining the questions of whether there are too many general surgeons being produced, too many other specialties; how many residencies should be approved in the country; how many people should be trained annually.

Through a combination of federal, state, local, and voluntary initiative, changes will occur. It's only a question of what kind of changes will occur, and how effective they will be. It is particularly important from the standpoint of discussion today and tomorrow that the whole area of manpower planning be explored. I only spoke of physicians—the policy decisions that we face in physician manpower. The same can be applied to nursing manpower and the other categories of health manpower.

The primary role of Federal government is not seen as that of supporting education, special education, other than perhaps through various student assistance programs such as loans or scholarships; the subsidy of institutions as such is, at the present time, not a major focus of the administration.

Those of you who are in the manpower field realize and know that there are major disagreements about that policy. Even so, we now find that state governments in many areas are similarly examining their manpower policies and their support of higher education. As a matter of fact, a number of states are either proposing or have proposed legislation which will, in essence, implement the same kinds of incentives and disincentives —the same kinds of subsidies for physicians and other health manpower. In one state, a dental school has been started and the legislature has required that the school be self-sufficient through the charging of tuition, but the State will subsidize part of that tuition for residents in exchange for their serving in scarcity areas or remaining in the state to practice. You can see from this that at the state level the same types of incentives and disincentives are being proposed as regulatory mechanisms.

Those of you in Comprehensive Health Planning are aware that Section 11.22 of the Social Security Amendment requires that facilities for significant expansion of services must be approved by the planning agency in order to be eligible for the depreciation portion of the reimbursement under Medicare, Medicaid, and Title V. In viewing this, you can't look at it purely from the standpoint of the facilities as such, as just the services—but what the CHP agencies will be getting into is a question of the requirement that those services support graduate medical education. I submit that the CHP agencies will be faced with problems such as the fact that their planning studies may indicate there are enough surgeons in the community, but the hospital is proposing to start a new surgical residency and therefore has to expand its surgical facilities. That is going to be a tough regulatory decision to make for the local planning agency.

I'd like to close with a comment in regard to the definition of role. This is a charge to the State and local communities—I'm not saying government, I'm not saying health department, I'm not saying community; this means everyone—and it's a charge to us in the Federal government. We must examine what the role of the various levels of government are in personal health services, as well as for providers and the public. I might add that this applies to community health, too.

In the discussion today the categories and functions began to be addressed, but I would like to summarize what I see as the functions. One is planning and policy development. The questions that need to be addressed here are how should this activity be structured and how should it be supported at the State and local levels. And I include in the planning and policy development process not just the combination of providers and consumers and other interested parties, but I include the entire legislative budget process in the community. There is need to develop a linkage—an effective communication system—among the parties of interest in the effort.

Now as you well know, it's extremely difficult to move on from planning and policy to implementation. There has been some discussion today in regard to finding the focus of responsibility and the focus of accountability. One of the problems with the health delivery system is that there is no single focus of responsibility at the present time, and there is no single focus of accountability. It's a system of corporate responsibility and accountability. The private physician is accountable to the patient, and to himself, and to the regulations by which he is governed and licensed in the state in which he practices. The hospital is, in some ways, independent and not tied to another body for responsibility and accountability. And the consumer is accountable, in many respects, only to himself, his family and, under certain circumstances, the law.

What we need to do, in looking at these levels of responsibility for planning and implementation, is not so much find a single point of accountability and responsibility, but find a point to which certain functions are to be delegated and hold these individuals accountable as individuals and as a group, so that hospitals as individual institutions and as a group can be held accountable for their actions, and physicians similarly, and so forth . . . with the clear hope that at some point in the future some system will evolve in which there is a clearer corporate decision process which involves the individuals—the institutions and the individuals—from beginning to end, with their responsibility ultimately to the consumer and to the public.

The second function is regulatory activities. There are regulatory requirements—the setting of standards of medical care and certain other regulatory requirements which are traditional (like licensing of manpower) which will expand gradually . . . which have been expanding in recent years in terms of certificate of need legislation, rate setting, etc.

The third activity or function is evaluation, which I consider a more important function in many respects than the planning function because if carried through effectively, and if the results of evaluation are communicated effectively, it will lead to plan revisions to meet identified shortcomings. Evaluation requires the development of data systems. It requires the development of techniques for measuring system performance, for monitoring system performance, for continual monitoring of the health status of the population being served.

The fourth function, which may or may not be a Federal function, a State function, or a local function, is resource development, as it relates to facilities, manpower and, in some cases, the support of innovation.

Fifth, there is a requirement for the financing of services. For those not economically self-sufficient, there is the need to subsidize in some manner the financing of services with public funds, whether by means of various income transfer mechanisms, or through the purchase of services as under Medicare and Medicaid, or through the establishment of services in an area where resources are currently not directly available.

Sixth, there may be instances where the State and local governments must get involved in the delivery of services where the resources are incapable of meeting the need. At the present time, this is generally viewed as only gap-filling until the system can adjust and fill the need, after which we can then concentrate on the primary public interests of financing and regulatory process.

And seventh, there may be the need to carry out certain research functions, possibly biomedical and health services research.

Now, in many of my remarks and in a discussion of this nature, I feel there is one major link missing which I believe to be extremely important. We have, I feel, neither solved nor adequately addressed the problem of how to get public input and public participation in the functions I've been discussing. I am speaking specifically from the standpoint of the work I've been involved in at H.E.W. in recent years which at various times has dealt with major legislative proposals, with major program decisions, and more recently, with health services research. The most difficult responsibility or need is—how does one effectively communicate to the public the information available in a way that the public can make an informed decision about what its choices are, why decisions were made, etc., let alone allow the public an opportunity to participate in the decision-making process? We have use of the traditional democratic process through our legislative body but that, I submit, must be supplemented by other means to get the involvement of the public. Only in this way will we develop adequate utilization of the resources that are available to us for the delivery of personal health services. It's the only way to develop public awareness of the cost of delivering high quality medical services and thus encourage public participation in the difficult trade-off decisions that must be made. And I would submit that the trade-off decisions are not limited to trade-offs within health. There are trade-offs between health and social services; among health, social services and the other demands made upon Federal and State budgets.

I feel that if we develop this communication, if we are able to improve this information-communication-participation process, then I believe we will have significantly moved on one major problem—resolved one major problem requirement that we have spoken to in the last day, and that is accountability. If we are able to communicate the problems, the issues, the possible solutions, the effectiveness of the system, to the public, we are in essence providing accountability to the public.

Citizens' Conference RECOMMENDATIONS

The recommendations of the Conference have been grouped according to community health, personal health, environmental health, and general or miscellaneous. It should be said that because there is often no clear line of demarcation between community and personal health, many of the recommendations in these two categories could logically be placed in either group.

GENERAL/MISCELLANEOUS

1. A clear, concise statement of health policies and plans should be developed by the State, with participation by local citizens from all economic and social strata. An assembly, such as a constitutional convention, is suggested as the means to accomplish this goal.

2. The Governor's Conference on Health should respond in writing to each recommendation adopted by the Citizens' Health Conference and forward these responses to each member of the Conference within a reasonable time, not to exceed six months after the Governor's Conference.

3. Because there is not enough continuous input to the decision makers of the state, the Governor's Office and the Legislature should be informed on a regular basis of the health needs, issues, and recommended solutions.

4. A data base should be developed for planning and analysis of previous recommendations by providers and citizen groups.

5. The State should adopt a policy stating its responsibility to guarantee the right of every citizen in Michigan to needed health care services and should implement that policy.

6. A comprehensive school health education curriculum (K-12) should be implemented by the Department of Education.

7. Model standards should be established for the evaluation of any voluntary health agency seeking to solicit public contributions, and these criteria should be applied by all community groups and organizations whose opinions might be influential in the acceptance of appeals from agencies seeking public contributions.

8. A pilot study should be initiated to identify common voluntary health agencies' services leading to the initiation of a joint approach to similar goals.

COMMUNITY HEALTH

1. A priority should be placed on preventive health services through intensive health education.
2. State funding should be increased to improve local identification of health needs, local implementation to meet those needs, with evaluation provided by the State.
3. Preventive health screening and treatment programs should be established for adults similar to those which exist for children under Medicaid.
4. Local boards of health should be encouraged to have representation from elected officials, users, and providers of health services.
5. A policy should be established that would assure reasonable access to health personnel and health records.
6. Areawide comprehensive health planning agencies should work cooperatively with but remain separate and distinct from regional planning councils.
7. An appropriate single state agency should provide planning guidelines with quantitative health objectives.
8. A comprehensive statewide and areawide directory of health services, manpower, and facilities should be published and updated annually, and should include a complete analysis of delivery of health care in the State.
9. Overall responsibility for community health should be assigned at the state level and should include:

   (a) A better definition of the relationship of the Michigan Department of Public Health to Comprehensive Health Planning as well as to other state departments which have impact on community health, and the relationship of local health departments and areawide Comprehensive Health Planning.

   (b) A better definition of the role of the Michigan Department of Public Health in the broad context of community health.

   (c) Establishment of minimum health indices for the state as a whole, relating them to planning and financing.
10. The Governor's 13 regions should be used by all State and voluntary agencies which provide health services in Michigan.
11. Standards of care for 3-bed nursing homes should be established and enforced.
12. There should be a valid study of the actual and potential value of home health services in Michigan.
13. The Michigan Department of Public Health should provide actuarial expertise to determine the financial base for an HMO, for groups not having access to such information.
14. There should be greater cooperation between state and local agencies in the performance of regulatory functions, especially as they relate to nursing homes and hospitals.
15. Public media, especially TV, should be used for increased health education messages to counter commercial messages that often advocate questionable health practices.
16. Health care delivery points—physician offices, hospitals, clinics, etc.—should be encouraged to provide health education to supplement the inadequate information currently given patients.
17. Public health should encourage a greater involvement by health consumer advocates and a heightened consumer awareness about health care.
18. Michigan Department of Public Health should develop a state plan for public health education and identify the roles of various state and local agencies in carrying out the plan.
19. Health services and functions as now performed by eleven departments of state government should be redefined and reevaluated toward the designation of a single state health agency having the power and responsibility to administer all state health services.

PERSONAL HEALTH

1. The State, insurance companies, and other third-party payers should be encouraged to provide funds for after-care programs and other alternatives to hospital care, including outpatient services, to encourage provision of the most appropriate level of care at the least expense compatible with high quality care.

2. Special groups, such as Indians, should be involved as a part of health delivery teams.

3. The State should consider providing funds, by loan, to those who are eligible for physician training or as allied health professionals, such as physician assistants, primary practitioners, nurse clinicians, etc., on the condition that service in geographic areas of need and specialty be the mechanism to repay the loan.
4. Public health services should be available to all regardless of economic status.
5. Public health services should be continued without interruption regardless of shifts in funding from federal to state to local jurisdiction.
6. Users as well as providers of health services should be involved in the application of good health practices and technology.
7. Neighborhood comprehensive health and social service centers should be promoted as a method of improving access to health care, and such centers should include ancillary services and should main-

tain operating hours and procedures which improve the acceptability and accessibility of these services.

8. The needs of the mentally ill and retarded, both in institutional and community settings, should continue to receive public attention.
9. There should be an increased use of educational and other community facilities for delivery of appropriate health services.

ENVIRONMENTAL HEALTH

1. Greater attention should be placed on public education and information regarding environmental health including school curriculum development.
2. There should be increased enforcement of environmental health policies and standards.
3. Credibility should be maintained as a priority in the planning and provision of environmental health services.
4. There should be immediate passage of an updated state housing maintenance code applicable to the total population, including as tools for enforcement:
   (a) Instructions prior to sale or rental.
   (b) Registration of land contract sales.
   (c) Mandatory inspection of all residences prior to rental or sale.
5. To prevent further environmental health problems, especially in groundwater quality and sewage disposal, loopholes in the Plat Act should be plugged, and adequate enforcement staff provided.
6. Greater emphasis should be placed on research for better means of sewage and solid waste disposal and reduction of air contaminants.
7. There should be more effective use of data and simulated environmental health models, computer operated, with a mechanism for disseminating this information to the public.

Centennial Anniversary

State Senator Charles O. Zollar of Benton Harbor, Chairman of the Senate Appropriations Committee. As a participant in the program, he introduced the guest speaker, his former colleague in the Senate, Frank Beadle.

STATE OF MICHIGAN

MICHIGAN LEGISLATURE

Senate Concurrent Resolution No. 58

Offered by Senators Ballenger, Zaagman, Cartwright, DeMaso, Faxon and McCollough
(Representatives R. W. Hood, McCollough, Symons, Stallworth, M. W. Hood, Jr., Brennan, Kennedy, Warner, Geake and Brown named co-sponsors)

A CONCURRENT RESOLUTION COMMEMORATING THE 100th ANNIVERSARY OF STATE PARTICIPATION IN HEALTH SERVICE THROUGH THE MICHIGAN DEPARTMENT OF PUBLIC HEALTH.

WHEREAS, July 1, 1973 will mark the 100th Anniversary of State government participation in health services through the Michigan Department of Public Health; and

WHEREAS, Both the State Constitution and statutes recognize the common personal and environmental health needs of our citizens; and

WHEREAS, The past century has been marked by outstanding progress to control sickness and to promote health, including measures to prevent communicable diseases, to protect mothers and children, to prevent premature disability and deaths, to preserve healthful community environment, and to improve access to quality health services for all citizens; and

WHEREAS, Dr. Robert Kedzie, an early and prominent member of Michigan's first Board of Health, in an address to that Board, said: "... the people clearly need to apprehend ... that each person is, in the broadest and fullest sense, healthy and safe only as every person about him is healthy and safe. The estranged and neglected ... the despised and forgotten ... may vindicate their claim to our common humanity by making us heirs of all they possess; bequeathing to us the very disease which destroyed them ..."; and

WHEREAS, Future progress toward the time when "each person is, in the broadest and fullest sense, healthy and safe," depends upon individual action and upon collaborative work by those institutions and professions involved in the planning, management, delivery, and evaluation of health services as well as in health teaching and research; now therefore be it

RESOLVED BY THE SENATE (the House of Representatives concurring), That this body does hereby salute the 100th Anniversary of the Michigan Department of Public Health by encouraging all citizens, health professions, and health agencies to participate in the coming year in the effort to realize a fuller understanding of health needs and services, to develop the basis for future health policies, and to delineate the potential role for state and local health departments as well as other health institutions as we look toward additional advancement, and be it further

RESOLVED, That a copy of this concurrent resolution be transmitted to the Michigan Department of Public Health for implementation.

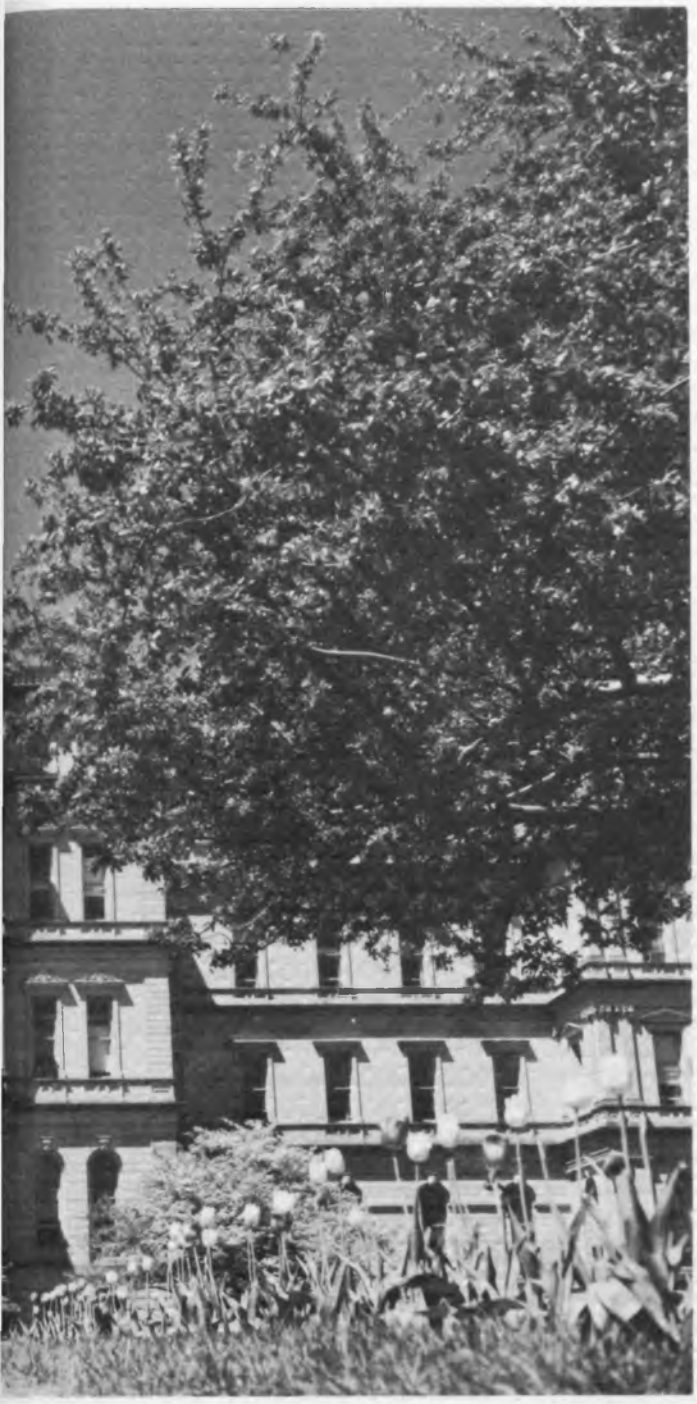
Adopted by the Senate, March 21, 1973.

Adopted by the House of Representatives, June 1, 1973.

Thos Thatcher
Clerk of the House of Representatives.

Beryl J. Kenyon
Secretary of the Senate.

Senator Frank Beadle



What a holler
From Senator Zollar,
He called me a scholar
In spending the dollar. But what today has here occurred,
He's not so careful in using the word.

Thank you, Charlie, you were very generous and I appreciate it very much. Five score years ago, our fathers brought to this commonwealth, a new development that came to be known as the Michigan Department of Health. According to history books the popular verse a hundred years ago went something like this:

Don't go to Michigan, that land of ills
The word means ague and fever and chills.

I want to suggest to you, in this century we've substantially turned those lines around. Now they could read something like this:

Do come to Michigan, that land of health
The word means vigor and people and wealth.

On this occasion, and its a great and gratifying one for me, I'd like to do some looking backward, some looking forward with you to the lines of the past, present and to the future as best we can. In considering what has gone on over these past ten decades I'll root around in some legends and try to recall some highlights in my eighteen years in the legislature. And I'll use as a theme some ideas which have stood the test of time throughout; that's the notion that public health as it has been developed under government has been and must continue to be considered of the people, by the people, and for the people of Michigan.

More than a hundred years ago Michigan was apparently a deadly place. As the story goes the fever of the Indians, malaria, had hardly ended when an enemy even more deadly came—Asiatic cholera. It reached the interior by way of Canada. Many people died and it's probable that the disease delayed the coming of settlers as much as the Black Hawk War. The legislature passed

---

Presented by Senator Frank Beadle for the Centennial Luncheon of the Michigan Department of Public Health, May 18, 1973.

a law authorizing towns to establish rigid quarantines against travelers. Ypsilanti was so determined to keep all danger out that even the boy Governor Stevens T. Mason riding west from Detroit was arrested as he entered a local tavern. He wasn't released until the sheriff came and helped him out.

This anecdote like others from the past establishes the idea that action related to health is really embedded in our lives. We might like to think that it's less true today than it was in 1873 or in the intervening years because we've wiped out malaria, typhoid, cholera, smallpox, diptheria, and almost tuberculosis.

We might like to think that things have become pretty sophisticated and we're getting past the point when health as such is important. But as I look on my time in Lansing one of the first reports that came to me from the health department said the year 1952 saw the highest number of polio cases reported to the state health department since records have been kept. Approximately 3,000. I know you all remember how families of all ages, but especially the young, lived in fear during the summer months when polio was on the move. During that same year the department reports showed more than 6,000 new cases of tuberculosis, about 7,000 cases of syphilis. The threads of such disease run through our lives. Later on in 1954 I remember our young health officer Dr. Al Heustis standing on his courage to make Michigan one of the field trial states in testing Salk polio vaccine. Who can ever forget the announcement in 1955 that this vaccine was safe, effective and potent.

During my years in the Senate I particularly remember the new programs we started in tuberculosis control. I likewise will never forget one of the early days in the Senate when I was first exposed to what is often known as "pork barreling" and we were talking about building new TB hospitals. Everybody wanted a new TB hospital in their area—some of them were successful and so successful has been the treatment of TB that not one of those TB hospitals is in operation because it is now not needed.

We've expanded crippled children services. The beginning of health department work with nursing homes, homes for the aged, the growth of environmental health programs, the battle to install fluoridation in public water supplies. Finally in 1968 about the time I was finishing the Senate the health department reported in an article by Dr. Myron Wegman, Dean of the School of Public Health, that said: "We have truly entered an era which is evolving a whole new concept of public health and the delivery of health care services. People are coming to regard the opportunity for health and access to health care as a basic social right." This is a long way from the boy governor under arrest for breaking quarantine, but the message is much the same. Public health is of the people. It's interesting to see in trying to look ahead that this idea is again in Governor Milliken's program policy guidelines for 1974-1975. While I don't pretend to try to understand all of the budget language, (I didn't pretend to understand a lot of it when I was in the Senate) the discussion of the medical care system includes a directive to the department of public health to evaluate the efficiency of the health care delivery system. That's a pretty broad order. But it seems to hold a promise that we are going to continue to build the foundations which have recognized health as a central concern.

We move now to the second part of my thoughts today. Let's look how it happens that public health is by the people.

Act 81 of Public Acts of 1873 by the state legislature established a state board of health for "general supervision of the health and life of the citizens of this state." The language of that act, which has been carried forward and now covers the position of Director of Public Health held by Dr. Reizen, represents a significant mandate by the people, requiring their State Government to do whatever is necessary for health. The foresight of these early days is interesting. The first board president Dr. Homer Hitchcock, is quoted as saying "Here then is the work for this board to do: to educate the people in respect to the nature and causation of diseases and the means for their prevention; to suggest appropriate legislation for compelling when necessary the use of these means, and to present arguments for such education and legislation, fortified and made cogent by facts—well authenticated cases of disease and deaths directly traceable to ignorance, neglect or disobedience of the laws of hygiene; and to make it possible by this work that many, if not all of the lives now needlessly lost to the State may be saved."

These words seem just as good, just as simple and understandable today as they were a hundred years ago. Since those days of course we've grown in population and technology. We've cluttered up the pathways between the people and health. As chairman of the Senate Appropriations committee I was amazed at the pile up of organizations, institutes, agencies—federal, state and local —public, private, professions, interest groups, all working in this field. Much of it is good, I'm sure but there are also some hazards. One of them I've found at the time a bit annoying and at other times a bit funny and that was the tendency of some groups to try to become self appointed policy makers. There seemed to be and there still may be a tendency to forget that there are people in the community—city councils, supervisors, commissioners, who were elected by the people to help make policies. At the state level there is the Governor and there's the Legislature elected by the people with accountability to the people for directing the broad course of health programs as well as other activities. The Federal government at times also seems to try to forget this, but I think we've done a pretty good job in Michigan to help them remember that there is a jurisdiction called a State and there is a State Legislature. And not all the responsibility in the authority has leaked away to Washington.

One of the more interesting periods during my years in Lansing came about during the Constitutional Convention, and its aftermath of new legislation. In the convention we saw quite a collision of views. A collision of interest groups, representatives of almost every shade. Despite nearly a hundred years of changes, the Convention stuck to its guns and earmarked health as a primary concern of this state.

Shortly after the convention and the reorganization it brought about, the legislature reacted with an outpouring of health laws. And before I am criticized by some of my colleagues when I was in the Senate who will say

"Frank, you didn't go for that particular measure", I'm going to recite them anyway. In 1965 we passed an air pollution act, setting up a Commission which still survives intact although the operation was transferred recently to the Department of Natural Resources. We passed a new water pollution control act. There was passed a law requiring mandatory local health department. Legislation was passed requiring the testing of babies for the condition known as PKU which causes retardation. We passed the state's first family planning legislation. We passed an act to improve migrant labor camps. We passed new legislation for the protection of water wells. And we made provision for tuberculosis care on an out patient basis. In my mind these represent actions by the people to improve health protection.

Though it's always dangerous to mention names because of those you inadvertently omit among those I particularly remember as being in the thick of things besides Al Heustis were Dr. V. K. Volk, representing local health officers, I'm so happy to see Doc here today, Ted Werle for voluntary agencies, Dr. E. J. O'Brien the fiery chest surgeon from Detroit, Charlie Wagg of Mental Health, Bud Maxey in Social Services, and of course in my mind one of the tops, the late Dr. Don Cummings of the state health lab. For me Dr. Don Cummings is one of the greatest public servants that ever served people anywhere, at a sacrifice of considerable financial benefits from possibilities of employment by industry and at the sacrifice of his own health. He dedicated himself to the health of people in Michigan.

And this brings to my third point and that is public health is for the people.

I'll begin this by continuing to think aloud about Doc Cummings a bit because, as I said, if anyone had the spirit of people, the enthusiasm, the capability to move a program, here was a man who had it. He used to come to Appropriations and I was always glad to see him because when Doc Cummings came to Appropriations Committee we always had a full committee meeting. In some way, we'd always wind up asking him if he couldn't use more money. If he wasn't ready to talk about something you couldn't pry it out of him with a crowbar. I remember on one occasion he didn't particularly like the lines of questioning and he went off on the story of a couple of little work horses on the back eighty behind the health department headquarters out on Logan Street. He said he noticed one of the farmhands jumping horses one day and he asked him about it. And the hired man said that he'd been working with the horses for quite a while, and amazing to him they had a great aptitude for jumping fences. So Doc Cummings said well, why don't you enter these horses in the State Fair? And they were entered and they did it. These work horses strutted off with every blue ribbon. And the story went on—the horses were entered in event after event and finally as Doc told it he lost track of them until one day a newspaper reported that the old work horses from the health department grounds in Lansing had become the grand champion jumping horses in the Belgium blue ribbon fair. It's quite a story. But it accomplished Doc's purpose because by the time he got through telling the story, the questioning of the committee, the party that was asking the question had forgotten what the question was about.

Well, I don't know if this is 100% true and I may have confused it a bit in my recollection but the thing we like in Appropriations was the ability to communicate; to relate to us, to establish that we were working together for the people, we could count on Doc to do that job.

The State Health lab . . . the G. Donald Cummings Cancer Products Development Center, which I helped dedicate shortly after Donald Cumming's death, stands as a memorial to this kind of spirit and service. If we try to trace this backward there are a whole line of Michigan firsts in achievements in health—I'll mention only one of them as representative of all the rest.

Back in the early part of this century one of the major health problems was simple goiter. It was commonly known as the Michigan disease. The health department learned that simple goiter seemed to be due to a lack of iodine, and that the disease had been prevented in Akron, Ohio school children by treating them with iodine pills. The health department under the leadership of Cy Young, who directed the lab before Doc Cummings called a group of Michigan salt manufacturers and told them that goiter apparently disabled up to 90% of the children in areas where iodine was lacking in drinking water. "Well that's interesting," the salt manufacturer said "what's that got to do with us?" "Well," said the health department, "if you salt manufacturers will fortify all table salt with a trace of iodine, it won't cost you more than $25,000 a year and you can charge that off to promotion and share the glory of wiping out the disease in Michigan." Well the manufacturers just couldn't refuse that kind of a suggestion. The result was iodized salt and today simple goiter has all but vanished from Michigan.

Looking through the governor's policy for guides for 1974-1975 which I mentioned earlier I see under human services concern about services for the aging, venereal disease, drug abuse and alcoholism, food service sanitation, services for the mentally ill, community mental health services, as well as a broad item on the medical care system for the state as a whole. This foreshadows, I believe, continuing Michigan tradition of public health service *for the people.*

In winding up let me make these points: I urge those who set public policies in Michigan to continue a strong organizational focal point on health services, of, by, and for all the people—an organization with dedication which can be foresighted about protecting health as well as helping those who are sick. I'm especially glad to see that this centennial is being used to gear up to the future, with citizens and health people working toward a Governor's Health Conference later. Make it practical and get together on your priorities. In carrying out your work and pleading your causes don't forget the Legislature must tax for what is spent and, while we can't afford needless sickness neither can we afford everything everybody wants. So your elected legislators expect you to work with the highest sense of stewardship to give the state a dollars return and then some for every dollar spent.

I salute all of you in the health agencies past and present, especially the Michigan Department of Health for your fine work, and urge you to continue to build on the great traditions you represent: good health for, of, and by the people. Thank you very much.

Return of Deaths in the County of Jackson for the year ending December 31st, A. D. 1876

No.	Date of Death: Month	Day	Year	Full Name of the Deceased	Male or Female	White, Black, &c.	Married, Single, Widow or Widower	Age: Years	Months	Days	Place of Death	Disease or Cause of Death	Birthplace	Occupation	Parents: Names	Residences	Date of Record
111	Oct	21	187		male	white	single			3	Jackson City 5th Ward	Debility	Jackson City		John & Rogers	Jackson City, Mich	May 30 1876
112	Nov					white	single	21		15	Jackson City 5th Ward	accidentally Drowned	Michigan	Drug clerk	Amanda Rogers		
113	Nov						single	11	5	22	Sonia, Michigan	Typhoid fever	New York State	Student	Leonard C. Aiken	Monroe, Mich	May 30 1876
114	Jan						single			1	Jackson City 5th Ward	Unknown	Jackson City		Margaret Aiken		
115								48			Jackson City 5th Ward	Drowned accidentally	Germany	Baker	Hiram D. Slater	Jackson City, Mich	May 30 1876
116								4	3	7 23	Jackson City 5th Ward	Unknown	Michigan		Caroline A. Slater		
117								43			Jackson City 6th Ward	Erysipelas	Ireland	Laborer	George Keegan	Jackson City, Mich	May 30 1876
118								70	3	29	Jackson City 6th Ward	Dropsy of heart	New York State	not given	Mary Brigan		
119										28	Jackson City 6th Ward	Inflammation of Lungs	Jackson, Mich		Unknown	Ireland	May 30 1876
120								2	1	7 24	Jackson City 6th Ward	Congestion of the brain	Jackson City, Mich		James Howe	New York State	May 30 1876
121											Jackson City 6th Ward	Still Born	Jackson City, Mich		Abigail Howe		
122							married	45	1	6	Jackson City 6th Ward	Inflammation of Lungs	Ireland	Housekeeper	James Forst	Jackson City, Mich	May 30 1876
123							married	53	10		Jackson City 6th Ward	Unknown	Scotland	Housekeeper	Hannah Forst		
124	May	14	11			white	widow	73	1	4	Jackson City 6th Ward	Congestive Chill	New York State	not given	Thomas K. Laughlin	Jackson City, Mich	May 30 1876
125	May	22	1876	Elliot Kensch	male	white	single			1	Detroit	Unknown	Detroit, Mich		Julia Laughlin		
															Pierson Hewitt	Jackson City, Mich	May 30 1876
															Elizabeth Hewitt		
															John Bordman	Ireland	May 30 1876
															Mary Bordman		
															David Robinson	Scotland	May 30 1876
															Matilda Robinson		
															Samuel Niblack	New York State	May 30 1876
															Sarah Niblack		
															George Kensch	Jackson City	May 30 1876

NUMBER OF DEATHS AND DEATH RATES FOR CERTAIN COMMUNICABLE DISEASES MICHIGAN RESIDENTS, 1900-1972 (Rates per 100,000 Population)

Office of Planning and Evaluation
Michigan Department of Public Health

Year	Diptheria		Strep. Sore Throat Incl. Scarlet Fever		Smallpox		Typhoid Fever		Whooping Cough		Measles		TB of the Respiratory System		Tuberculosis (all forms)		Poliomyelitis		Syphilis*		Gonorrhea	
	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate
1940	20	0.4	41	0.8	1	0.0	11	0.2	59	1.1	19	0.4	1,547	29.4	1,752	33.3	72	1.4	591	11.2	3	0.0
1941	18	0.3	32	0.6	1	0.0	14	0.3	91	1.7	65	1.2	1,532	28.2	1,723	31.7	18	0.3	537	9.9	1	0.0
1942	24	0.4	23	0.4	-	0	5	0.1	72	1.3	8	0.1	1,630	29.4	1,827	33.0	10	0.2	559	10.1	7	0.1
1943	21	0.4	11	0.2	-	0	9	0.2	101	1.9	89	1.7	1,588	29.5	1,802	33.5	27	0.5	579	10.8	3	0.0
1944	32	0.6	7	0.1	1	0.0	7	0.1	33	0.6	49	0.9	1,544	28.7	1,748	32.5	45	0.8	543	10.1	2	0.0
1945	46	0.8	9	0.2	-	0	3	0.1	36	0.7	10	0.2	1,591	29.3	1,758	32.3	20	0.4	527	9.7	2	0.0
1946	27	0.5	3	0.1	-	0	6	0.1	44	0.8	47	0.8	1,645	28.8	1,843	32.3	89	1.6	547	9.6	-	0
1947	23	0.4	6	0.1	-	0	5	0.1	63	1.0	5	0.1	1,483	24.4	1,643	27.1	29	0.5	502	8.3	3	0.0
1948	8	0.1	1	0.0	-	0	4	0.1	9	0.1	43	0.7	1,395	22.5	1,561	25.2	54	0.9	512	8.3	-	0
1949	11	0.2	4	0.1	-	0	1	0.0	22	0.3	33	0.5	1,254	19.7	1,400	22.0	216	3.4	455	7.2	-	0
1950	2	0.0	1	0.0	-	0	5	0.1	28	0.4	28	0.4	1,134	17.8	1,270	19.9	128	2.0	325	5.1	1	0.0
1951	6	0.1	-	0	-	0	1	0.0	21	0.3	11	0.2	1,049	16.0	1,154	17.6	67	1.0	299	4.6	1	0.0
1952	2	0.0	-	0	-	0	-	0	8	0.1	17	0.3	689	10.3	775	11.6	213	3.2	174	2.6	2	0.0
1953	2	0.0	1	0.0	-	0	-	0	11	0.2	16	0.2	536	7.8	607	8.9	108	1.6	182	2.7	1	0.0
1954	3	0.0	3	0.0	-	0	-	0	17	0.2	17	0.2	471	6.7	530	7.5	89	1.3	139	2.0	2	0.0
1955	1	0.0	1	0.0	-	0	1	0.0	8	0.1	10	0.1	435	6.0	477	6.6	32	0.4	113	1.6	1	0.0
1956	6	0.1	3	0.0	-	0	-	0	6	0.1	26	0.3	426	5.7	466	6.2	22	0.3	114	1.5	4	0.1
1957	1	0.0	-	0	-	0	-	0	6	0.1	23	0.3	403	5.2	442	5.7	15	0.2	105	1.3	4	0.1
1958	-	0	-	0	-	0	-	0	1	0.0	18	0.2	357	4.5	395	5.0	37	0.5	84	1.1	8	0.1
1959	1	0.0	2	0.0	-	0	1	0.0	5	0.1	11	0.1	335	4.2	370	4.6	17	0.2	84	1.1	4	0.1
1960	2	0.0	1	0.0	-	0	-	0	2	0.0	17	0.2	364	4.7	390	5.0	4	0.1	79	1.0	7	0.1
1961	1	0.0	1	0.0	-	0	-	0	2	0.0	13	0.2	307	3.9	332	4.2	-	0	71	0.9	7	0.1
1962	2	0.0	1	0.0	-	0	-	0	2	0.0	8	0.1	307	3.9	331	4.2	2	0.0	94	1.2	3	0.0
1963	-	0	-	0	-	0	-	0	-	0	27	0.2	276	3.4	299	3.7	1	0.0	72	0.9	1	0.0
1964	-	0	-	0	-	0	-	0	2	0.0	11	0.1	288	3.6	315	3.9	1	0.0	66	0.8	3	0.0
1965	-	0	-	0	-	0	-	0	-	0	5	0.1	261	3.2	285	3.5	-	0	65	0.8	2	0.0
1966	1	0.0	-	0	-	0	-	0	-	0	7	0.1	284	3.4	301	3.6	-	0	63	0.8	-	0
1967	-	0	-	0	-	0	-	0	-	0	3	0.0	206	2.4	226	2.6	-	0	44	0.5	1	0.0
1968	-	0	1	0.0	-	0	-	0	-	0	-	0	203	2.3	262	3.0	2	0.0	29	0.3	-	0
1969	-	0	-	0	-	0	-	0	-	0	-	0	147	1.7	201	2.3	-	0	26	0.3	1	0.0
1970	-	0	1	0.0	-	0	-	0	-	0	1	0.0	134	1.5	180	2.0	-	0	17	0.2	2	0.0
1971	-	0	4	0.0	-	0	-	0	-	0	-	0	122	1.4	173	1.9	-	0	18	0.2	-	0
1972	-	0	1	0.0	-	0	-	0	-	0	-	0	111	1.2	157	1.7	1	0.0	12	0.1	-	0

No.	Date of Death: Month	Day	Year	Full Name of the Deceased	Male or Female	White, Black, &c.	Married, Single, Widow or Widower	Age: Years	Months	Days	Place of Death	Disease or Cause of Death	Birthplace	Occupation	Parents: Names	Residences	Date of Record
126	May	29	1876	Aitchen Weatherwax	male	white	married	68	4	12	Michigan Jackson City 6th Ward	Cancer in the stomach	New York State	Farmer	Elliot Kensch		1876
															Weatherwax	New York State	May 30 1876
127	June	24	1876	John Fisher	male	white	married	69	6		Jackson City 6th Ward	Dropsy of the chest	Germany	Laborer	Fisher	Germany	May 30 1876
128	July	2	1876	William R. Campbell	male	white	single	26			Jackson City 6th Ward	Abscess in the Lungs	New York State	Shoemaker	William R. Campbell	Jackson City, Mich	May 30 1876
129	July	8	1876	Barnett Keenan	male	white	single	20	11	3	Jackson City 6th Ward	Accidentally drowned	Michigan	Laborer	Mary Campbell		1876
130	July	17	1876	Jessie Hilt	female	white	single	3		18	Jackson City 6th Ward	Congestion of the bowels	Iowa		Michael Keenan	Jackson City, Mich	May 30 1876
131	July	31	1876	Mary Bourim	female	white	single	10	4	17	Jackson City 6th Ward	Spinal Fever	Houghton County, Michigan		Mary Keenan		
132	Aug	12	1876	James B. O'Neil	male	white	single	10		5	Jackson City 6th Ward	Cholera Infantum	Jackson City, Mich		David Hilt	Jackson City, Mich	May 30 1876
															Frances Hilt		
															Peter Bourim	Jackson City, Mich	May 30 1876
															Ellen Bourim		
															Thomas O'Neil	Jackson City, Mich	May 30 1876
															Ellen O'Neil		

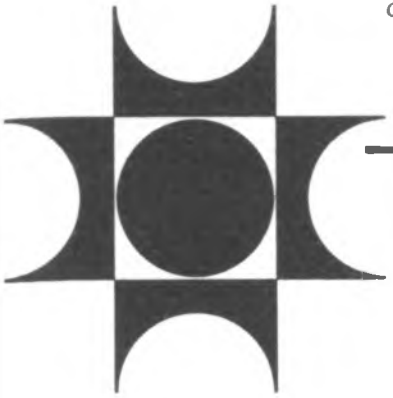
46

Dated Jackson June 30 1876

I hereby certify that the above Return of Deaths is a correct Transcript from the Records of this Office.

County Clerk.

The Centennial symbol is a variation of the Greek Cross. Originally the cross was a symbol of crusaders and the mixing of the races. Today it is a common symbol of organizations associated with health and healing, i.e. Red Cross, Blue Cross, and Green Cross. The reason for using the cross configuration as the centennial symbol is that public health serves as a crusade against ill health and involves all people.



Today and a Century Ago

In its Centennial year, the State Health Department is an organization in ferment. Old programs, particularly those dealing with categorical diseases such as heart disease and cancer, have been largely dismantled. Some environmental functions – wastewater, solid waste, and air pollution – have been shifted from the health department to a Department of Environment and Natural Resources. Substantial new program starts are being made – such as preventive medical and dental services for children in low income families and a combined program in alcohol and drug abuse. It is not insignificant that the latter two programs, alone, will cost almost as much as the total current state general fund investment in the state health agency ($30,000,000).

Along with the changes in direction and augmentation of resources, there is continued pondering over questions related to organization. Should health functions be combined with other health and social services? Should the pattern of local organization be changed? If reorganization is needed, how can it be carried out in a manner to focus upon improved delivery of health services and not just upon adding another layer of administrative expense, as has occurred in some other states? How can it be done to avoid the overwhelming faults of large scale organization. In short, how can we manage resources to optimize returns in health and improved living for people, and minimize rigid controls, red tape, and bureaucratic stagnation?

These are some of the questions raised by State Health Department officials in 1973. One hundred years ago, questions of a similar nature were raised by health officials.

Of primary concern were the health problems just as they are today. This was evident from the introductory address of Dr. H. O. Hitchcock, senior member and temporary chairman at the first meeting of the Michigan State Board of Health held in Lansing on July 30, 1873. During the address he stated, "Is there an observant and thoughtful physician who does not believe that by the intelligent observance of all the new known principles of hygiene more than one-half the deaths occurring from consumption, scarlatina, typhoid fever, and diarrhea may be prevented and thus there may be yearly saved to the State 1,642 lives that are now lost from these four causes alone!"

Organizational problems also existed for state health officials in 1873 just as they do today. Dr. Hitchcock stated in his address, "We are indeed a small band to man so long a line; and we must call to our assistance by free and cordial correspondence all physicians and all persons throughout the State who are interested in the principles of hygiene."

Health and organizational problems also challenged "The Father of Public Health in Michigan" — Dr. Henry B. Baker. After serving three years as a regimental surgeon in the Civil War, Dr. Baker returned to Michigan where sickness and death resulted from diseases such as measles, whooping cough, scarlet fever, typhoid fever, smallpox, and cholera. In addition, a frequent cause of death and injury was explosive illuminating oils and still another serious cause of death and sickness was arsenical wallpaper.

From his experience as a regimental surgeon, Dr. Baker was convinced that a state public health service would be of value in Michigan. However, in his efforts to initiate the service he had organizational problems.

First of all, he had difficulty finding a person to join him in the endeavor. With persistent efforts he was able to interest Dr. Ira Bartholomew and the two of them set out to establish the public health movement in Michigan.

In 1870, Dr. Baker determined that more help was needed and advocated the creation of a state board. As a result, a bill to create a state board of health was introduced in the legislature but was not favorably reported from the committee. Evidence suggests there was fear the board would take control of patent medicines.

Despite this setback, Dr. Baker and Dr. Batholomew continued their efforts to interest others in the movement. In 1871, they succeeded in gaining the interest of Doctors Robert Kedzie, Homer Hitchcock, E. W. Jenks, and A. B. Palmer. During the next two years, the six doctors worked to create public opinion in favor of a state board of health. Oddly enough, the dangers of poor quality highly explosive oils and poisonous wallpaper containing arsenic were used as the main arguments instead of the prevalence of disease.

Doctor Bartholomew was elected to the legislature in 1872 and introduced another bill to establish a state board of health. In efforts to get the bill passed, Dr. Kedzie lectured before the legislature on subjects related to disease, poisonous wallpapers, and dangerous illuminating oils. Prior to one of his demonstrations, several legislators hurried from the chamber saying, "We are not going to stay in here and be blown up by that damn fool."

Above: One of the early fire hazards, an illuminating oil lamp.

Below: An example of poisonous wall paper that endangered the lives of small children.

With some opposition the bill was passed by both branches of the legislature and was signed by Governor John Bagley. Thus on July 30, 1873, the State Board of Health came into being — the fifth such state agency in the nation. (Massachusetts established the first state health department in 1869, followed by California and Virginia in 1871, and Minnesota in 1872).

LEADING CAUSES OF DEATH
MICHIGAN — 1873

1.	Phthisis (consumption of lungs)		1,460
2.	Typhoid Fever		677
3.	Scarlatina		580
4.	Developmental Diseases of Children		459
	Sill born	274	
	Teething	106	
5.	Spinal Fever		428
6.	Old Age		428
7.	Accidents of Negligence		405
8.	Diarrhea		383
9.	Cephalitis		334
10.	Heart Disease		329

THE INITIAL YEARS

The newly established State Board of Health with Dr. Baker as secretary was appropriated $4,000. Its membership included: Homer O. Hitchcock, M.D., from Kalamazoo; Robert C. Kedzie, M.D., Lansing; Henry F. Lyster, M.D., Detroit; Zenas E. Bliss, M.D., Grand Rapids; Rev. Charles H. Brigham, Ann Arbor; and Rev. John S. Goodman, from Saginaw.

The general duties of the Board were outlined in the enabling legislation.

Section 2. The State Board of Health shall have the general supervision of the interests of the health and life of the citizens of this State. They shall especially study the vital statistics of the State, and endeavor to make intelligent and profitable use of the collected records of death and sickness among the people. They shall make sanitary investigations and inquiries respecting the causes of diseases, and especially of epidemics, the causes of mortality, and the effects of localities, employment conditions, ingesta, habits, and circumstances on the health of the people. They shall when required, or when they deem it necessary, advise officers of the government or other state boards in regards to locations, drainage, water supply, disposal of excreta, heating and ventilation of any public or institutional building. They shall from time to time recommend standard works on the subject of hygiene for the use of the schools throughout the State.

The law creating the State Board of Health also specified that the secretary, "Shall collect information concerning vital statistics, knowledge respecting diseases, and all useful information on the subject of hygiene, and through an annual report and otherwise as the board may direct, shall disseminate such information among the people." This responsibility has held a high priority over the years and continues to receive primary emphasis.

When the State Board of Health came into existence the germ theory of disease was yet struggling for recognition. Actually there were more believers in the theory of spontaneous generation than in the doctrine of a living contagion as the cause of disease.

Dr. John H. Kellogg of Battle Creek, who became a member of the board in 1878, vividly told of the ignorance of people toward germs in the following passage:

People did not know in those days the meaning of the word "germ". When shown germs through a microscope one woman asked me, "How large are they?" When I answered, "If we were to lay 20,000 of them in a row, they would measure approximately one inch," she said, "Oh! I am not afraid of them little fellers."

In 1878, the board was mainly concerned about quarantine for small-pox, scarlet fever, and measles. It was just beginning to get interested in water supply, typhoid fever, and dysentery.

Dr. John L. Burkart, another early member of the board, described the situation this way: "I came to Michigan from Canada in 1881, when typhoid fever, scarlet fever, diphtheria, and malaria were just as common as water. Death traveled in wide circles in northern Michigan."

Typhoid fever flourished because of impure drinking water. As Dr. Kellogg explained it:

Nearly all the drinking water was obtained from dug wells and usually you would find three holes in the back yard, a cesspool, a vault, and a well. The cesspool and vault were not made water tight, as now, (1923) but were open at the bottom so that liquids could soak away into the earth, consequently the filth which went into the cesspool and the vault easily found its way to the well.

Through the board's sanitary conventions held in all parts of the state following 1878, the people were gradually convinced of the importance of clean water and of the necessity for making a fight against germs. In fact, the sanitary conventions became so popular and successful that other states copied them.

Many health problems were assigned by the board to its members on an individual basis for investigation and a report. One of the first tasks given to Dr. Kellogg was to try to learn whether tomatoes were a cause of cancer.

That tomatoes might be a cause of cancer was so widely believed, numerous requests came to the board for an authoritative opinion on the subject. They were only grown in flower gardens as ornamental plants and were known as "love apples". I sent out questionnaires to physicians all over the country, but could not find the smallest evidence that tomatoes had ever caused cancer.

Another question Dr. Kellogg investigated was whether diphtheria was a contagious disease or not.

Again I sent out questionnaires and received a good many interesting replies. The majority of physicians thought diphtheria was not contagious, that it was due to sewer gas, bad sanitation, etc.

Still another question that was of very great interest was the cause of malaria. According to Dr. Kellogg, no one knew the cause or knew anything about the relation of the mosquito to malaria.

I made a thorough study of the situation, spent months in the effort, and the conclusion I arrived at from the evidence presented was that the turning up of soil, and the tearing up of old pavements, as well as the digging of ditches, were followed by outbreaks of malaria for the reason that this work left places where water could collect. It seemed to be clear that standing water had something to do with the production of malarial fever but, of course, we did not know, then, the connection between stagnant water and the mosquito.

In 1878, another board member, Dr. Robert C. Kedzie, reviewed the work performed by the board. He recalled that one major effort of the board was "To organize sanitary forces by securing well organized and effective boards of health in all the cities, villages, and townships in our state with an active health officer on each board."

The problem of stream pollution was a vital concern to Dr. Kedzie in 1878 as he reveals in the following statements:

The Grand River flows from Jackson through Lansing. This stream receives a certain amount of sewage from Jackson, and this polluting material is reinforced as the stream flows past the state prison, where the night buckets of all the prisoners are emptied into a sewer which at once discharges the excreta of nearly a thousand men into the Grand River. Other proofs that a systematic pollution of our rivers has already begun in our state might be brought forward but they are not necessary. Anyone can easily see these evils will come in with an increase of our population unless they are excluded by timely precaution on the part of public authorities. The evil can be successfully resisted only by early and combined opposition. Resist the beginnings of evil is the demand of sanitary science on this subject.

Dr. Kedzie also spoke regarding the importance of providing health information to the people.

Not only sanitarians, but the people-at-large are grasping that very important idea, the possibilty of the prevention of sickness and death. A people that fully grasps the idea that one-half of their sickness and one-half of their deaths may be prevented or avoided, as truly as they may prevent the destruction of their crops by proper fencing, has taken a long stride. . . .

But the people clearly need to apprehend one additional factor, that each person is, in the broadest and fullest sense, healthy and safe only as every person about him is also healthy and safe.

These experiences, concerns and convictions of some of the State Board of Health members during the initial years of the board served to set the stage for many significant accomplishments and events over the next 100 years.

HIGHLIGHTS 1873-1923

1873—The State Board of Health was established.

1895—A law was passed requiring that facts about the common communicable diseases be taught in the schools.

1907—A law was passed which provided for a bacteriologist and a bacteriological laboratory at Lansing.

1909—A law was passed which marked the beginning of public health engineering and gave to the State Board of Health certain authority and jurisdiction over public water supplies owned and operated by private companies.

1913—A law was passed which provided for the employment of a full-time State Sanitary Engineer and the necessary assistants. Act 98 Public Acts of 1913 as amended required the State Board of Health "to see that all sewage systems are properly planned, constructed, and operated so as to prevent unlawful pollution of the streams, lakes, and other water resources of the State" in addition to assuring protection of the public health.

1913—A law was passed which provided that plans for water systems, water treatment, sewers, sewage disposal and alterations and extensions of the same, must be filed with the State Board of Health within sixty days after the work was completed.

1913—The first resort inspections were conducted.

1915—A law was passed which provided for a bacteriologist and a branch bacteriological laboratory at Houghton in the Upper Peninsula.

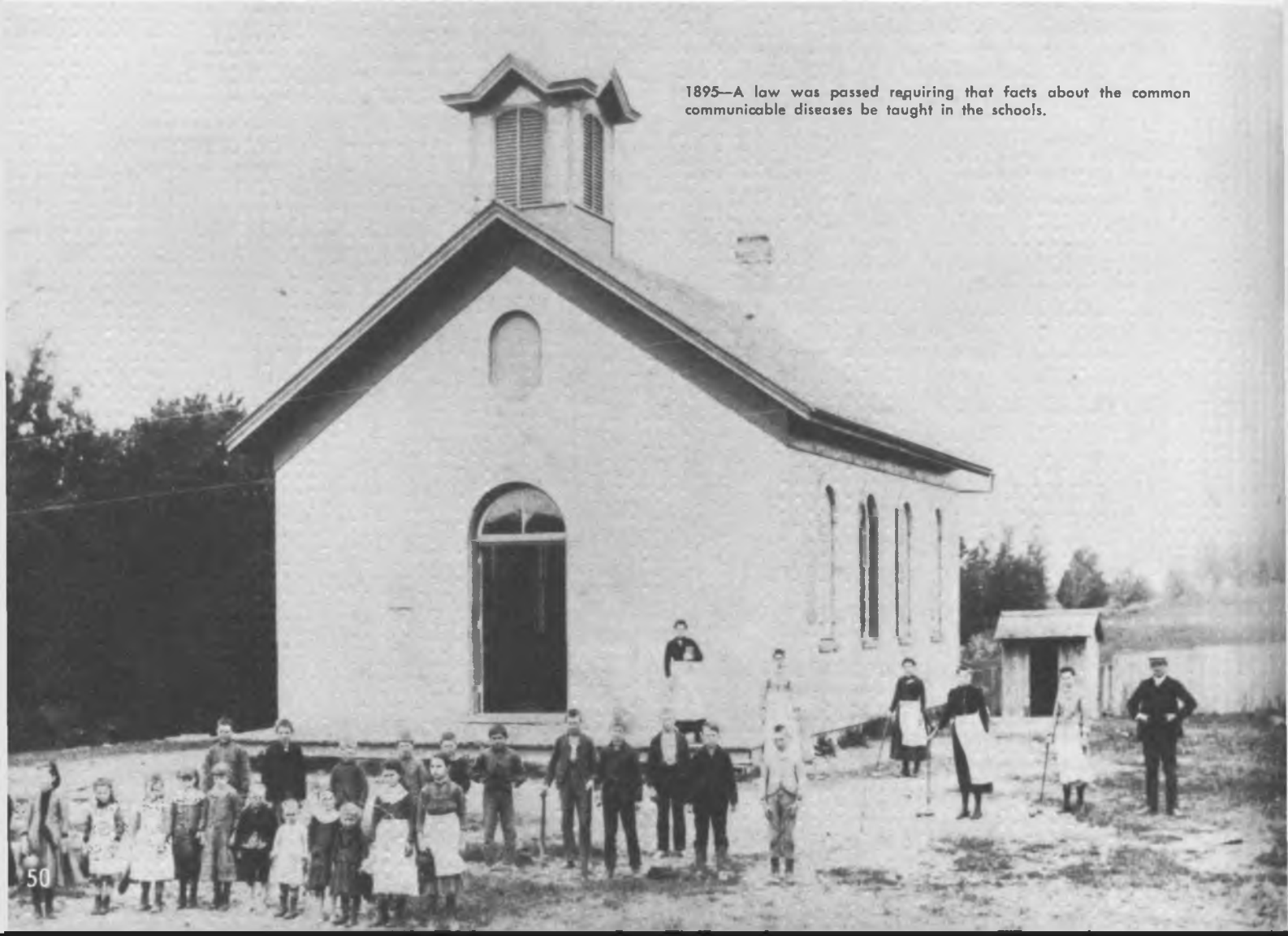
1916—The Wassermann test for the detection of syphilitic infection was begun in the Lansing laboratory on a fee basis.

1917—The Wassermann test was placed on the free list which marked the beginning of laboratory service. This action was necessitated by the high rate of venereal disease among prospective World War I servicemen making them incapable of performing military duty.

1917—The first effort to set up a larger local unit for health supervision was made with the passage of a law authorizing the formation of health districts composed of townships and villages.

1919—The State Board of Health was abolished. Powers and duties of the board were vested in a State Commissioner of Health assisted by a State Council of Health which served as an advisory group. Three bureaus existed in the department:

1. Bureau of Engineering
2. Bureau of Venereal Disease
3. Bureau of Laboratories



1895—A law was passed requiring that facts about the common communicable diseases be taught in the schools.

1919—The laboratories of the department could make practically all of the approximately 150 examinations that would be called for in any diagnostic laboratory.

1921—The responsibility for the collection and compilation of vital statistics was transferred from the Secretary of State to the Michigan Department of Health.

1921—A law was passed which provided for the free distribution of biologic products by the department for the prevention and treatment of disease.

(This law resulted from the high death rate caused by diphtheria).

In the early 1920's Michigan's diphtheria death rate was the highest in the world; an average of 10,000 children annually were attacked by this dangerous affliction, and deaths often exceeded more than 1,200 yearly. Dr. Clifford C. "Cy" Young, a department bacteriologist, went to a great commercial drug house and begged for some diphtheria preventive to test its control in one of the state's institutions. In a letter he was given the brush-off, being told that the material could be purchased at the drug store.

"That," Cy said with a chuckle, "was the most expensive two-cent stamp any drug house ever sent."

He went to Governor Groesbeck, promised that hard-boiled and kindly executive that for $75,000 a year, he could cut the diphtheria death rate to half in ten years' time. Then Cy's laboratory staff began to develop the manufacture of the state's own diphtheria preventive. And the state laboratory was credited with the difference of the cost of the preventive's manufacture and its contract price with a commercial firm.

In two years' time Cy Young accumulated more than $70,000 for his little department, while the diphtheria preventive was being given free—to doctors for immunization of the state's children. With this sum, plus $25,000 appropriated by the legislature, the first small laboratory was built on land which belonged to the state. By 1940 Young's promise to Governor Groesbeck had been kept and multiplied many times over. The deaths from this terrible disease had dropped from 1,200 to a mere 35 or 40 yearly.

1922—Dr. R. L. Kahn, who was in charge of the department's Serological Division in Lansing, developed the Kahn Precipitation Test to diagnose syphilis. This resulted in the discontinuation of the Wassermann test.

1922—The department began the production and free distribution of biologic products for the control of communicable disease.

1909—A law was passed which marked the beginning of public health engineering and gave to the State Board of Health certain authority and jurisdiction over public water supplies owned and operated by private companies.

1913—A law was passed which provided that plans for water systems, water treatment, sewers, sewage disposal and alterations and extensions of the same, must be filed with the State Board of Health within sixty days after the work was completed.

1922—Seven bureaus existed in the department: 1. Bureau of Communicable Disease and Vital Statistics 2. Bureau of Sanitary Engineering 3. Bureau of Laboratories 4. Bureau of Embalming 5. Bureau of Education 6. Bureau of Child Hygiene and Public Health Nursing 7. Bureau of Institutional Health Administration.

THE HALF-CENTURY MARK

In 1923, when the Michigan Department of Health celebrated its 50th anniversary, Dr. Kellogg made the following observations:

I have been greatly pleased to see the great development of the work of the board (State Board of Health) within recent years, but feel that its work should have a still larger scope. It seems to me that it would be most desirable to have all the health activities of the State unified and centralized, so that everything pertaining to health, including the care of livestock, foods and drinks, the health of school children, health interests of every sort, might be well correlated and thus rendered more efficient. (This problem of decentralization of department activities still exists in 1973.)

Dr. Kellogg also mentioned some of the serious health problems that existed in 1923.

At the present time we have almost no inspection of certain important food supplies; any farmer can kill any old thing in the dirtiest possible place, and make it up into sausages or hamburger steak and sell it for food.

We ought to insist that milk, butter and other dairy products and meats, as well as other foods, should be just as clean and free from bacteria as the water we drink.

We are gradually acquiring more cleanly habits, but we have a long way to go before living conditions will be as clean as they should be.

According to statistics now available we have begun to control communicable disease, but we are doing nothing at all to control organic diseases. Through control of contagion, life expectancy under forty is increasing, but over forty life expectancy is decreasing. Insanity, idiocy and imbecility have increased 300 per cent in fifty years. At that rate, in two hundred and fifty years, the whole population will be mentally defective.

Dr. Kellogg concluded his remarks by citing the following challenge:

The State must take better care of its human assets. The State should see that at least every year every citizen, every man, woman, and child, has a health inventory.

1913—A law was passed which provided for the employment of a full-time State Sanitary Engineer and the necessary assistants. Act 98 Public Acts of 1913 as amended required the State Board of Health "to see that all sewage systems are properly planned, constructed, and operated so as to prevent unlawful pollution of the streams, lakes, and other water resources of the State" in addition to assuring protection of the public health.

Dr. R. M. Olin, Commissioner, Michigan Department of Health, also expressed his views during the department's 50th anniversary.

Only as we educate our public to want and demand health protection, will we make possible the advances that we are so confidently predicting for the future. Legislation and law enforcement will never bring the goal in sight. Until we can create an individual, personal, active interest in the health of the community we will never realize the full possibilities of health service. We must make public health a permeating, vital force in our home towns.

HIGHLIGHTS 1924–1973

1924—The department conducted a state wide goiter survey which resulted in the production of iodized salt by salt manufacturers. These actions practically eliminated the disease.

1924—The free distribution of silver nitrate for the prevention of blindness of the newborn was initiated.

1924—The department began the distribution of certificates of registration of birth to parents of all children whose births were registered with the department.

LEADING CAUSES OF DEATH
MICHIGAN — 1923

1.	Organic Heart Disease	6,618
2.	Cerebral Hemorrhage	3,959
3.	Cancer	3,472
4.	Lobar Pneumonia	2,863
5.	Tuberculosis	2,837
6.	Chronic Nephritis	2,350
7.	Bronchopneumonia	1,856
8.	Diarrhea	1,380
9.	Influenza	1,309
10.	Diseases of Arteries	1,131

1925—Regulations governing midwives were issued by the department calling attention to laws which required them to report births and to use a prophylactic solution in the eyes of the newborn.

1925—A roadside water survey was begun by the department whereby water from roadside wells was tested to ensure safe drinking for travelers.

1926—The Western Michigan Division Laboratory was established in Grand Rapids.

1927—A law was passed which provided for the regis-

1913—The first resort inspections were conducted.

In 1949, a traveling laboratory was put into service for examining water, milk, and sewage in the northern part of the lower peninsula and the eastern part of the upper peninsula of Michigan where there were no laboratory services.

tration and supervision by the department of laboratories where live pathogenic germs were handled.

1927—County boards of supervisors were given the authority to establish county or district health departments.

1931—The department was given authority to require that operation permits be obtained for all public swimming pools.

1931—An amendment to a 1913 law was passed requiring that plans for water and sewer systems be submitted to the department in advance and that a construction permit be obtained from the State Health Commissioner.

1937—The reporting of occupational diseases was required and the department was authorized to take appropriate measures to prevent them.

1937—The legislature passed the Antenuptial Physical Examination Law requiring medical examinations of prospective brides and grooms to ensure freedom from venereal disease.

Diseases of most concern in 1937 were scarlet fever, whooping cough, pneumonia, typhoid fever, meningitis, venereal disease, tuberculosis, measles, diptheria, poliomyelitis, and smallpox.

1939—The branch laboratory at Powers in the upper peninsula was established.

1940—Distribution was initiated of the internationally famous whooping cough vaccine which was perfected by Dr. Pearl Kendrick at the Western Michigan Division Laboratory in Grand Rapids.

1940—The department operated the first mobile X-ray unit of its kind in the country.

1941—Licensing of trailer and mobile home parks began.

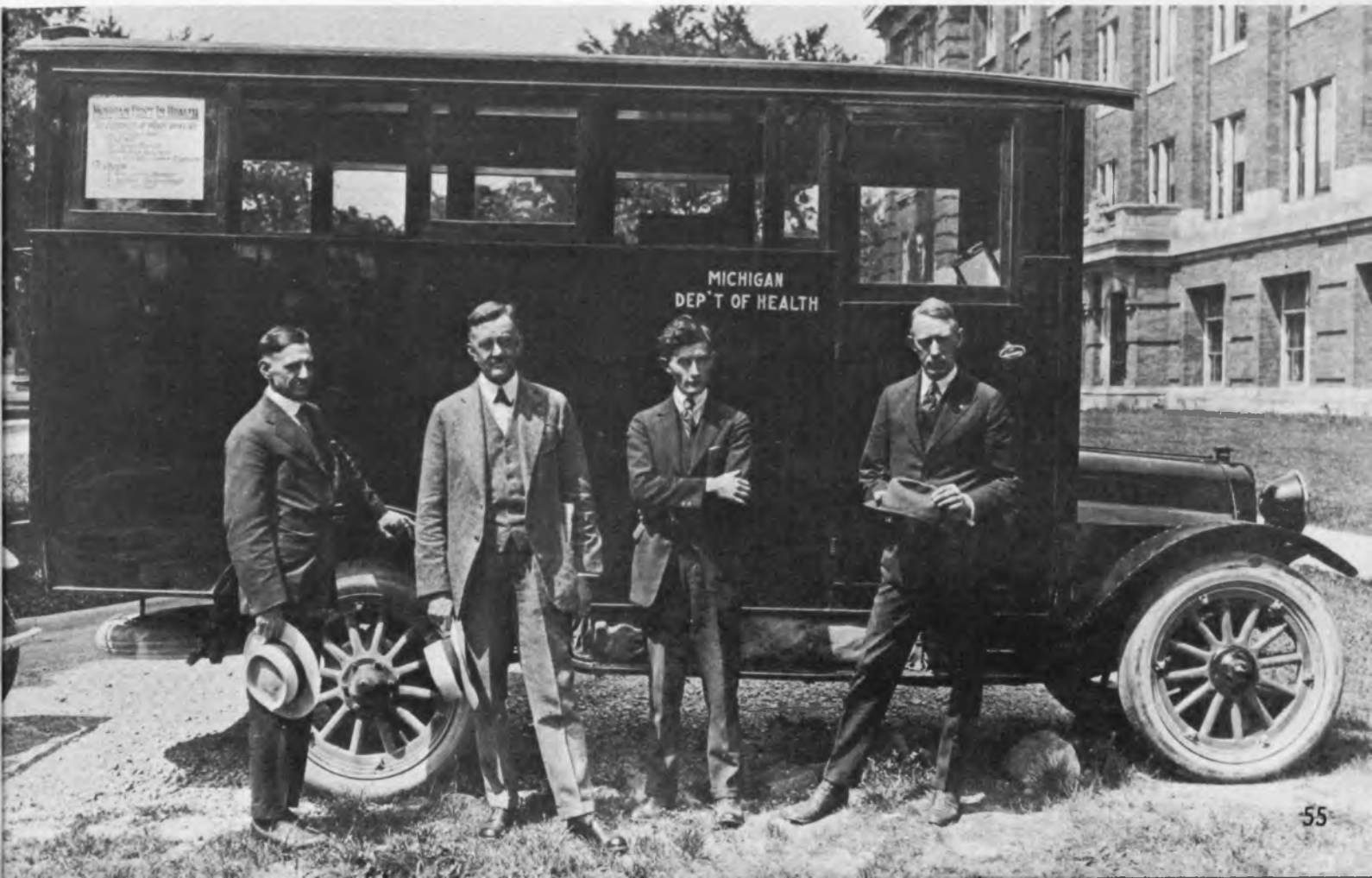
1943—An event took place which resulted in the department being the first of its kind to produce and distribute blood products.

A truck driver from Portland, Michigan was smashed up in an accident on the highway. He was brought to a Lansing hospital where the first thing he was asked was who in his home town would guarantee the cost of the plasma he desperately needed.

He gave the names of his mayor and of his banker. Unfortunately, they were not immediately available by phone, and while hospital authorities attempted to get in touch with them, the man went into shock and died.

Dr. "Cy" Young, the department's bacteriologist, was infuriated. It was his conviction that commerce in human blood was infamous. He went immediately to Governor Harry F. Kelly and said, "You can bury a baby for $125; it might cost $500 to save that same kid with plasma you'd have to buy at the drug store. If you want to bring money into this argument, it would be a damn sight cheaper to let babies die."

Here's the way Governor Kelly looked at human life when it became necessary to measure it in terms of



dollars. "It will cost about $250,000 a year to provide all the plasma needed for all the state's citizens. Doctor Young estimates that free plasma will mean a yearly saving of a minimum of one thousand lives. I'll settle for $250 apiece to save them."

1943—The department became the first state health department to establish a state-wide hearing program to include a mobile unit.

1944—Department nutrition consultants provided educational services for the planting of victory gardens.

During World War II, the department gained national recognition for developing a system of rapid serologic identification of dysentery bacteria.

THE RECORD SHOWS—

That among the greatest cripplers of the striking power of our armed forces, of the productive capacity of our industrial workers, are the venereal diseases—syphilis and gonorrhea.

Serious in peace, their prevalence in wartime becomes a threat to national security. Since Pearl Harbor great gains have been made against them, but heavy losses have been suffered, too.

Intensification of the struggle against them is the target for

SOCIAL HYGIENE DAY—FEBRUARY 2, 1944

1945—Grand Rapids became the first city in the nation to add fluoride to its water supply as prescribed by the State Health Department.

1945—The department purchased an electron microscope ($12,500) which served as a more rapid diagnostic tool for viewing bacteriophage.

1947—The department expanded its services in speech correction, vision, and hearing.

1948—The broadest and longest ragweed pollen survey ever conducted in Michigan was completed by the department to provide hay fever sufferers with information on pollen concentration throughout the state.

1948—G. Donald Cummings, M.D., served as acting department director.

Former State Senator Frank D. Beadle reminisced about Dr. Cummings in a speech before the Michigan Public Health Association's annual meeting on May 18, 1973.

Dr. Don Cummings was one of the greatest public servants that ever served people anywhere—at a sacrifice of considerable financial benefits from possibilities of employment by industry and at the sacrifice of his own health. He dedicated himself to the health of people in Michigan.

If anyone had the spirit of people, the enthusiasm, the capability to move a program, Doc Cummings had it. When he came to the Appropriations Committee, I was always glad to see him because we would always have a full committee meeting. And we would always wind up asking him if he couldn't use more money.

G. Donald Cummings, M.D.

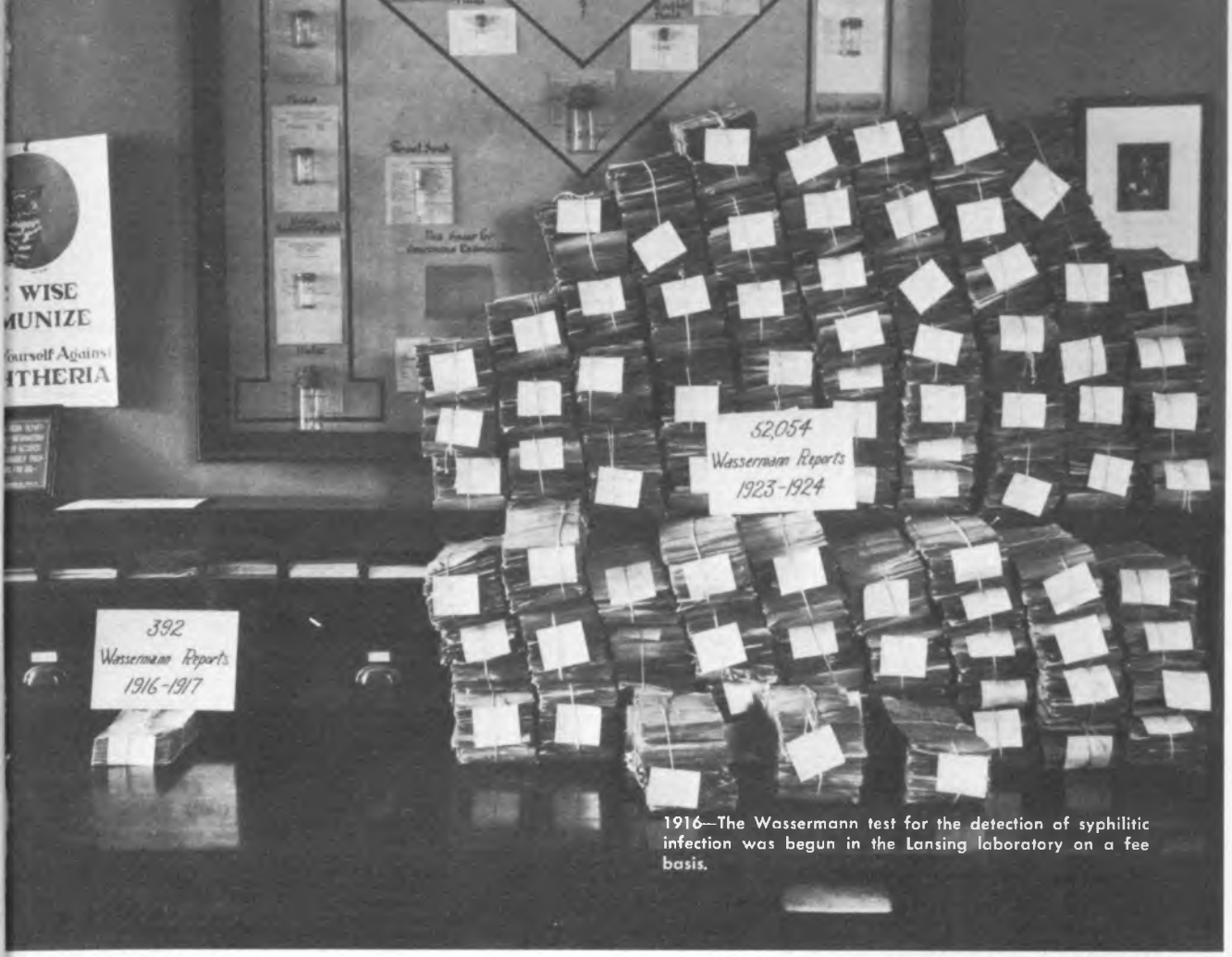
If he wasn't ready to talk about something you couldn't pry it out of him with a crowbar. I remember on one occasion he didn't particularly like the lines of questioning and he went off on the story of a couple of little work horses on the back eighty behind the health department headquarters out on Logan Street.

He said he noticed one of the farmhands jumping horses one day and he asked him about it. And the hired man said that he'd been working with the horses for quite a while, and amazing to him they had a great aptitude for jumping fences. So Doc Cummings said "Well, why don't you enter these horses in the State Fair?" And they were entered.

These work horses strutted off with every blue ribbon. And—the story went on—the horses were entered in event after event. Finally, as Doc told it, he lost track of them until one day a newspaper reported that the old work horses from the health department grounds in Lansing had become the grand champion jumping horses in the Belgium blue ribbon fair.

It's quite a story. But it accomplished Doc's purpose because by the time he got through telling the story, the committee had forgotten what they were questioning him about.

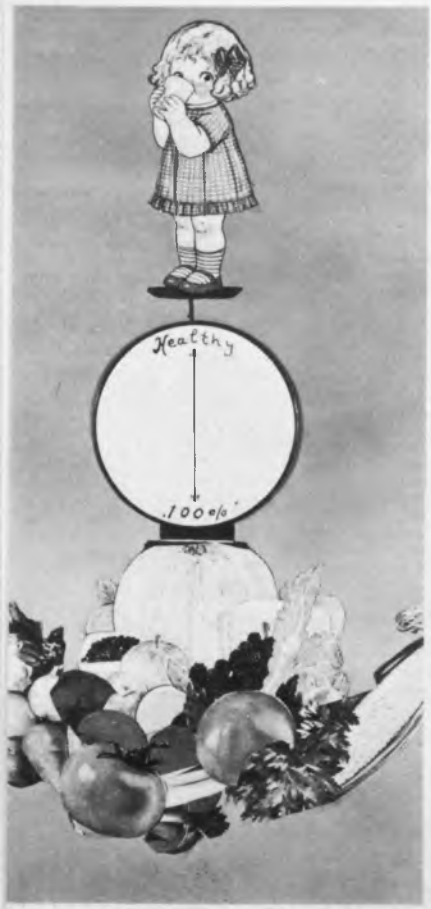
1948—The first Michigan Plan for Hospital and Medical Facilities Construction was developed. This plan identified actual "service areas" within the state, and projected the number of acute general hospital



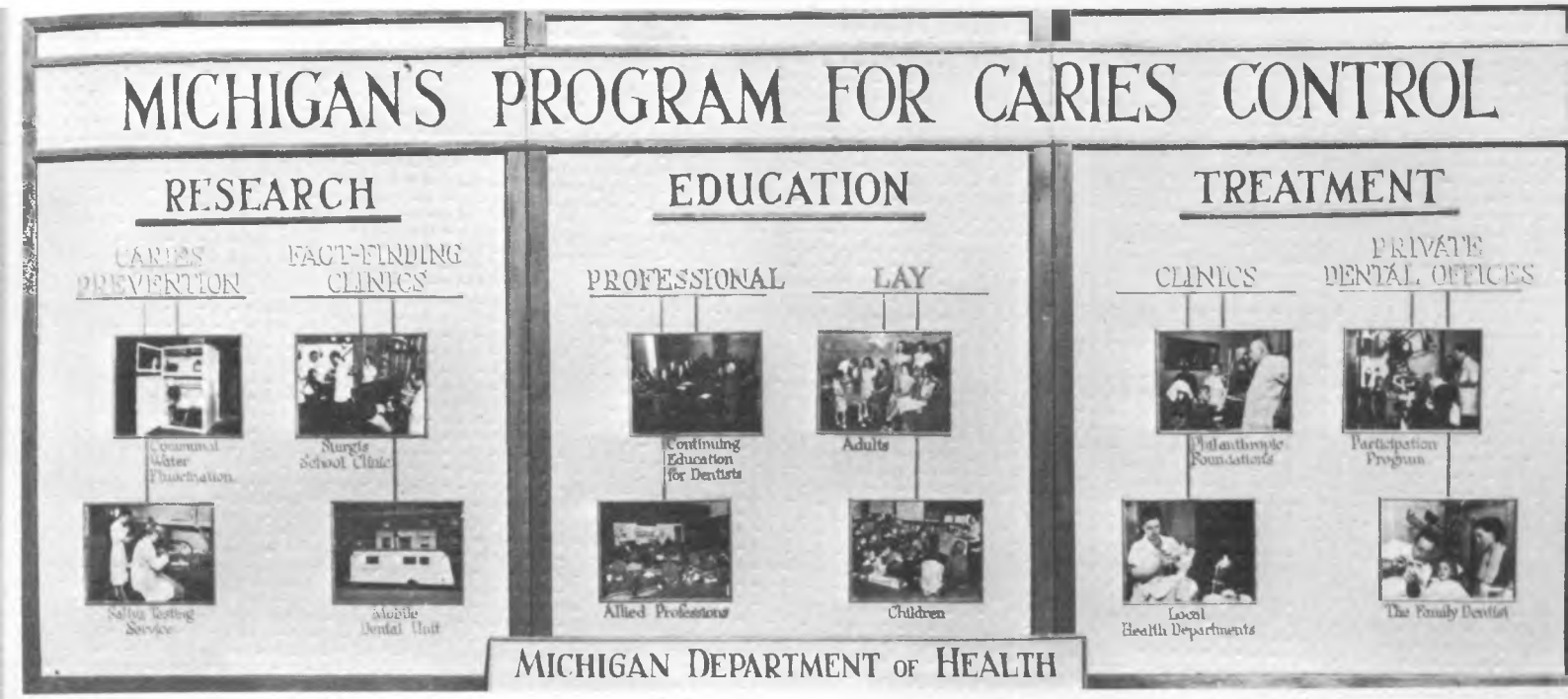
1916—The Wassermann test for the detection of syphilitic infection was begun in the Lansing laboratory on a fee basis.

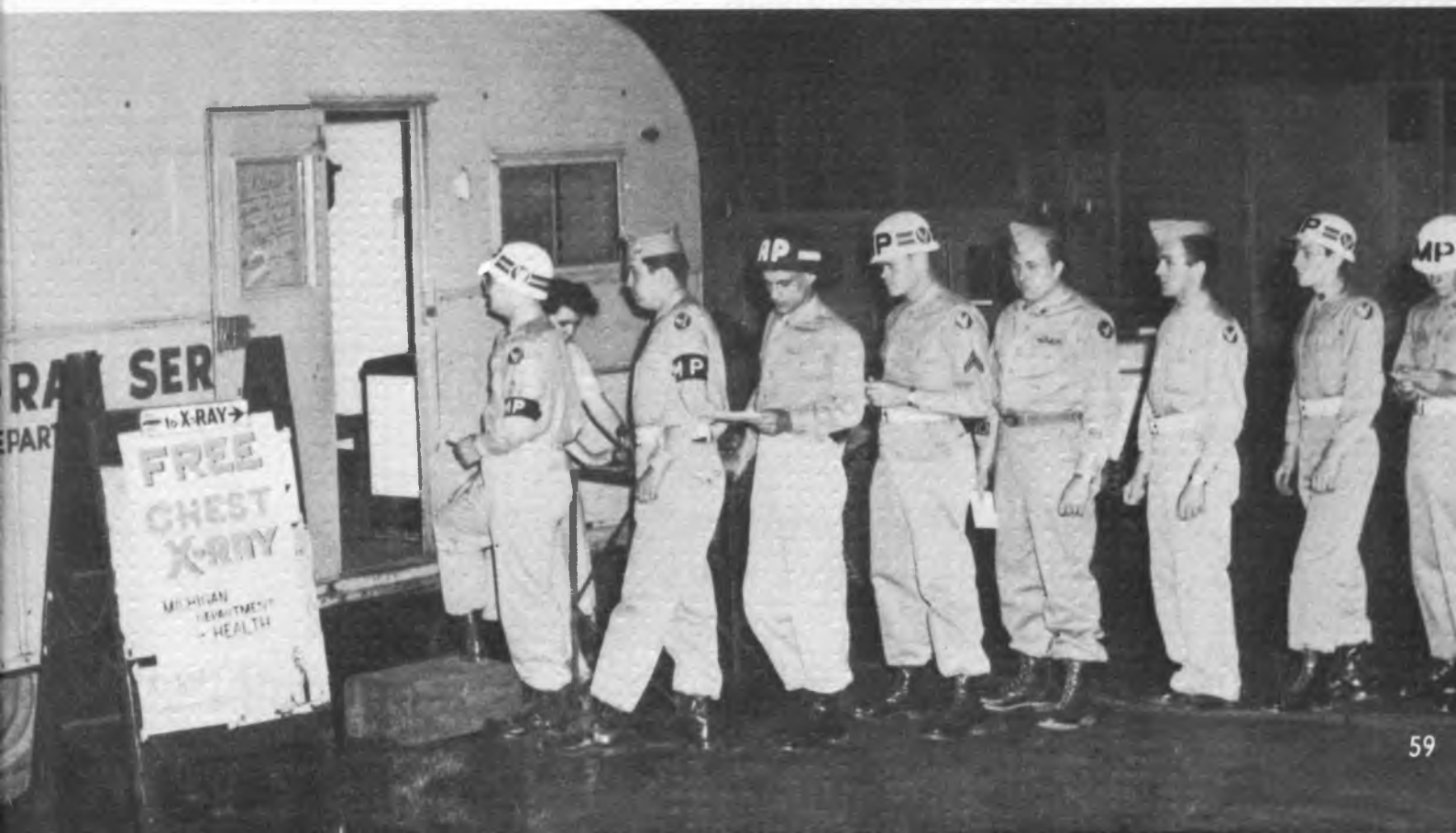
1921—The responsibility for the collection and compilation of vital statistics was transferred from the Secretary of State to the Michigan Department of Health.

Early educational efforts were aimed at school children using graphic posters and exhibits.



Preventive efforts included comprehensive dental health programs and free chest x-rays for early detection of tuberculosis.

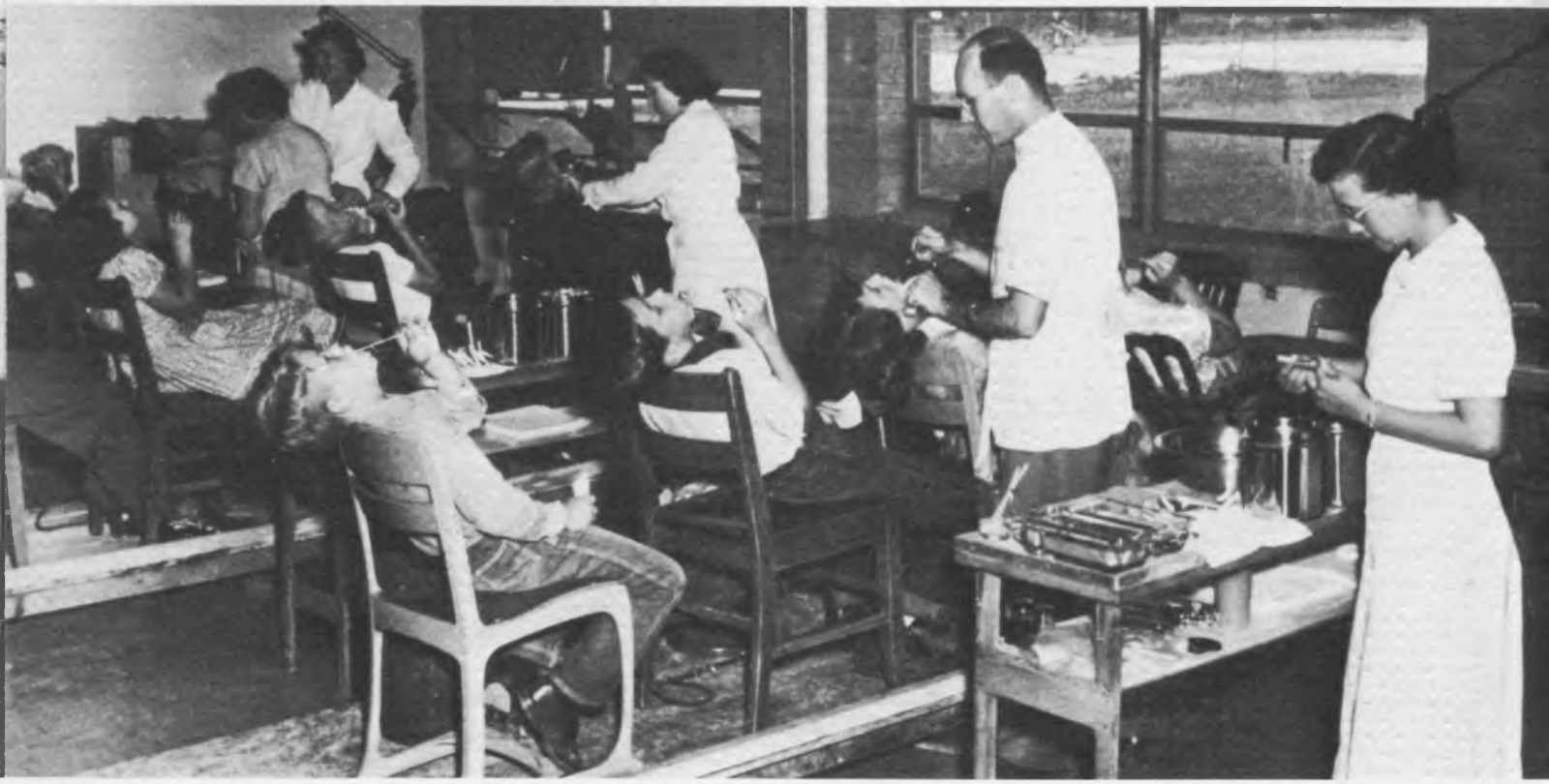




The State Health Department's vision program included concern for and recommendations on a good classroom visual environment. (above—left)

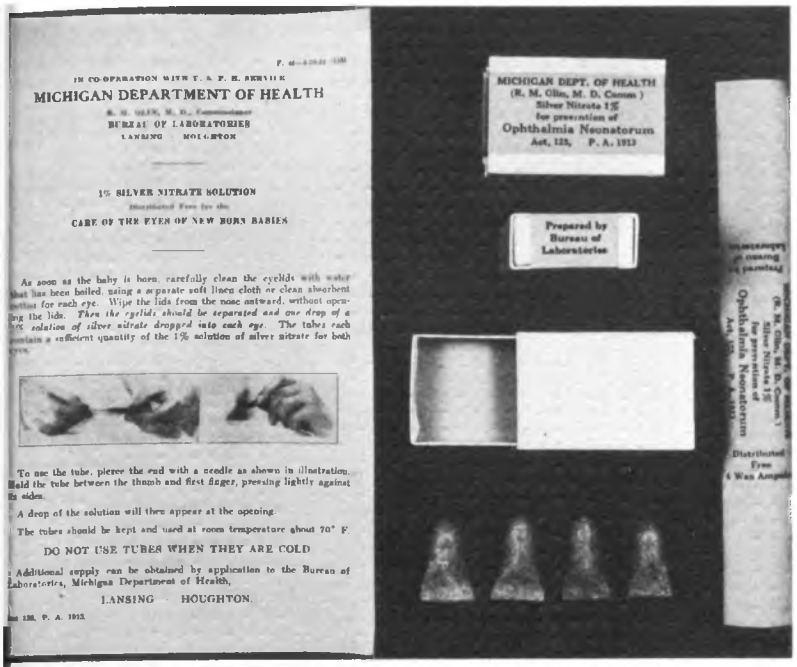
The topical application of fluoride to prevent tooth decay was begun in 1949. (bottom)

Michigan was known as the goiter state because its ground and waters lack iodine. As a result, the State Health Department worked with salt manufacturers to have iodine added to salt, thus preventing goiter.



By administrative rule, all Michigan babies' eyes are treated with a silver nitrate solution to prevent possible blindness from venereal disease. (above)

A biologic product manufactured by department laboratories is delivered to state plane for emergency delivery. (bottom)



and long term care beds needed in each such area based on trends in current use.

1948—Thirteen bureaus existed in the department: 1. Bureau of Disease Control 2. Bureau of Education 3. Bureau of Engineering 4. Bureau of Finance 5. Bureau of Industrial Health 6. Bureau of Laboratories 7. Bureau of Local Health Services 8. Bureau of Maternal and Child Health 9. Bureau of Public Health Dentistry 10. Bureau of Public Health Nursing 11. Bureau of Records and Statistics 12. Bureau of Tuberculosis Control 13. Bureau of Venereal Disease Control.

1949—The 13 bureaus of the department were reorganized to seven divisions: 1. Division of Local Health Administration 2. Division of Laboratories 3. Division of Administrative Services 4. Division of Disease Control, Records, and Statistics 5. Division of Engineering 6. Division of Industrial Health 7. Division of Tuberculosis and Venereal Disease Control.

1949—The department was designated as one of the first four regional salmonella-identification centers in the nation linked with an international agency established in 1948 at Copenhagen by the World Health Organization. Salmonella are the bacteria most frequently involved in food-borne infections.

1949—A leading role was played by the department in developing a dried smallpox vaccine which could withstand a hot climate thereby making possible the control of smallpox in the tropics.

1949—Free penicillin for the treatment of gonorrhea was made available to all practicing physicians in Michigan through the state or local health departments.

1949—A traveling laboratory was built and put into service for examining water, milk, and sewage in the northern part of the Lower Peninsula and the eastern part of the Upper Peninsula where there were no laboratory services.

1950—The department initiated a program requiring all persons who clean and provide maintenance for septic tank systems be qualified and licensed by the state.

1950—Through its studies of bacterial viruses, the department together with two scientists in England established the mechanism of bacteriophage typing of typhoid bacteria which led to a broadened interest in the field of medical virology.

1950—World recognition was earned by the department for discovering bacterial strains responsible for acute epidemic diarrhea in new-born children. This led to control methods that have virtually eliminated large-scale outbreaks of infant diarrhea in hospital nurseries.

1951—The department became famous throughout the world for its work and manual on industrial ventilation.

1951—The department's laboratory blood program was expanded to meet demands caused by the Korean conflict.

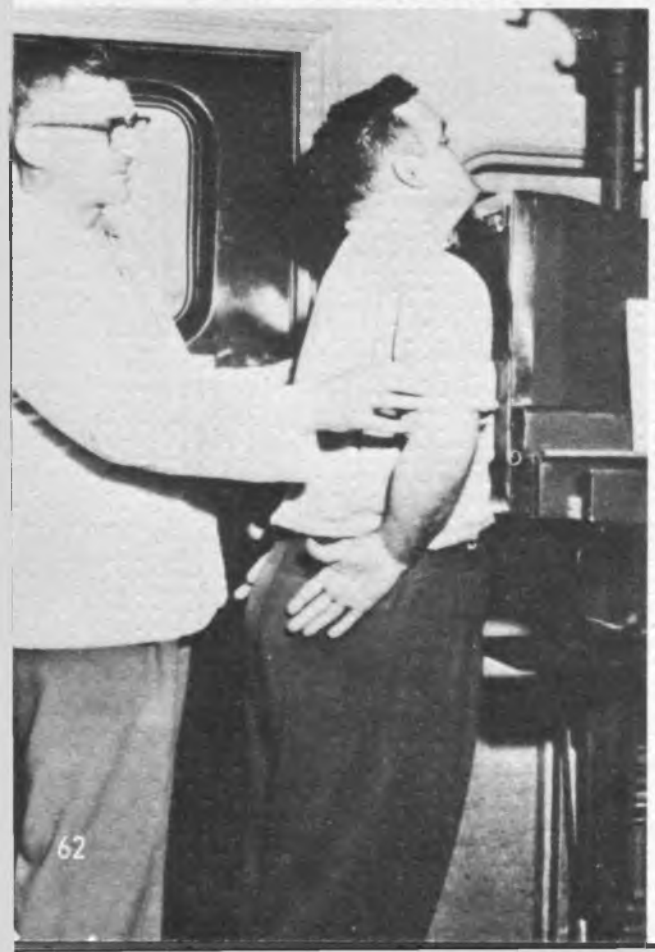
1953—Gamma globulin, which had been tried extensively in controlled experiments the year before,

A "jet gun" is used for administering rubella vaccine. (above)

The mobile chest x-ray unit was widely used in identifying tuberculosis during the 1950's and 1960's. (bottom - left)

Michigan children were among the first in the nation to receive Salk polio vaccine. (above)

Health screening tests for adults were offered across the state in mobile units. (bottom - right)



Migrant housing conditions have improved because of sanitation measures taken by the State Health Department.

A municipality's waste reaches the waste treatment plant (upper right) where it undergoes several stages of treatment before the effluent is dumped into a body of surface water (inset). Operators of these treatment plants are trained and certified by the department.

was distributed by the department to physicians for administration to members of a family in which a polio case occurred.

1953—The department continued to be the only agency in the country producing the blood product, antihemophilic globulin. This blood derivative is useful in the control of hemophilia and many undiagnosed hemorrhages.

1953—"HDA" (Health Department Approved) signs were posted by resort operators whose establishments met the standards recommended by the department.

1954—The legislature made the State Health Commissioner responsible for the certification of all hospitals to the State Department of Social Welfare.

1954—The department began a program to detect cases of cervical cancer in the early stages when treatment is highly successful and to educate women about the importance of periodic checkups by their physician.

1954—The department was the first to invent a practical method for recovering serum albumin from placental blood. This led to the discontinuation of the production and distribution of plasma in favor of the more desirable serum albumin.

1954—The department announced that Michigan would be one of the trial states for testing Salk polio vaccine.

1954—The department began testing and certifying sewage treatment plant operators.

1956—Fifty-four Michigan communities had adopted fluoridation.

1957—The department began a program to develop drugs that resist or inactivate cancer.

1957—The department developed a new laboratory method for distinguishing between hemophilia and related diseases.

1957—The department was among the first such agencies in the nation to provide for free distribution of polio vaccine for children and pregnant women.

1958—With the encouragement of the State Health Department, city and county health departments located in the same county began to consolidate so as to provide better health services to the public.

1959—The department's enlarged and remodeled blood fractionation laboratory began full production. Blood fractions were provided all counties of Michigan either as a direct service or indirectly through the Lansing, Detroit, and Muskegon Red Cross regional blood centers.

1961—Of Michigan's 83 counties, 69 were served by local health departments.

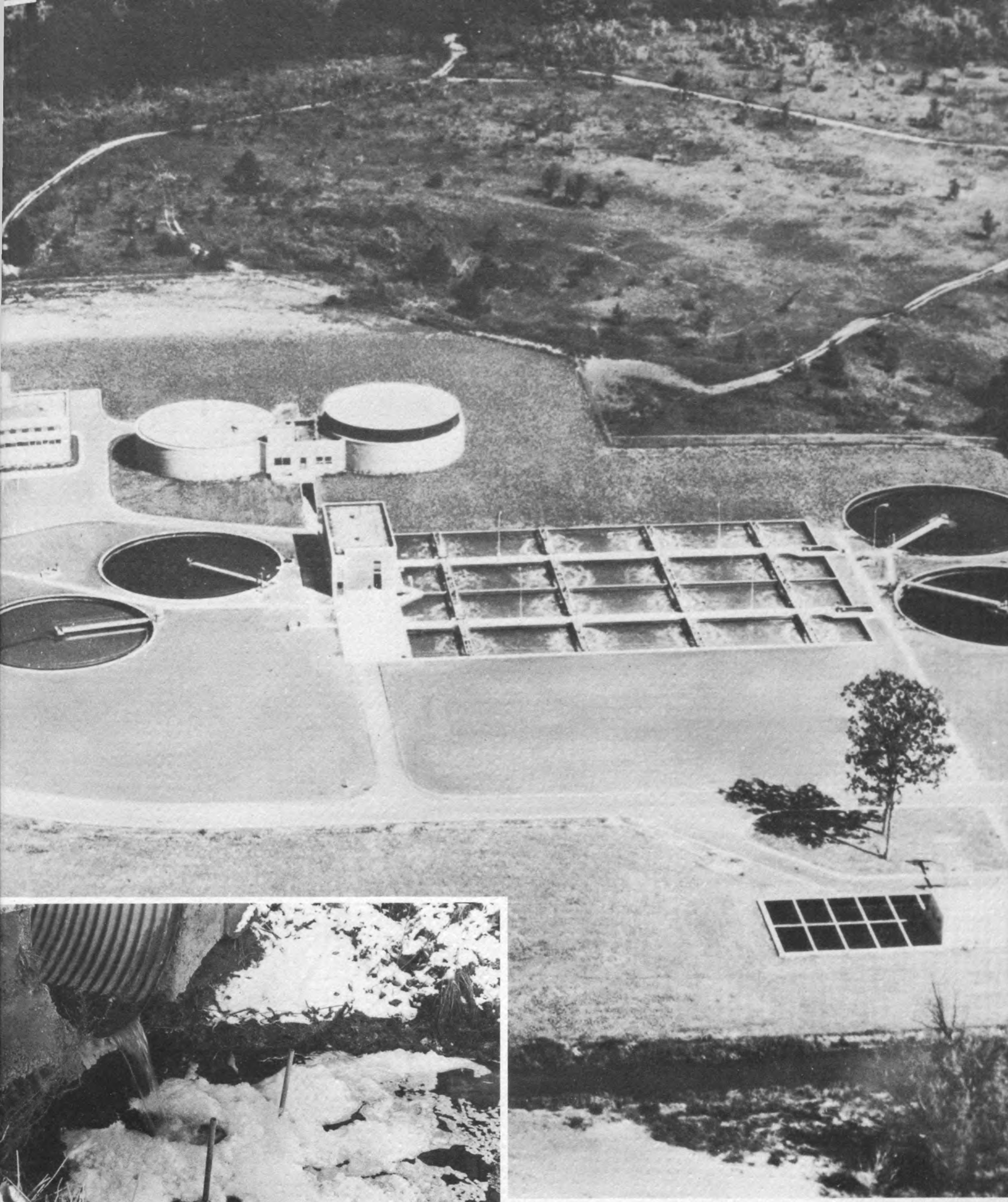
1961—A simple field test and kit were prepared for use by sanitarians in analyzing harmful detergents in well water.

1961—Successful trials were conducted with the fluorescent antibody method of diagnosing rabies.

1961—A quadruple vaccine was prepared containing diphtheria, tetanus toxoids, pertussis (whooping cough) and polio vaccine.

1962—Nearly a half-million doses of Salk vaccine were

A health department sanitarian takes a well water sample which will be analyzed to determine the presence of harmful detergents.



Air pollution comes from many sources, as noted in these pages. The first effort at controlling contaminant sources came in 1964 when the department was designated as the official state air pollution control agency. In 1965, a nine member Air Pollution Control Commission was established within the department.


L.V.C.
MOSQUITO
CONTROL

Breeding places for flies and mosquitoes became matters of concern under the department's Vector Control program (opposite page). Before subdivisions like that shown here are developed, health authorities review the plats to prevent future water supply and sewage problems. (below) In 1965, the department began to license solid waste disposal sites. (bottom)

distributed by the department's Division of Epidemiology.

1962—Phenylketonuria (PKU) testing began. PKU is a disease that can cause mental retardation.

1962—The Venereal Disease Research Laboratories (VDRL) test for syphilis was used in place of the Kahn test. It was not only cheaper to perform than the Kahn test, but was more satisfactory from the standpoint of ease of performance and reading.

1962—Only 19 cases of paralytic polio were reported compared with 1,957 cases in 1952.

1962—Department divisions included: 1. Division of Engineering, 2. Division of Laboratories, 3. Division of Maternal and Child Health, 4. Division of Occupational Health, 5. Division of Epidemiology, 6. Division of Hospital and Medical Facilities, 7. Division of TB and Adult Health, 8. Division of Health Information, 9. Division of Local Health Administration, 10. Division of Dentistry.

The department's philosophy and achievements of 1963 are summarized in the following paragraphs taken from a 1963 annual report.

Public health is prevention. It is the combined efforts of a people — spearheaded by professional public health and voluntary agency workers — to improve their general well-being. The success of public health efforts in any one year is difficult to measure, since it's what didn't happen that counts — that which was prevented. And how does one go about counting the number of cases of disease that were prevented by immunizations?

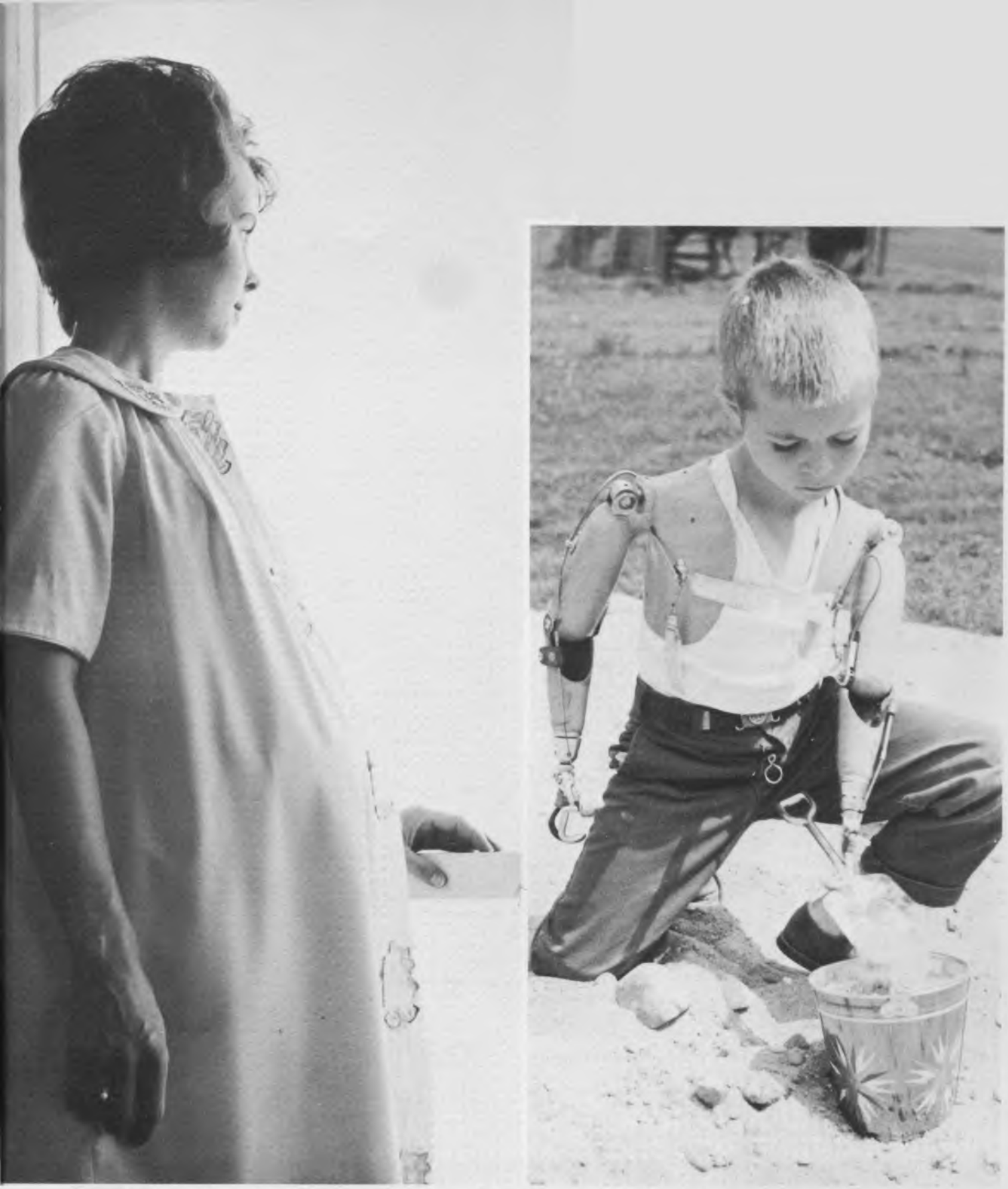
Grand Rapids is a case in point — the city where the most dramatic public health story of 1963 took place. A county-wide immunization campaign with oral polio vaccine was held after a number of cases of Type I polio were discovered. A total of eight persons came down with the crippling disease before the immunization campaign got underway, but only one additional case developed after that. How many cases of polio were prevented?

How do you measure the amount of water pollution that was prevented when 20 communities constructed sewage treatment facilities last year with the assistance of the State Health Department?

How do you count the number of mothers who did not die in childbirth last year, or the number of newborn infants who were spared the ravages of a diarrhea epidemic in a hospital nursery?

These are the results of public health programs that are helping to improve the general health picture in Michigan. Looked at for any one year, they may not seem particularly impressive. But placed in proper prospective — matched against statistics for 10 or 20 years ago — the achievements of 1963 are remarkable. Last year's record of only 20 polio cases must be compared with 1952's mark of 3,912. The 277 tuberculosis deaths reported during the first eleven months of 1963 represent a substantial savings of lives

Vision and hearing testing



The department's Maternal and Child Health Program attempts to prevent many birth defects through good prenatal care. Children who have lost one or more limbs are provided artificial limbs and taught to use them by the Amputee Center in Grand Rapids.

contrasted to the 1,134 TB deaths in 1950. Michigan's 30-year record of no cases of typhoid fever traceable to a public water supply—which was continued last year—would be considered a miracle in the first two decades of this century.

In these, and in all of the other public health programs, some of them dramatic, some routine, prevention has been the key to progress, the ultimate goal.

1964—The rubella virus was isolated for the first time in the department's laboratories.

1964—The fluorescent antibody technique for the demonstration of rabies virus was extended to all animals submitted to the department's laboratories.

1964—Work was initiated on an experimental human tetanus immune globulin program to replace the horse serum tetanus antitoxin which frequently produced toxic reactions when administered to injured persons who had not been immunized against tetanus.

1964—The department was designated as the official state air pollution control agency.

1964—The department's efforts in municipal wastewater control were recognized by the U. S. Public Health Service: "Operators of municipal waste treatment plants in Michigan are the best trained and most closely supervised operators in the country."

1964—The department employed a migrant health consultant to provide liaison with all agencies involved with migrant health services and stimulate and improve the full use of community health facilities by migrants working in Michigan.

1964—The department together with the Detroit Department of Health administered the Detroit Maternity and Infant Care Project. This project offered comprehensive outpatient and inpatient services to mothers and their infants as well as community health services such as public health nursing, nutrition, and social services.

1965—A nine member Air Pollution Control Commission was established within the department.

1965—The department was given authority to license solid wastes disposal sites.

1965—New legislation passed allowing local health departments to provide family planning assistance.

1965—The legislature passed the Air Pollution Control Act requiring business or industry to get approval for any new equipment or changes in existing equipment which would affect the outside air.

1965—New legislation made "PKU" (phenylketonuria) testing mandatory for all Michigan infants.

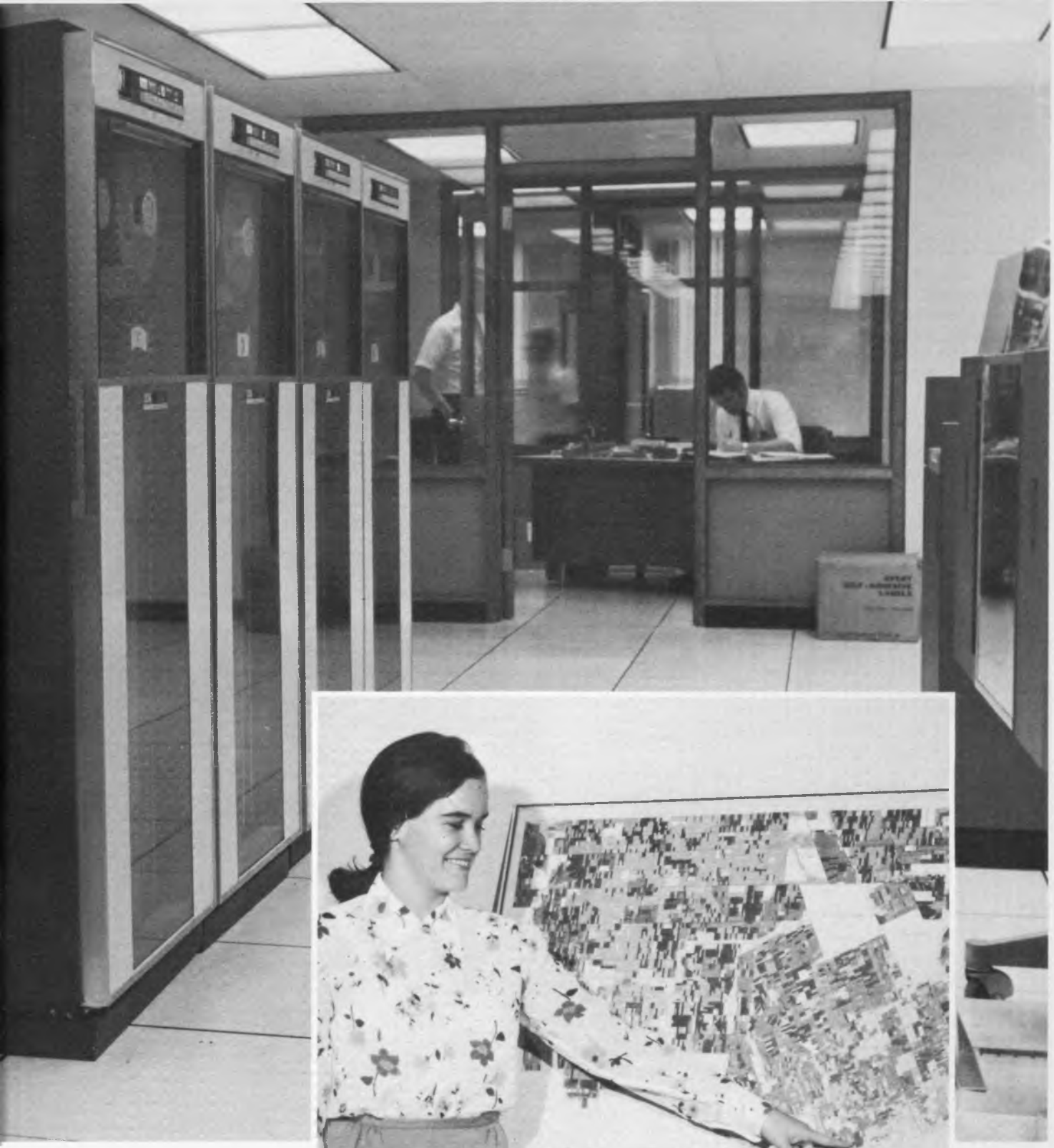
1965—New legislation made it mandatory that all Michigan counties establish a local health department.

1965—The department began using computers in its Statistics and Evaluation Center to process data on births, deaths, marriages, and illnesses from the local health departments.

1965—The department administered Medical Self-Help courses to train lay people in the medical know-how they need in a natural or man-made disaster.

1965—The department followed up on men unable to

Vital Records—Birth, marriage, divorce, death data provide a statistical baseline to help the department measure demographic characteristics of the state and plan health programs. Michigan has the second most complete set of vital statistics in the nation, dating back to 1867.




CITY OF DETROIT

pass the military physical examination and referred them to health authorities.

1965—The department conducted a 24 hours per day air-sampling schedule for monitoring radiation.

1965—A legislative act reduced the number of principal state agencies from 120 to 19. As a part of this act, a new Department of Public Health was created incorporating most of the functions of the former State Health Commissioner, Crippled Children Commission, Board of Alcoholism, and Veterans' Facility.

1965—The Ground Water Quality Control Program was initiated which resulted in well drillers and pump installers being registered.

1965—Act 289, Public Acts of 1965, established housing occupancy standards for migrant labor camps.

1966—A licensure program for landfills began.

1966—Under Act 169, Public Acts of 1966, all children entering Michigan schools were required to be tuberculin tested.

1966—The department's Center for Health Statistics was created.

1966—All counties in Michigan were being served by full-time health departments.

1966—A new state law made the department responsible for supervision, construction, and operation of public swimming pools.

1966—The department was made responsible for issuing licenses to certain dry cleaning plants as well as conducting annual inspections.

1966—The department's family planning program was initiated.

1966—The department was divided into six bureaus: 1. Bureau of Management Services 2. Bureau of Community Health 3. Bureau of Environmental Health 4. Bureau of Maternal and Child Health 5. Bureau of Medical Care Administration 6. Bureau of Laboratories.

1967—Project ECHO (Evidence for Community Health Organization), a comprehensive survey-action program was launched on a pilot, demonstration basis in nine health jurisdictions. The project produced current descriptions of the population and environmental conditions on a neighborhood basis as well as extensive data on health, illness, and the utilization of health facilities and services.

1967—The Comprehensive Health Planning Commission was established in the Governor's Office chaired by the Director of the Department of Public Health and composed of the Directors of the Departments of Social Services, and Mental Health, the Director of the Bureau of the Budget, and the Executive Assistant for Program Development. The commission's role was to establish and maintain a continuing planning process for developing and adopting recommendations to guide the organization, financing, and provision of health services.

1968—Legislation passed whereby communities had five years to decide to either fluoridate their public water supplies or exempt themselves from the law by ordinance of referendum.

In 1956, the department was authorized to license and regulate nursing homes (opposite page). The department also administers a state program for hospital and medical facilities construction (below).

1968—A new alcoholism information and counselling center was opened in Marquette County bringing the total number of centers in the state to nine.

1968—The anti-cancer agent Mitogillin was developed.

1968—The legislature passed licensing laws for hospitals, laboratories, ambulance services, and restaurants, and enacted statutes modernizing the handling of adoption records, and setting the parameters of the state's alcoholism program.

1968—The Subdivision Control Act of 1967 became effective. This law stated that lands not suitable for development because of incompatibility with health rules and standards would be denied approval.

1968—The department's G. Donald Cummings Cancer Products Development Center was completed.

1969—The Michigan Health Survey replaced ECHO (Evidence for Comprehensive Health Organization). It involves collecting, analyzing, and disseminating basic environmental, health, and demographic data.

1969—Migrant Family Health Clinic services were established in 17 counties which employ about two-thirds of the total migrant population.

1969—Preliminary implementation of a medical review and nursing evaluation program began. The purpose of the program was to determine the level and intensity of care needed by an individual, the ability of a health care facility to provide the needed care, the appropriateness of the care being provided, and whether alternative and possibly less costly facilities and services might serve the need as well or better.

1969—The department's Developmental Microbiology Laboratory became a reference laboratory for the National Communicable Disease Center for identifying bacteriology cultures prior to their use as proficiency specimens.

1969—The pilot plant of the G. Donald Cummings Cancer Products Development Center was used to stockpile semi-pure material of MDPH 31595C which is active against leukemia.

A summary of public health in the 1960's is provided in the following two paragraphs from the department's 1971 Michigan Health Profile.

"The 1960's was a decade which began with a challenge to ask what we could do for our country and ended with the growing realization that mankind is poisoning and destroying its own environment and a decade during which the groundwork was established for comprehensive environmental monitoring. The development of effective controls and remedial actions to eliminate or minimize pollution of air, water, and land surely is one of our major local and national concerns in the 1970's.

The 1960's was also a decade during which the problems of obtaining adequate health care reached crisis proportions, and the cost of such services rose precipitously. While noteworthy gains were made in the prevention or control of some communicable diseases, chronic illnesses such as heart disease and cancer became increasingly evident. Net progress appears to have been minimal and unevenly distributed among various population groups. As the '70's began, there appeared to be general agreement that strong coordinated actions to promote the development of new ways of organizing and providing health care would be needed if the deterioration in the provision of services was to be halted and reversed."

1970—A comprehensive alcoholism program was developed for expanding local programs into comprehensive alcoholism complexes centered in county health departments. The plan provided for identifiable programs of administration, coordination, and program evaluation; information and education; case-finding; intake; detoxification and analysis; inpatient treatment; outpatient treatment; rehabilitation; follow-up and patient evaluation.

1970—The department assumed the primary responsibility for prevention, public education, and the development of community services designed to assist and support the post-treatment drug abuse patient.

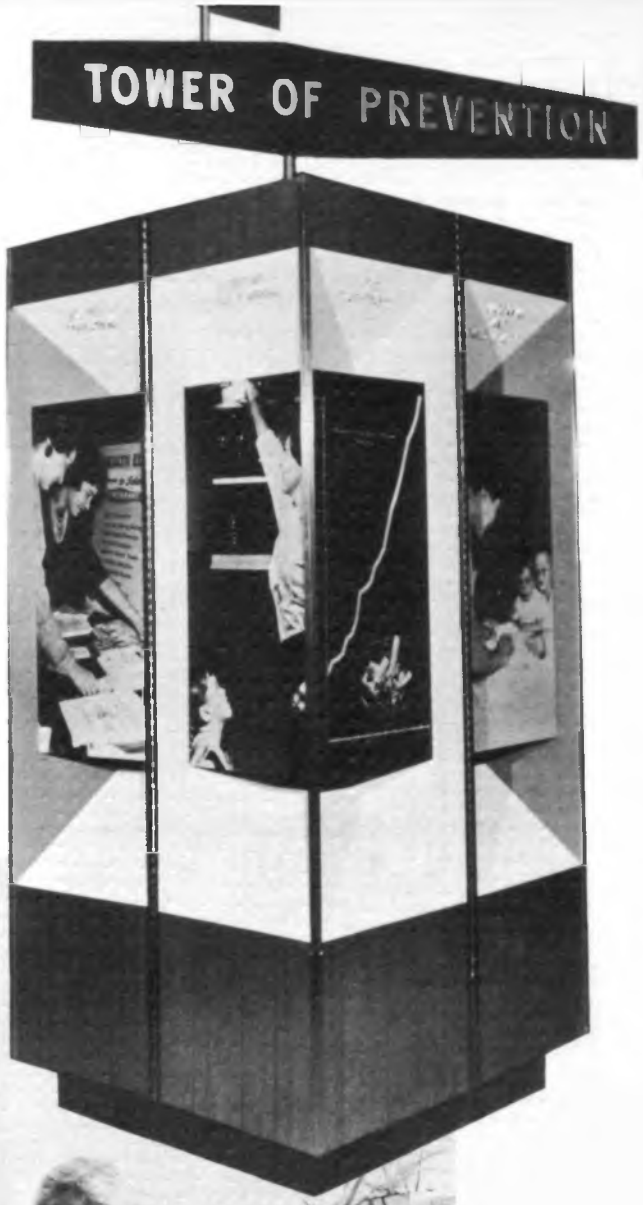
1970—A statewide immunization campaign for the control of rubella was conducted. The campaign was directed at kindergarten through third grade children.

1970—A mechanized records system was developed by the Crippled Children Division which was compatible with the Department of Social Services' Medicaid record system. The new records system enables instant identification of a child eligible for Medicaid to cover the cost of needed medical attention, thus allowing the best use of Medicaid funds as well as assuring that when a child is crippled he gets the kinds of care needed.

1970—The department was organized into the following six major functional areas: 1. Bureau of Administrative Services, 2. Bureau of Community Health, 3. Bureau of Health Facilities, 4. Bureau of Maternal and Child Health, 5. Bureau of Environmental Health, 6. Bureau of Laboratories.

1970—The Trailer Park Act involving licensing and regulation was changed to the Mobile Home Park Act and amended to apply only to those parks or subdivisions whose mobile home units provide tenants with a semi-permanent residence. The Campground Act was adopted to provide licensing and regulation of recreational or seasonal campgrounds.

1970—Act 197 of 1970 provided for improved migrant housing.



Department graphic designers create exhibits, periodicals, posters, pamphlets and other media to help inform the people about health problems and programs.

1970—Act 189, P.A. 1969 permitted donations of the whole human anatomy, body parts, tissues and organs for medical education or transplant purposes.

1971—The Bureau of Health Care Administration was created to develop surveillance of the functioning of the Medicaid program.

1971—A reorganization resulted in the establishment of the Bureau of Industrial Health and Air Pollution Control.

1971—Act 89, Public Acts of 1971 expanded the department's responsibility in the field of solid waste management. The new law provided for the licensing of refuse processing plants, transfer facilities, and transporting units.

1972—The department gained national stature in medical environmental epidemiology which deals with various environmental pollutants in terms of their effects on human health. The methyl mercury contamination of fish is an example of the kind of problems encountered by the department.

1972—Two hundred forty-eight Michigan communities had adopted fluoridation.

LEADING CAUSES OF DEATH
MICHIGAN 1971

	Number	Percent
Diseases of Heart	30,095	38.9
Malignant Neoplasma	13,594	17.6
Cerebrovascular	7,826	10.1
Accidents	4,426	5.7
(Motor Vehicle Accidents 2,274)		
Diabetes Mellitus	2,103	2.7
Influenza & Pneumonia	2,058	2.7
Cirrhosis of Liver	1,657	2.1
Arteriosclerosis	1,187	1.5
Emphysema	1,148	1.5
Suicide	1,119	1.4
Homicide	1,091	1.4
All Other Causes	11,091	14.3
Total Deaths	77,395	99.9

1972—Department tests showed that an animal's spinal cord was an adequate substitute for the brain in rabies diagnosis. This discovery was significant since the brain is sometimes damaged or destroyed at the time of death and an accurate diagnosis is difficult or impossible. Using the spinal cord in diagnosis makes it possible to furnish the physician with more conclusive information for determining the necessity of administering the rabies vaccine.

1973—The department had registered nearly 100 percent of the state's x-ray machines as part of its broad program to protect the public from radiation damage.

1973—A series of nine conferences were conducted throughout the state by the department and the Governor's Office of Drug Abuse and Alcoholism to assist labor and management in developing occupational programs for combating alcoholism and drug abuse. The conferences were the first of their kind to be conducted by the state agencies in Michigan.

THE PHYSICAL PLANT

Historical highlights of the Michigan Department of Public Health would not be complete without a brief summary of the physical plant development.

When the State Board of Health was formed in 1873 its offices were located in a small corner room in the basement of the old capitol in Lansing. (Not the present capitol). In 1917, the board moved to the old State Office Building on the north-west corner of Allegan Street and Washington Avenue. This was also the location of the department following its reorganization in 1919.

In 1924, the department moved to the newly completed State Office Building (renamed Lewis Cass Building) which greatly facilitated the work of the department in general and the laboratories in particular.

In 1926, a new plant was erected on land belonging to the Boys' Vocational School Farm and located a few miles north of Lansing on the east side of DeWitt Road. The first buildings housed the Biological Products Division of the Bureau of Laboratories, a stockroom, and a barn. In 1933, this land was transferred to the Michigan Department of Health from the Corrections Commission.

All laboratories located in the State Office Building were moved to the DeWitt Road site in 1937. Further construction in 1939 resulted in the present Administration Building located on the west side of DeWitt Road. An addition to this building was completed in 1957.

Construction of the G. Donald Cummings Cancer Products Development Center was completed in 1968. This $900,000 center is located in the laboratory complex.

The Small Animal Building was completed in 1970. This building, which is also in the laboratory complex, houses disease free colonies of small animals—primarily laboratory mice.

From 1964 to 1973 there have been five double unit and two single unit prefabricated buildings added to the laboratory complex and Administration Building. These units, however, do not fulfill expansion needs.

As a result, three bureaus are housed in rented quarters in downtown Lansing. The Bureau of Maternal and Child Health has been in the Hollister Building since 1966. The Bureau of Health Facilities and Health Care Administration have been in the Commerce Building since 1971.

In 1950 the department occupied 29 buildings on 395 acres on old DeWitt Road. As of 1973, the department occupied 35 buildings on approximately 100 acres at 3500 North Logan Street (formerly old DeWitt Road).

State Health Department offices were in these buildings during the early years of the department's existence. When the department was formed in 1873 (then named the State Board of Health) its offices were in a small corner room in the basement of the Old Capitol in Lansing. The Old Capitol, which was built in 1847 and destroyed by fire in 1882, was located where Knapp's Department Store now stands. It was bounded on the north by Allegan Street, east by Washington Avenue, south by Washtenaw Street, and west by Capitol Avenue.

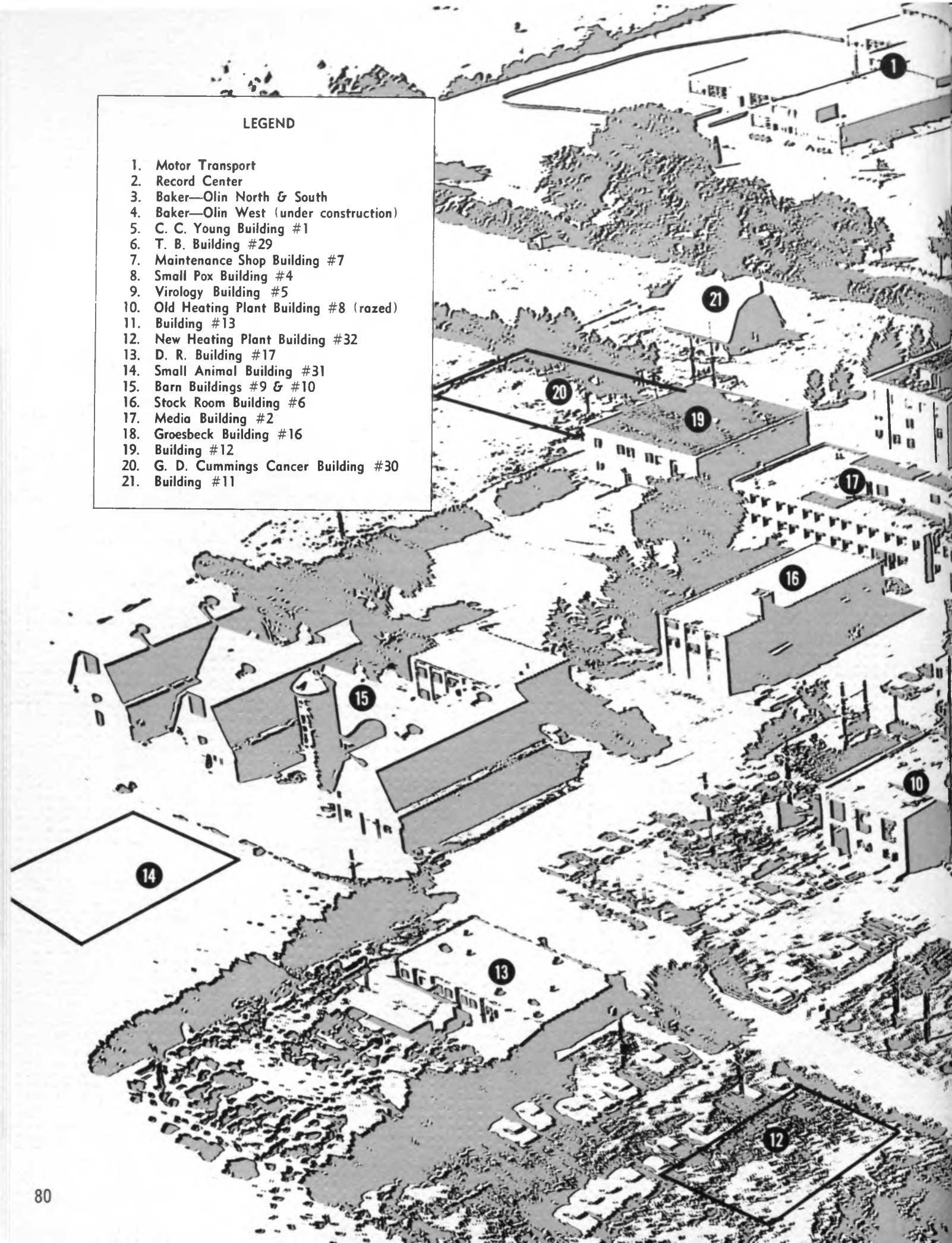
During World War I, Department offices were in two rooms on the first floor and one in the basement of the present Capitol (construction completed in 1877) and in some rooms of the Old Oakland Block located at 125 West Michigan Avenue where the Olds Plaza Hotel presently stands. The laboratory was in the Old State Block on the southwest corner of Allegan Street and Washington Avenue. This building was built in 1871 and torn down in 1923.

In 1917, all Department offices were housed with the laboratory on the third floor of the Old State Block.

In 1922, the Department moved to the New State Office Building (construction completed in 1922). This building was later renamed the Lewis Cass Building.

In 1926, the Biological Products Division of the Bureau of Laboratories was moved to its present site at 3500 North Logan Street, and in 1937 all divisions of the bureau were moved to this site.

Department offices were moved in 1939 to the Administration Building which is located on North Logan Street across from the laboratories.

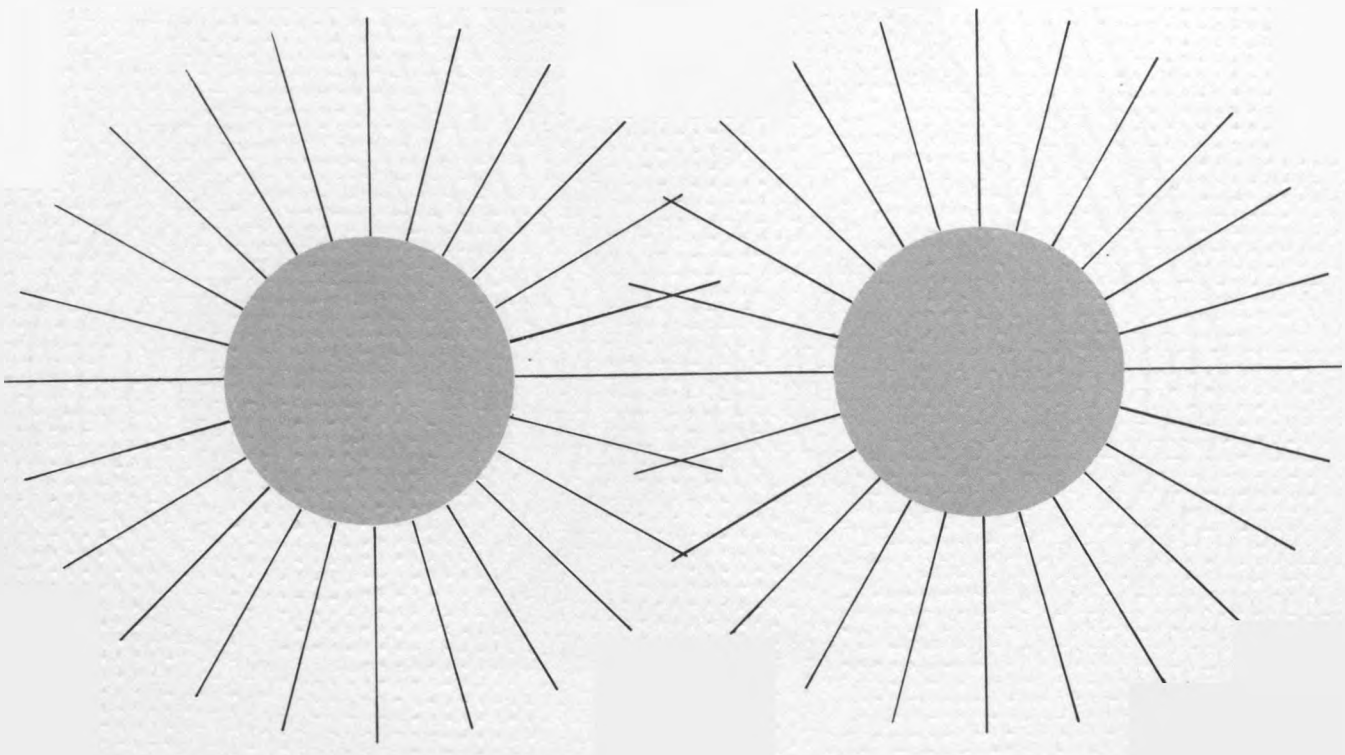

LEGEND
1. Motor Transport
2. Record Center
3. Baker—Olin North & South
4. Baker—Olin West (under construction)
5. C. C. Young Building #1
6. T. B. Building #29
7. Maintenance Shop Building #7
8. Small Pox Building #4
9. Virology Building #5
10. Old Heating Plant Building #8 (razed)
11. Building #13
12. New Heating Plant Building #32
13. D. R. Building #17
14. Small Animal Building #31
15. Barn Buildings #9 & #10
16. Stock Room Building #6
17. Media Building #2
18. Groesbeck Building #16
19. Building #12
20. G. D. Cummings Cancer Building #30
21. Building #11

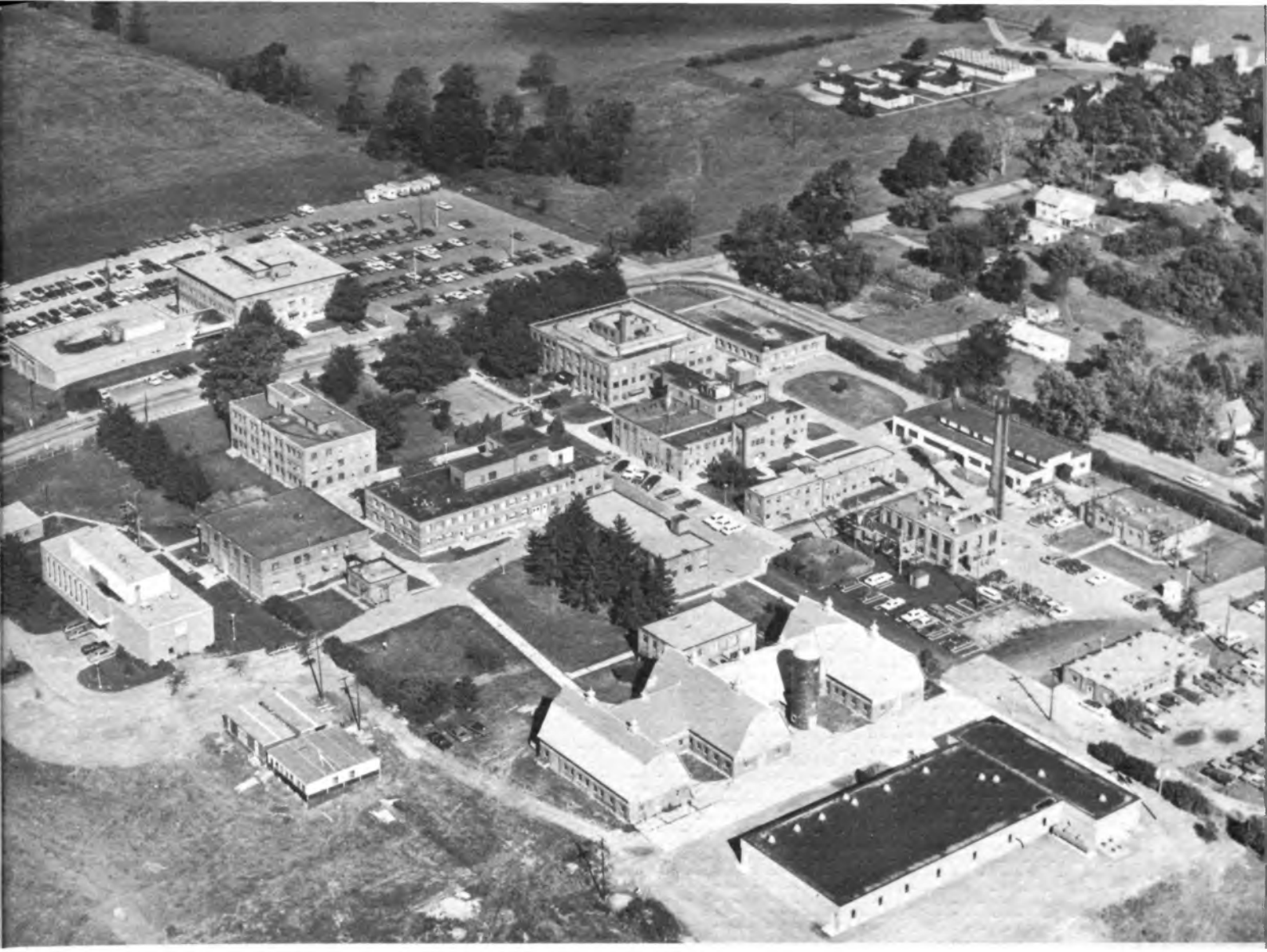

2
4
3
18
5
8
6
9
7
11

A Reflection of the Past Sixty-Six Years

Michigan Department of Public Health

LABORATORIES

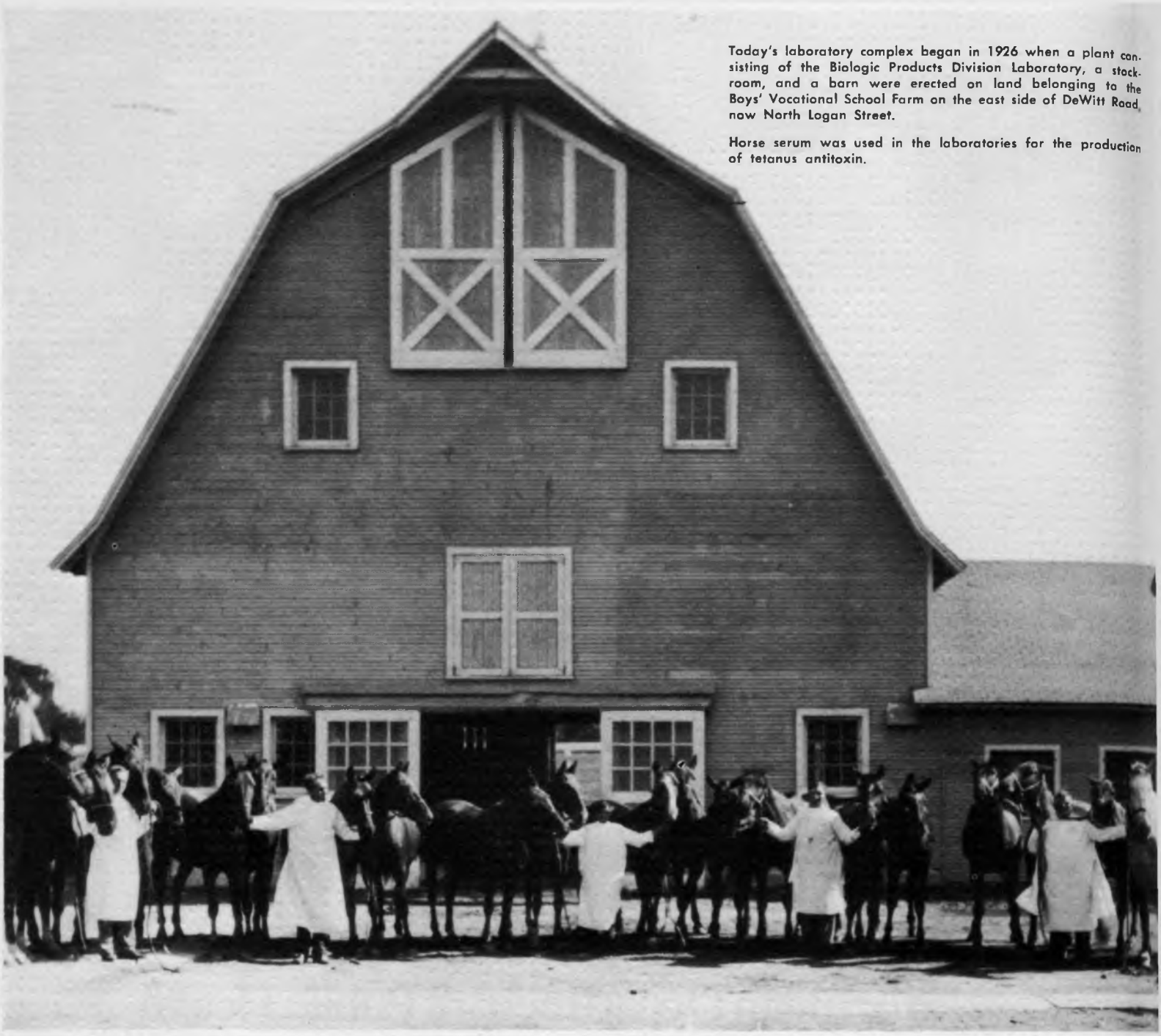




The Bureau of Laboratories
has been an integral part of the
Michigan Department of Public Health
for the past sixty-six years...

Today's laboratory complex began in 1926 when a plant consisting of the Biologic Products Division Laboratory, a stockroom, and a barn were erected on land belonging to the Boys' Vocational School Farm on the east side of DeWitt Road, now North Logan Street.

Horse serum was used in the laboratories for the production of tetanus antitoxin.



1907-1973 BUREAU OF LABORATORIES

It was not until 1907 that any attempt was made to furnish diagnostic aid to physicians in Michigan. The Legislature of 1907 passed Act 109 which provided for the appointment of a bacteriologist by the State Board of Health and for the necessary appliances and apparatus for bacteriological examinations. The law provided for the use of this laboratory by various boards of health, health officers and state institutions which might require examinations or analysis of blood, sputum, urine, water and milk, or other substances in case of outbreaks of contagious disease or epidemics in which bacteriological examination or analysis might be necessary to the public health and welfare. The act also provided for chemical examinations of criminal nature which might be required by prosecuting attorneys. It further established a fee system to be used at the discretion of the board for the maintenance of the laboratory.

The first annual report of the laboratory was made in 1909. The total number of examinations was 1,690 and covered such specimens as water, tumors, temperance beer and grape juice. Potable water, tuberculosis and diphtheria examinations accounted for most of the bacteriology. There were 86 laboratory examinations for venereal disease. The budget for the year totaled $3,665.

Act 164 of the Public Acts of 1915 provided for the establishment of a branch bacteriological laboratory in the Upper Peninsula, at Houghton. The act had many of the provisions of the Act of 1907 for the Lansing laboratory. The Lansing laboratory operated for seven years before the Houghton branch was established, so that the type of work done in the Houghton laboratory was largely patterned after the Lansing laboratory. These two laboratories had no interrelationship whatsoever. They reported separately to the secretary of the State Board of Health and had separate funds for maintenance. Up to 1916 the work covered by these two laboratories was limited to the following: postoperative pathology, toxicology, diphtheria diagnosis, Widal tests, stains for gonococcus, sputum for tubercle bacilli, bacteriological examinations of milk and water, qualitative urine analysis for insurance companies, and an occasional differential blood count. There was a fee system for postoperative pathology and any special work that might be desired by physicians or individuals. The 1916 annual report contained the first mention of the provision of specimen containers by the laboratory for the collection and transport of adequate specimens.

The old Board of Health was a rather loosely knit volunteer service group who appointed a secretary and let him lead the way out of the waterborne typhoid fever—non-pasteurized milk era. With the onset of World War I, viewpoints were altered almost instantly. The Federal Government made demands upon this Board which were difficult for them to meet with the organization they had at their disposal. A new assistant medical secretary was appointed at this time, and the Michigan Board of Health organized and put into operation with the help of Federal funds a venereal disease control program. The Wassermann test which was being used in 1916 on a fee basis had been put on a free basis in 1917 just before the venereal disease program was proposed by the Federal Government. This marked the beginning of the modern public health laboratory movement.

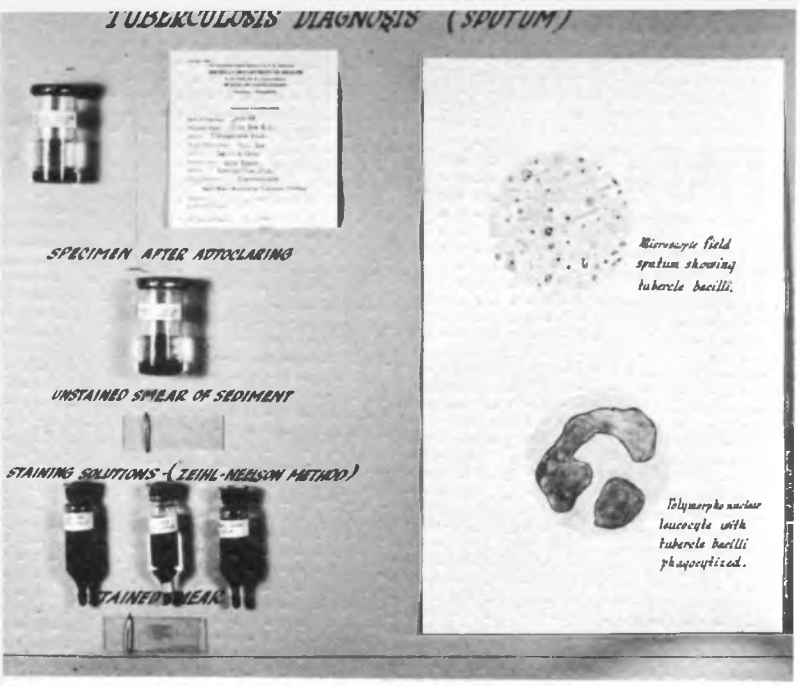
In 1917 the activities of the administrative offices of the State Board of Health, previously located in the State Capitol, were concentrated in the Old State Office Building (at the northwest corner of Allegan and Washington) where the diagnostic laboratories had been located since 1908. During the period 1908 to 1915, M. L. Holm, M.D., was Director of Laboratories and A. A. Spoor, M.D., served as Director from 1915 to 1919.

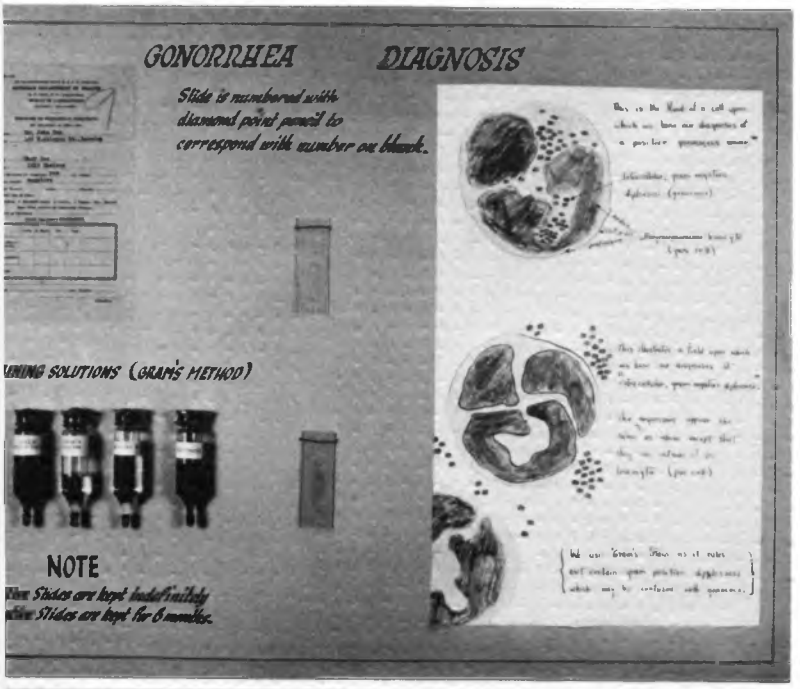
From 1917 to 1919 the department's attention was focused almost entirely upon the venereal disease program. In 1919 it was recognized by the Governor and the Board of Health that the time had come to give the health work of Michigan its proper place in government. A statute was passed creating a State Health Commissioner and an advisory council. The then secretary of the State Board of Health, Dr. R. M. Olin, was appointed the first Commissioner of Health by Governor Sleeper. The Michigan Department of Health was organized by the commissioner under seven bureaus and the Houghton laboratory and the Lansing laboratory were joined as the Bureau of Laboratories.

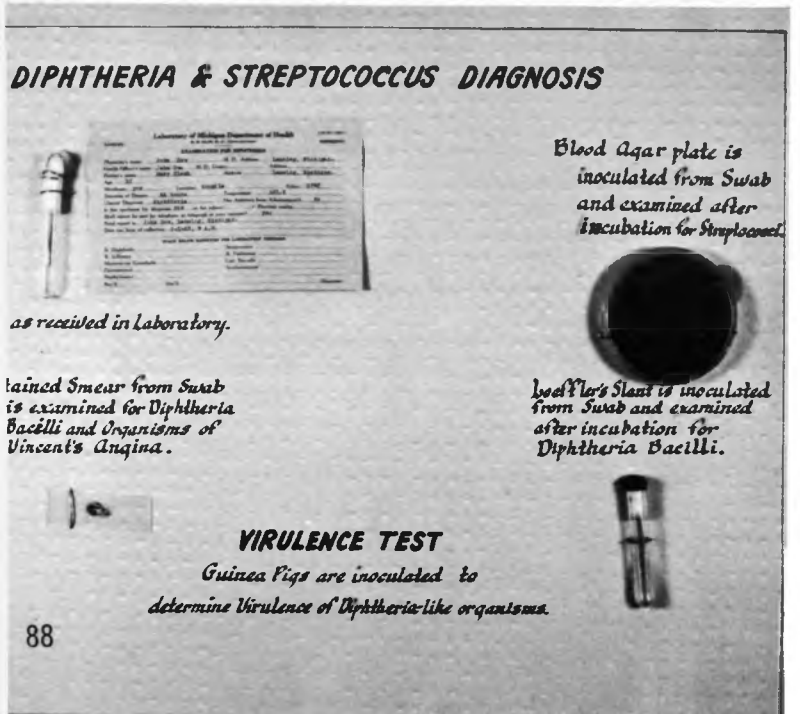
C. C. Young, Dr.P.H., was appointed as Director of Laboratories effective February 22, 1919 upon his discharge from the army. Michigan's state health agency in 1919 offered a setting that was uniquely favorable for Dr. Young's talent for organizing and building. The present Bureau of Laboratories is a permanent tribute to Dr. Young's administrative genius. With his appointment, the services and functions of the Laboratories were completely reorganized and the basic organization pattern was established. Dr. Young made recommendations which were approved by the Commissioner and formed the basis of laboratory policy. These included the elimination of postoperative pathology, the immediate extension of cultural bacteriology, reorganization of the Wassermann test, establishment of controls and checks upon routine microscopy, and discontinuance of most fees. The reasons for these various changes and additions to the service were based upon a belief that the trend of preventive medicine was in the direction of life extension rather than in the study of sources and modes of infection. Laboratories should not only do all the necessary tasks to control quarantine and aid in the diagnosis of infections, but should be prepared and ready to extend their service to a point where they would be an aid to physicians in the routine examination of patients. When the fees system was overhauled, all fees were abolished except a charge for qualitative urine analysis for albumin and sugar and for toxicological examination performed for prosecuting attorneys.

Dr. Reuben L. Kahn was placed in charge of the serum diagnosis of syphilis in 1920 and he, with his associate, Dr. Pearl Kendrick, developed the Kahn precipitation test for syphilis. This test formally replaced the Wassermann test in the Bureau of Laboratories on October 15, 1925 and became widely used throughout the world.

During this period, Dr. Young took a leading part in solving the widely prevalent problem of simple goiter.







Enlargement of the thyroid gland was so common it was known as "Michigan disease." In many schools in the Upper Peninsula of Michigan every girl had simple colloid goiter and this problem varied as one moved south. In every large city in Michigan there was one ward and several physicians who devoted most of their time to goiter operations. Dr. O. P. Kimball of Cleveland had demonstrated that goiter was endemic in Michigan, a deficiency disease, and that the situation could be altered and the amount of goiter reduced. Arrangements were made for a chemist in the laboratories to collect samples of water for analysis for the amount of iodine content. At the same time Dr. Kimball and two physicans from the department were making a school survey. Some schools in the Upper Peninsula had wells with zero iodine content and one hundred per cent of their female students had goiter. In Macomb County the iodine content varied greatly in wells only a few miles apart. Dr. Young with the support of the State Medical Society appointed a group to study the results. They then conducted an experiment introducing iodine into table salt in Michigan. The resulting addition of iodine to table salt in 1924 and the decrease in simple goiter in Michigan are now milestones in the state's public health history.

Training of university students on a credit basis was started in 1925. This course entitled "Instructions in Public Health Laboratory Methods" was attended by students from University of Michigan and Michigan State College. The program was ultimately expanded to include students from six other Michigan colleges and universities. Classes were also held for city hospital nurses in the use of the public health laboratory by hospitals and the laboratory management of communicable diseases.

Michigan had had the highest diphtheria rate in the world for at least the first 20 years of the Twentieth Century. The City of Grand Rapids had the unique position of heading the list in the reports of the U. S. Public Health Service of cities having a high death rate from diphtheria. Therefore, members of the laboratory staff went into the field in the fall of 1920 and worked with physicians to culture throats of thousands of children. It was found that a very high per cent of children carried virulent organisms. By this time, Drs. Schick and Park had fairly well perfected testing for immunity and immunization against diphtheria. The situation was so serious, with the death rate of 26 per 100,000 in 1920, that Governor Alex Groesbeck personally became involved with the problem. He was promised by Dr. Young that the laboratory could lower the death rate one-half if it was provided a specified sum of money (believed to be $75,000) for each year for ten years to purchase antitoxin and toxin-antitoxin mixture for the treatment of cases to save the lives of the sick and to immunize the well. Governor Groesbeck was so impressed with the seriousness of the problem that a bill was drawn and presented to the legislature in 1921 which provided for the manufacture, purchase, and distribution of products for the control of diphtheria and for the manufacture of these products if the purchase price went beyond the cost of manufacture.

The State Administrative Board, upon the recommendation of the Commissioner of Health, decided not to go into the manufacture of the products at once, but to purchase from commercial houses these therapeutic and

prophylactic agents as long as they could be purchased as cheaply as they could be made. The first two years the products could be purchased very cheaply—very near the cost of production as there was a surplus of crude unrefined diphtheria antitoxin at the close of the war. In June, 1925 bids were called for and contract let at 300 percent increase over the former cost. The department therefore, was authorized to proceed at once in the manufacture of these products.

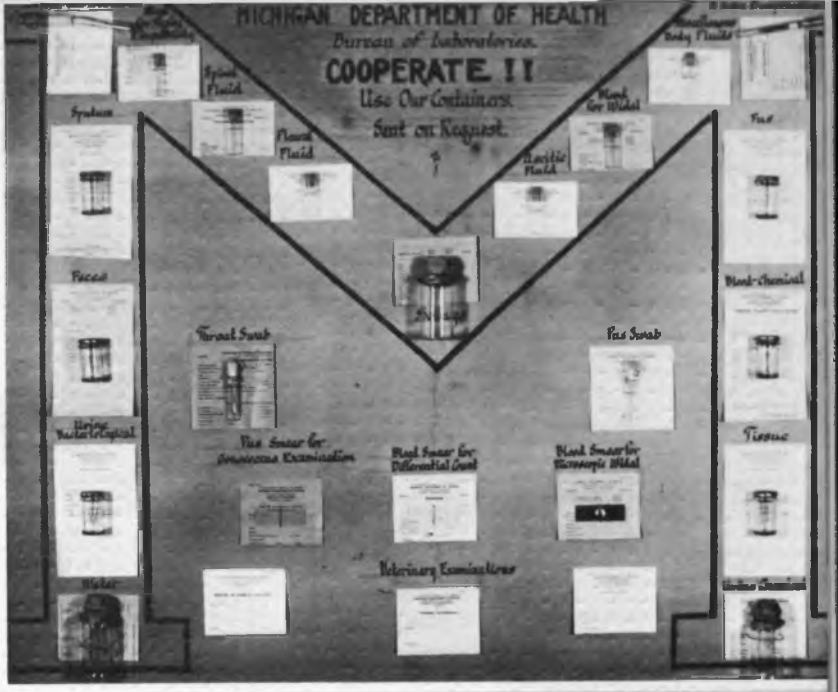
At the direction of the State Administrative Board, a plant consisting of the Biologic Products Division Laboratory, a stockroom and a barn were erected on land belonging to the Boys' Vocational School Farm on the east side of DeWitt Road. The Public Health Service license No. 99 was granted to the laboratories for manufacture of biological products on May 17, 1926. Records of the department showed that the Biologic Products Division was in production and distribution of diphtheria antitoxin, diphtheria toxin-antitoxin mixture, Schick material, typhoid vaccine, silver nitrate ampules and diagnostic sera. The tiny wax ampules which served both as container and dispenser of silver nitrate, required by regulation to prevent blindness of the newborn, were worked out in the Michigan laboratories by Dr. William Bunney. Another early device developed was the flexible aluminum swab machine for the manufacture of throat and nose swabs. In 1927 the law which was passed in 1921 was repealed and the Commissioner of Health was given authority to manufacture or purchase and distribute free *any* biologic products necessary for the control of communicable diseases. Thus, this laboratory program over the years was predicated upon the control of diphtheria.

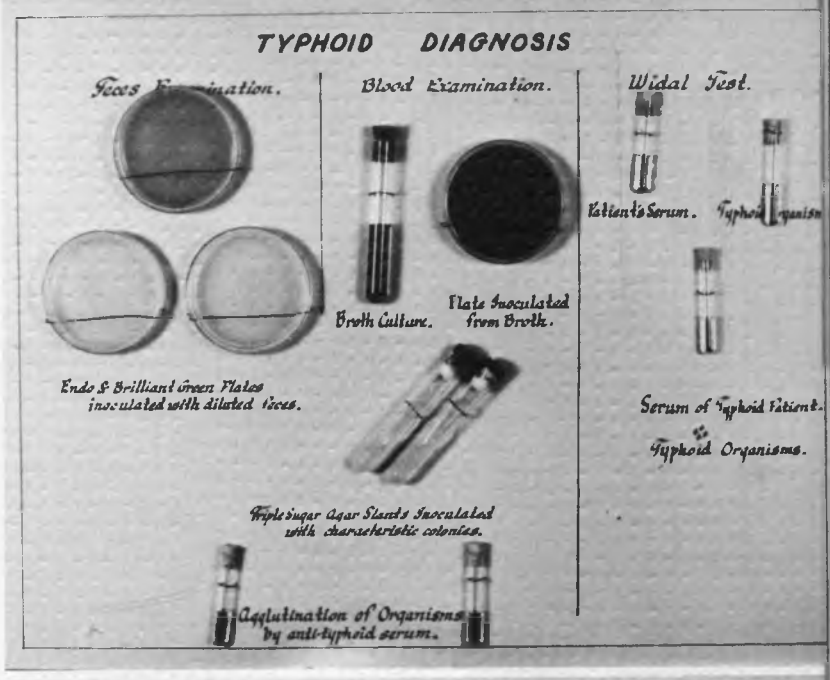
In 1926 a branch laboratory called Division of Western Michigan was established in Grand Rapids. This building was the property of the City of Grand Rapids and was formerly the City Contagious Hospital. It was built in 1905 and condemned as a fire hazard in 1922. It was remodeled in 1926 to serve as the branch laboratory.

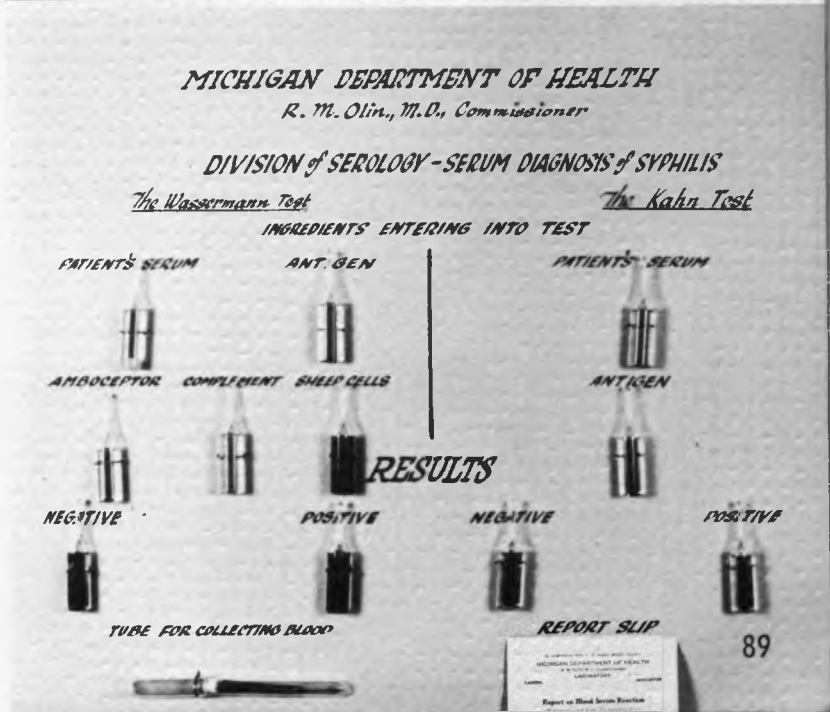
Over a two year period, 1925-27, members of the staff worked in close cooperation with Drs. George and Gladys Dick in the manufacture of scarlet fever toxin for the prevention of scarlet fever. The product was approved by the Scarlet Fever Committee, Inc. and the Hygienic Laboratory and a license was granted for shipment in interstate commerce.

In 1927 the legislature passed an act (308) requiring the registration of all laboratories in the state handling live pathogenic organisms. In 1931, a companion act (45) was passed which provided for the registration and inspection of public laboratories making tests to aid in the diagnosis and control of communicable disease. The latter was the first real step in assuring quality control of certain laboratory tests in Michigan.

Late in 1932, Dr. Pearl Kendrick, Chief, Division of Western Michigan, decided to carry out research on a single disease. She was joined in her efforts in Grand Rapids by Dr. Grace Eldering of the Lansing laboratory who became her assistant chief. The diagnostic project selected for study by Drs. Kendrick and Eldering was whooping cough which was a leading killer of children under five years of age. Vaccine development was started in 1933. After six years of research and field studies, the staff proved that the pertussis vaccine de-







METHODS OF MILK EXAMINATION

PLATE METHOD

Total number of bacteria per c.c. counted

Apparatus for Plate Method

COOLEDGES H-ION METHOD

Demonstrates keeping quality of milk

Good Grade Milk

Poor Grade Milk

SPORE TEST

Demonstrates Manural Pollution of Milk

Clean Milk

Polluted Milk

SEDIMENT TEST

Demonstrates Visible Dirt in Milk

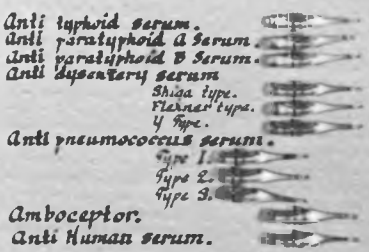
Clean Milk

Dirty Milk

Diagnostic Sera Production

Rabbits are used for Serum Production.

Diagnostic Sera.



veloped by them was effective in preventing whooping cough. In January, 1940 the whooping cough vaccine developed in the Grand Rapids laboratory was placed in general distribution to physicians and health officers. It is interesting to note that during the period 1946-50 the British Medical Research Council performed field trials with various pertussis vaccines to determine the most effective products. The batches of vaccine supplied by the Michigan Department of Public Health were found to give a "considerably greater degree of protection than the others."

Between 1930 and 1937 a number of buildings were added to the DeWitt Road site: the Diagnostic Research Control Laboratory, the guinea pig breeding building, Veterinary Laboratory, bleeding barn, quarantine barn, chemical storage vault and the power house. In 1937 all laboratories remaining in the State Office Building were moved to the DeWitt Road complex and they were followed by the Administrative Offices of the department a few years later. Act 211, Public Acts of 1933 directed the Corrections Commission to transfer "47.5 acres more or less" to the department. In 1935, use of approximately 60 acres of state owned land west of DeWitt Road was approved by the Administrative Board for use as a pasture for horses owned by the department. The building program was done by the State with Federal assistance under the WPA and with funds from other sources.

In October, 1930 the laboratories received a license for smallpox vaccine prepared by a method originally developed here by Dr. Roy W. Pryor and the yield improved by new methods developed by Dr. Clifford Line, and later by Dr. D. H. Ducor. Their work resulted in a method of producing calf-propagated smallpox vaccine of unusually low bacterial count and was generally acclaimed as the best smallpox manufacturing procedure available.

During 1938 there was a smallpox epidemic in the United States during which time about 14,000 people contracted the disease. Reports for that period indicated that there were 274 cases reported in Michigan. This epidemic put the Division of Biologic Products in high gear. Funds provided by the Governor made it possible to produce 750,000 doses of smallpox vaccine within 90 days.

In the late 30's, the laboratories did much of the original work leading to the development and use of diluted tuberculin under the expertise of Dr. Russell Y. Gottshall.

To bring diagnostic laboratory services closer to physicians in the eastern part of the Upper Peninsula the Powers Branch Laboratory was opened in 1939 in facilities belonging to the Pinecrest Sanatorium.

A Division of Virology was established August 1, 1939. This new service was made possible by a grant from the National Foundation for Infantile Paralysis, Inc. A special grant from the United States Public Health Service to aid in providing necessary laboratory facilities was also made to the Bureau of Laboratories. The division, largely supported by annual grants-in-aid from the National Foundation for Infantile Paralysis Inc., first undertook a long range investigation of the effect of a large variety of chemical compounds on experimental virus infections, particularly that of poliomyelitis. Studies were also funded to develop adequate preventive agents.

The rising demand for serums and vaccines and the corresponding increase in the number of animals used

for tests and in the production of immunizing agents necessitated the acquisition of more land for pasturage and the raising of feed. In 1940, an additional 400 acres west of DeWitt Road were transferred to the department by the State Board of Auditors. Of this piece of land, 80 acres were used jointly by the department and the State Board of Aeronautics. Alfalfa planted between runways provided good emergency landing areas and also supplied fodder.

In September, 1940 the laboratory was notified by the War Department that it had been certified as a primary defense industry. Contributions to the defense effort prior to and after Pearl Harbor placed a heavy work load on the laboratories. Beginning in November, 1940, the laboratories in Lansing and Grand Rapids carried out a large number of serology tests for Selective Service. By a double-shift arrangement of personnel, overnight service was given draft boards. The 1941 legislature gave a special appropriation to cover the cost of additional supplies required for this service and the Emergency War Board also appropriated funds. These appropriations were established on a "per test" basis. Funds were also granted by the Emergency War Board to cover emergency demands for biologic products in the control of tetanus, whooping cough and diphtheria. Production was also begun on four new products required by the war emergency—gas gangrene antitoxin, combined whooping cough-diphtheria toxoid, combined tetanus-diphtheria toxoid, and fluid tetanus toxoid.

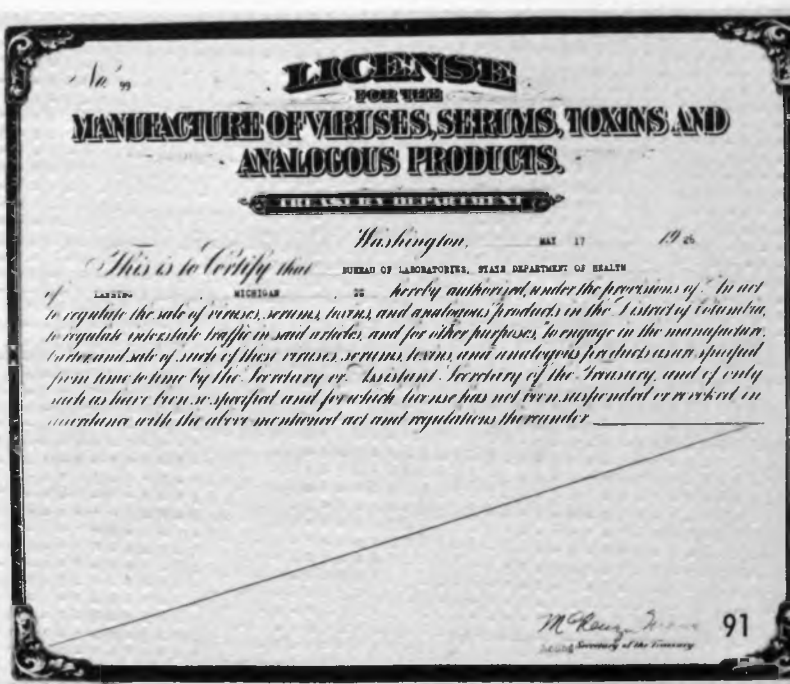
In 1941 the Groesbeck Serum and Vaccine Laboratory was started as a WPA project but it had been only partially completed when WPA was abolished in 1942. Early in 1943 the building was completed with the assistance of the United States Medical Corps. The Corps leased two floors of the completed structure for the purpose of maintaining a subsidiary laboratory for the manufacture of typhoid vaccine and intravenous glucose for distribution to the Armed Forces. During the Corps tenure it added a second story to the Veterinary Laboratory and built the south animal house.

In 1941 the laboratories established the first cooperative laboratory training school of its type in the United States. The purpose was to train laboratory technicians for public health and hospital laboratories in Michigan. The program was cooperative in that it was shared by the department, a large group of Michigan pathologists in a number of hospitals, and by four Michigan colleges. The Council on Education of the American Medical Association accredited this formal twelve months' course. The laboratories carried out training in bacteriology, serology and the sanitary sciences. The hospital laboratories trained the students in urinalysis, blood counts and other clinical laboratory procedures. The Kellogg Foundation offered a limited number of fellowships to students registered in the Laboratory Training School. No charge was made by the bureau to individuals registered in the school. Students accepted were either college graduates with specific training in biology, chemistry and bacteriology, or college students from schools affiliated with the training school. Senior students received college credit for the work in the training school and were granted a bachelor's degree upon completion of the year of training.

Also during 1941 Michigan became the first state to establish a crime detection laboratory in a state health

Sheep were bled for culture media in the Animal Test Lab.

Laboratory personnel open and record specimen containers sent to the laboratories for diagnostic testing.



No. 99

LICENSE
FOR THE
MANUFACTURE OF VIRUSES, SERUMS, TOXINS AND ANALOGOUS PRODUCTS.

TREASURY DEPARTMENT

Washington, MAY 17 1926

This is to Certify that BUREAU OF LABORATORIES, STATE DEPARTMENT OF HEALTH of LANSING, MICHIGAN, is hereby authorized, under the provisions of "An act to regulate the sale of viruses, serums, toxins, and analogous products in the District of Columbia, to regulate interstate traffic in said articles, and for other purposes," to engage in the manufacture, barter and sale of such of these viruses, serums, toxins, and analogous products as are specified from time to time by the Secretary or Assistant Secretary of the Treasury, and of only such as have been so specified and for which license has not been suspended or revoked in accordance with the above mentioned act and regulations thereunder

Acting Secretary of the Treasury

Public Health Service License, No. 99, was granted to the Laboratories for manufacture of biologic products on May 17, 1926.

department. It was unique in that it was the first to perform the dual function of toxicological laboratory work for the health department and criminological laboratory work for the State Police and other legal authorities. Clarence W. Muehlberger, Ph.D. was employed to direct this new laboratory. He had been the chief toxicologist for Cook County, Illinois and the chemist and toxicologist for the Northwestern Crime Laboratory established at Northwestern University in response to the need demonstrated by the St. Valentine's Day massacre. As a result of Dr. Muehlberger's knowledge of chemical warfare methods, much of the time and effort of the crime detection laboratory was devoted during the early years of its existence to problems in Michigan related to the war effort.

In 1941 the Emergency War Board appropriated funds for the establishment of police protection for the laboratories. It also granted $9,475 to provide personnel, supplies and equipment for the establishment of a statewide plasma collection and processing program. These funds together with $2,500 of laboratories' funds were used to establish the blood plasma processing program. The laboratories provided blood collection equipment to various local areas in Michigan for the collection of human blood to be used for plasma preparation. The plasma was processed by the laboratories and returned to the area from which the blood was collected. The program, as organized, was to determine the feasibility of a plasma collection and distribution program. Drs. J. T. Tripp and H. D. Anderson were involved in the first preparations of normal human plasma at MDPH in May, 1942, a product made initially to treat the daughter of a staff person who was seriously ill with a kidney infection. The first distribution of plasma was begun on a very limited basis in November, 1943.

The first cotton rat colony in the United States was successfully established in the Michigan Department of Public Health in 1942. This colony was established with funds provided by the National Foundation for Infantile Paralysis, Inc. for the purpose of providing an adequate supply of infection-free cotton rats. These animals were employed in studies of infantile paralysis. It is interesting to note that in order to establish the colony, it was necessary to trap the original animals in Georgia and Florida. These animals were ultimately provided to grantees of the foundation throughout the United States.

The Bureau of Laboratories established the first biophysics area for the biophysical study of serums, vaccines, viruses and antitoxins in the country. The biophysical approach to problems in this field was distinctly new since it applied the use of physical tools to the problems of biology.

A diarrhea and enteritis study group was formed July 1, 1943 for the purpose of investigating the cause or causes of epidemic diarrhea of the newborn, a disease causing a large number of deaths annually among newborn babies in Michigan and in the United States. The study was financed jointly by a grant from the W. K. Kellogg Foundation for scientific personnel and by a legislative appropriation for materials. This program was formed under the leadership of G. D. Cummings, M.D. with the following objectives: 1) to determine the cause or causes of infant diarrhea in hospital nurseries and 2) to establish methods of prevention of infant

Dr. Reuben L. Kahn (above), who was in charge of the department's Serological Division in Lansing, and his associate, Dr. Pearl Kendrick (below), developed the Kahn Precipitation Test to diagnose syphilis.

diarrhea in hospital nurseries.

In 1944, Dr. J. T. Tripp, then Chief of the Division of Biologic Products and a major in the Army Medical Corps, was placed on loan to the Chinese government until January, 1946 with the approval of state government for the purpose of establishing standards for the manufacture of biologic products Dr. Tripp took with him actual standards of various products, cultures, test reagents, and recordings of lectures giving complete details of the production and application of each of the products. Because much of the equipment would not be available in parts of China, he also carried such things as a kerosene heated chicken incubator, a gasoline operated generator and two small pressure cookers that could be used on a kerosene stove for sterilizing glassware.

Dr. Young died of cancer June 5, 1944 after serving as Director of Laboratories for 25 years. He was succeeded by G. D. Cummings, M.D., Ph.D., whom he had long before selected as his successor . . . "so that the policies of this institution will go forward." The central diagnostic laboratory was named the "C. C. Young Laboratory" by a joint resolution of the State Legislature.

In July, 1944 funds were provided by the State Legislature for the inauguration of a Blood Plasma Program upon the personal request of Governor Harry Kelly. These funds permitted the establishment of the necessary capital structure, the purchase of all necessary plasma equipment and resources to obtain and train personnel. By 1946, 75 counties in Michigan were covered and the program made possible the distribution of free blood plasma in these counties for use in patients suffering from shock. The program was the first of its kind in the United States.

In 1946 preparation of gamma globulin and normal serum albumin was started and new products, resuspended red blood cells and AHG, were produced and distributed on a limited basis in 1947-48.

The procedure for extracting blood fractions from placentas was perfected by laboratory scientists in 1954. It was the world's first practical method for recovering serum albumin from placental blood. Initial credit was given to Dr. Frank Gordon, *et al*, in 1953. The work was carried out under the immediate direction and leadership of Dr. K. B. McCall. Dr. H. L. Taylor, *et al*, made changes in extraction procedures, resulting in increased yield and purity in 1954 and 1955. By 1958, the production and distribution of plasma was discontinued in favor of serum albumin. Fibrinogen was distributed on an experimental basis in 1952 and licensed in 1954. This meant that the blood fractions prepared by the laboratories, in addition to whole blood made available by Red Cross Regional Blood Centers, gave Michigan the most complete coverage of life-saving blood products in the country. Funds were appropriated by the 1957 Legislature to permit enlargement and automation of the blood fractionation laboratory. The remodeled plant was completed in April, 1959 and began operation 24 hours per day, 5 days per week.

During 1965, five experimental lots of tetanus immune globulin of human origin were prepared by the Bureau of Laboratories. A license application for the preparation and distribution of tetanus immune globulin was submitted to the National Institutes of Health. Experimental lots of rabies immune globulin and diphtheria immune globulin were also prepared. Eight experimental lots of Antihemophilic Globulin (Human), processed by the Blomback method, were prepared under contract to the American National Red Cross. Six experimental lots of bovine antihemophilic globulin were also prepared. The bovine material was used to study modifications in the Blomback procedure and for developing techniques for the isolation and identification of the specific antihemophilic factor.

The post-war reorganization of the Bureau of Laboratories implemented during 1945-46 was essentially completed during 1948-49. The essential aims of the plan were: the elimination of inefficient personnel accumulated during World War II, recruitment of competent personnel following the end of World War II, review of the classification of all positions on the staff, adjustment of the operating budget to meet the anticipated post-war work load, completion of a planned capital outlay program, and reorganization of the major functional work divisions and sections. The stockroom was remodeled and fireproofed; the first unit of the maintenance shop was completed and the parking area in front of the C. C. Young Laboratory was revamped.

The year 1948-49 marked the completion of the new media, glassware and supplies building. This new building provided much needed space to accommodate the service functions of the laboratories and the crime detection and biophysics laboratory. Because of appropriation action during the special session of the legislature, work was resumed on the construction of the tuberculosis laboratory which had stopped in 1947 for lack of funds. Also, the legislature appropriated funds for plans and specifications for the proposed construction of a new Western Michigan Section Laboratory in Grand Rapids, and in 1951 it appropriated funds for the construction of the building. The City of Grand Rapids offered to the State of Michigan land on which the state proposed to erect the laboratory in exchange for laboratory services to be rendered the city. As the state did not have statutory authority to accept the property on which to erect and operate this laboratory, it was necessary to obtain legislative action authorizing the transfer of the land from the city to the state in 1952.

In 1946, 1947, and 1949, Dr. Serge Lensen, *et. al.*, reported on their work on the inactivation of partially purified poliomyelitis virus in water by chlorination. Distilled and natural waters were used. The findings were that the virus was inactivated in the presence of residual-free chloride in a relatively short period in samples having certain pH ranges.

During 1949-50 there were a number of nursery outbreaks of infant diarrhea in Michigan hospitals and William W. Ferguson, Ph.D. began carrying out bacteriologic studies of possible etiology. Either *E. coli* 111:B4 or 55:B5 was discovered as the cause of the illness in acutely ill babies. This was the first time that enteropathogenic *E. coli* had been reported in the United States. As time went on, it became apparent that other enteropathogenic *E. coli* than just two types were involved in infant diarrhea. In 1950 Drs. Ferguson and R. June conducted large scale feeding experiments in men in Southern Michigan Prison using three strains of 111:B4 organisms and a "normal" *E. coli*. This study showed that healthy male adults were resistant to intestinal infections with 111:B4 organisms unless they ingested a large dose. Normal *E. coli* produced no untoward symp-

Charles (Pop) Bliss worked in chemistry and toxicology from 1918 to 1932.

Dr. Clifford Line (seated), worked on a new method of producing an improved smallpox vaccine.

toms whatsoever. The following year similar experiments were made with *E. coli* 55:B5 in the same institutions. Results of both studies were published and added to the growing evidence that enteropathogenic *E. coli*, such as types 111:B4 and 55:B5, are pathogens not normal inhabitants of the human intestines.

For years, tracing of typhoid carriers has been aided by a laboratory tool called bacteriophage typing in which bacterial viruses are used as typing agents. Explanation of the typing mechanism has never been completely explained. However, an explanation for the existence of a considerable number of typhoid types and the phages that distinguish them has been made. This was done by Drs. Felix and Anderson in England and Dr. William Ferguson and co-workers of this laboratory who in 1948, discovered that temperate or non-virulent phage infecting typhoid organisms controlled the typing phenomenon by exclusive or permissive behavior. This was a fundamental discovery and these studies led to a broadened interest in medical virology.

The virology program was markedly accelerated and broadened in 1959 to meet the needs of Michigan physicians for this service. In December, 1966 the virology laboratory identified a virus isolate as a vaccinia virus. This was confirmed by the Center for Disease Control. CDC said this was the first recovery to its knowledge of vaccinia virus from brain tissue. In October, 1966 this laboratory isolated a Coxsackie virus from a pustule. A search of the literature revealed only one report of isolation from a similar source.

In 1947, the State Legislature passed the Humane Use of Animals Act No. 241 which had been bitterly opposed by the antivivisectionists. This act provided inspection and registration of laboratory animal facilities and reads:

> "An act to protect the public health and welfare; and to regulate the humane use of animals for the diagnosis and treatment of human and animal diseases, the advancement of veterinary, dental, medical and biological sciences, and the testing and diagnosis, improvement and standardization of laboratory specimens, biologic products, pharmaceuticals and drugs."

Thus, Michigan became the first state to pass legislation controlling the use of laboratory animals by giving the State Director of Health the authority to regulate the humane use of animals. The law also established an advisory committee appointed by the Governor and consisted of representatives not only of medicine and science, but also of the state federated humane society.

The method of preparing silver nitrate ampules which had been followed by this laboratory since the early 1930's was modified. A special wax was adopted which could be used for the manufacture of ampules without paraffin liner and was inert to silver nitrate solution.

Mr. William Gebhard, *et al*, in collaboration with the National Institutes of Health, prepared a stable dried smallpox vaccine in 1952. This dried vaccine was needed by World Health Organization for its program in South America to eliminate smallpox.

The quadruple antigen program was started by a state appropriation in 1960 to the laboratories to assist in the fulfillment of legislative requirements for the immunization of children against smallpox, diphtheria, tetanus, pertussis and poliomyelitis. The successful production of

Dr. Grace Eldering (left) and Dr. Pearl Kendrick worked in the Division of Western Michigan to develop a vaccine for the prevention of whooping cough that was first distributed in 1940.

a quadruple antigen represented a real accomplishment by the laboratories' staff: Drs. G. R. Anderson, R. Y. Gottshall, Miss Frances Angela, and Mr. Everett Nelson, since all other U. S. manufacturers discontinued production of a 4-way vaccine due to instability of the pertussis component.

During 1961, a synthetic medium was developed for the production of tetanus toxin. This medium supported excellent growth of *Clostridium tetani.*

The problem of synthetic detergents gaining access to water bearing formations was recognized as becoming increasingly serious in 1960. Therefore, the department was contacted by the Federal Housing Administration to aid in the development of a portable method for determining the presence of detergents in drinking water. This method was developed by Mr. O. E. McGuire and a simple field kit was prepared by the laboratories. It was then tested in the field by the Division of Engineering of the department and made available to local sanitarians.

A laboratory was constructed in 1945 for investigations in the antibiotic field and the antibiotic and fermentation program came into existence in January, 1946. The purpose of the program was to discover and develop new antibiotic substances against three diseases: tuberculosis, whooping cough and Salmonella infections and later the program was broadened to include penicillin-resistant staphylococci.

One new antibiotic, Synnematin B, isolated by Drs. R. Y. Gottshall, J. Roberts, and L. Portwood in 1948 and developed by Dr. B. H. Olson, was successfully subjected to the complete screening process and to human trial. This antibiotic was shown to be effective against a number of Salmonellas including the typhoid bacillus. The original clinical trials were carried out in the Hospital Infantil, Mexico City, Mexico in 1954 by Drs. Cummings and Olson in cooperation with the medical staff of the hospital on 16 cases of typhoid and the preliminary findings were excellent. Continuing studies in 1955 showed Synnematin B to be superior to aureomycin, terramycin, achromycin and chloromycetin for the treatment of typhoid and were confirmed by successful use of the product in Children's and Harper Hospitals, Detroit, and St. Lawrence Hospital, Lansing. Additional studies in Mexico showed that the product was effective against the causative agent of Mal de los Pintos (pinta). Accordingly, Synnematin was provided University of Michigan, Ann Arbor and the Social Hygiene Clinic, Detroit for studies against venereal diseases. Dr. Benjamin Schwimmer, Director of the Clinic, concluded that "Synnematin B is an injectable antibiotic which appears to have great promise in the treatment of gonorrhea" and it did not show allergenic properties even in patients sensitive to penicillin. The product was patented November 3, 1953 and rights were assigned to the state. As the production and purification techniques made Synnematin B costly there was a lack of commercial activity. This product was the first one patented by the Michigan Department of Public Health and, as a result, the State Legislature passed legislation in 1954 to empower the State Administrative Board to contract relative to the state's property rights in inventions, discoveries and letters patent thereon, and to provide for the disposition of moneys received therefrom.

In 1956 the direction of the program was toward the

Dr. Russell Y. Gottshall directed much of the original work leading to development and use of diluted tuberculin in the late 30's.

In 1970, Dr. Maurice Becker, Chief of the Division of Virology, and Mr. George Halliburton demonstrated the efficiency of HEPES buffer in micro-tissue culture plates for routine enterovirus diagnosis.

William W. Ferguson, Ph.D., was the first to isolate an enteropathogenic E. coli microorganism in the United States.

Smith Fermentation Tubes (top - right) were used in testing procedures to assure that biologic products were bacteriologically sterile. ►

development of anticancer agents. Alpha Sarcin, patented by Dr. B. H. Olson and assigned to the state, received clinical trials by the U. S. Public Health Service in Texas, Louisiana, Arkansas and Oklahoma and while it seemed effective in some patients, there were some problems of toxicity. Restrictocin, patented September 17, 1963 by Dr. Olson, Alton Junek, C. L. Harvey, and Jay Jennings was also assigned to the state. Human clinical trials were conducted in a western group of hospitals but were suspended due to toxicity. Mitogillin (originally called Regulin) was patented in 1966 by Drs. Olson and Gordon Goerner and assigned to the state.

It became apparent that the facilities available for the anticancer program did not allow sufficient production capacity for existing promising anticancer agents and for the development of new products. Therefore, a request was made of the State Legislature for funds for a new facility and funds were appropriated in 1965 and 1966 for the facilities.

Effective August, 1966, Dr. Cummings appointed Dr. Kenneth R. Wilcox, Jr., as Deputy Director of the Bureau of Laboratories. This was the first time in the history of the Laboratories that an individual was so designated and it was made eminently clear who Dr. Cummings was selecting to be his successor. Dr. Cummings died of acute heart failure July 27, 1967 after serving as Director of Laboratories for 23 years and a member of the staff for 41 years. The 1967 State Legislature passed a Joint Resolution to name the newly constructed cancer products facility the G. Donald Cummings Cancer Products Development Center.

Dr. Cummings was succeeded by Dr. Wilcox who joined the staff in 1962 (Appendix C). Dr. Wilcox has stated that the primary objective of the Bureau of Laboratories has always been to provide services to the people of Michigan through physicians and health officers. He often quotes Dr. Young's January, 1924 statement as the guiding principle for the Laboratories:

> "The criterion for adopting any procedure is maximum service at the least cost; the policy: accuracy and dependability of results at any cost."

Dr. Wilcox added that other traditional services such as research and training have been secondary to and determined by the need for services to the people. As a result, the many research developments, innovations, and improvements that have come from the laboratory have been directly related to improving health in Michigan.

A major development in 1967 was the preparation by the Michigan Department of Public Health of a bill for the licensing of clinical laboratories and their directors. Dr. Wilcox had the responsibility of working out a compromise bill embodying ideas of clinical pathologists, representatives of various laboratory societies, the State Medical Society, and the department. This was no easy task. Hearings were held on the bill during the 1967 legislative session and many conferences were held to iron out disagreements on the bill content. Therefore, final legislative action was withheld until 1968 when it became Act 235. This Act repealed Act 45, P.A. 1931. The great virtue of this licensing law is the fact that it permitted regulation of the activities of public laboratories. The rules implementing this Act were promulgated February 16, 1970. The implementation of this program was carried out in the newly established Division of Laboratory Improvement under the leadership of Dr. Marian Motcheck. This licensing and inspection program should have a highly beneficial effect on the quality of laboratory diagnostic services in Michigan and it is another milestone in efforts to upgrade public health services. Every laboratory is inspected before licenses are issued and biennially thereafter, and laboratory directors must be eligible for and receive certificates of qualifications. An on-going proficiency testing program was established to evaluate the quality of performance of laboratories. Approximately 410 laboratories are now licensed.

The Food and Drug Administration assigned Investigational New Drug No. 4783 to the anticancer agent, Mitogillin, on April 29, 1968. Action was taken in June, 1968 to establish Phase I human clinical trials at Wayne County General Hospital, Henry Ford Hospital, and Grace Central Hospital of Detroit. These trials have been in Phase I since that time. There has been evidence of certain tumor responses although the Phase I study is designed for dosage determinations rather than tumor response.

The first supply of Mitogillin was supplied to members of the staff of Michigan State University's Veterinary Clinic in 1969 and the first supply of Mitosper was provided in 1972. The MSU staff have continued their work with both products enthusiastically and have received good results in their work on the treatment of dogs with cancer, particularly with the anticancer agent Mitosper. The MDPH Laboratories' staff had made major studies in determining the effectiveness of Mitosper on canine cancer and the MSU work has served to confirm the findings of this laboratory.

The small animal building for which planning funds were granted in 1964 was completed in 1970 and a new disease-free colony of animals was established. A heating plant and utility distribution system survey was appropriated for in 1968 as the plant built in 1937 was antiquated and unable to meet the needs of the enlarged department. The plant was completed during 1972.

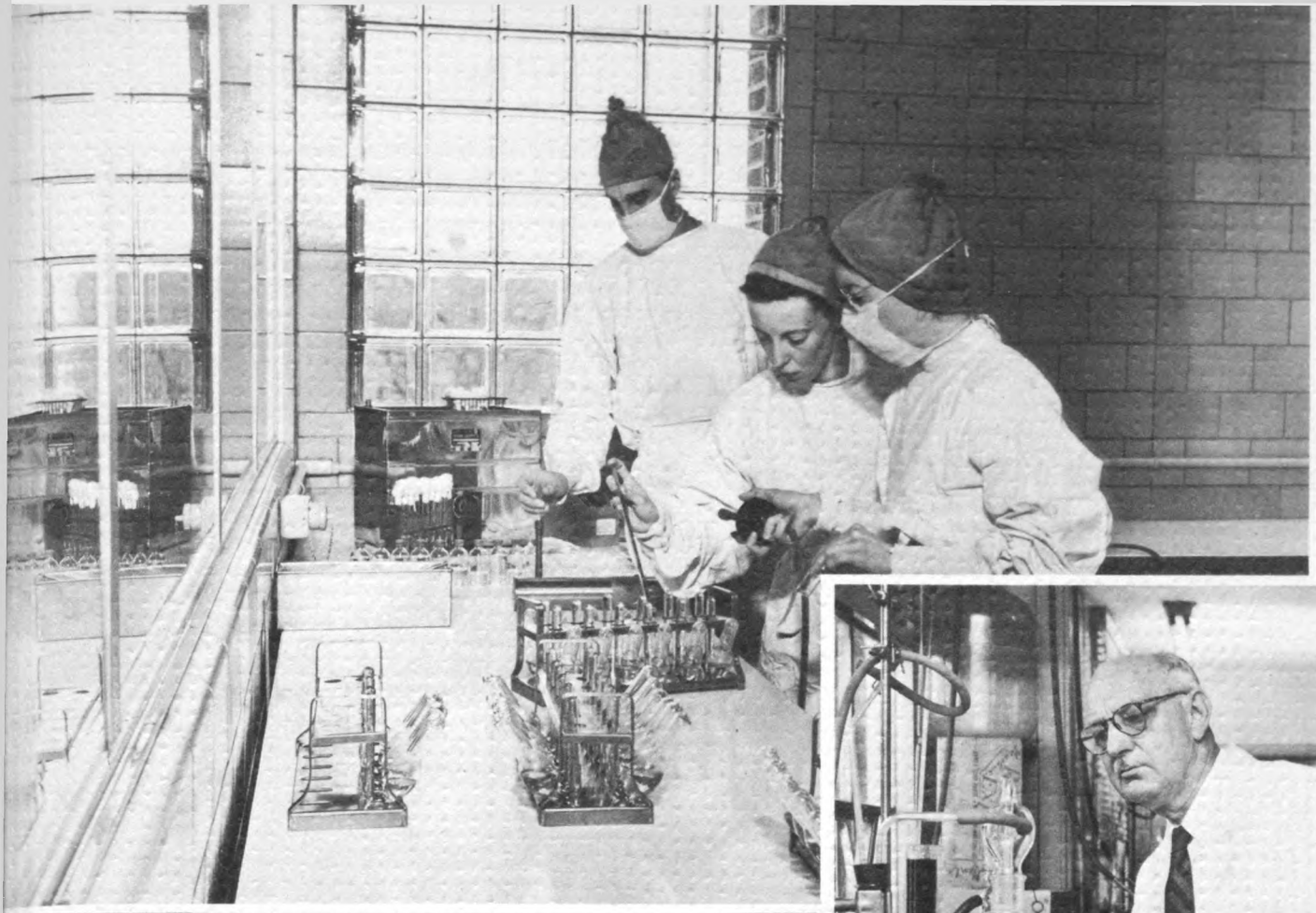
During 1970, Mr. George Halliburton and Dr. Maurice Becker (Chief, Division of Virology) demonstrated the efficiency of HEPES buffer in micro-tissue culture plates for routine enterovirus diagnosis. Their publication regarding the work received a monetary award from the American Public Health Association.

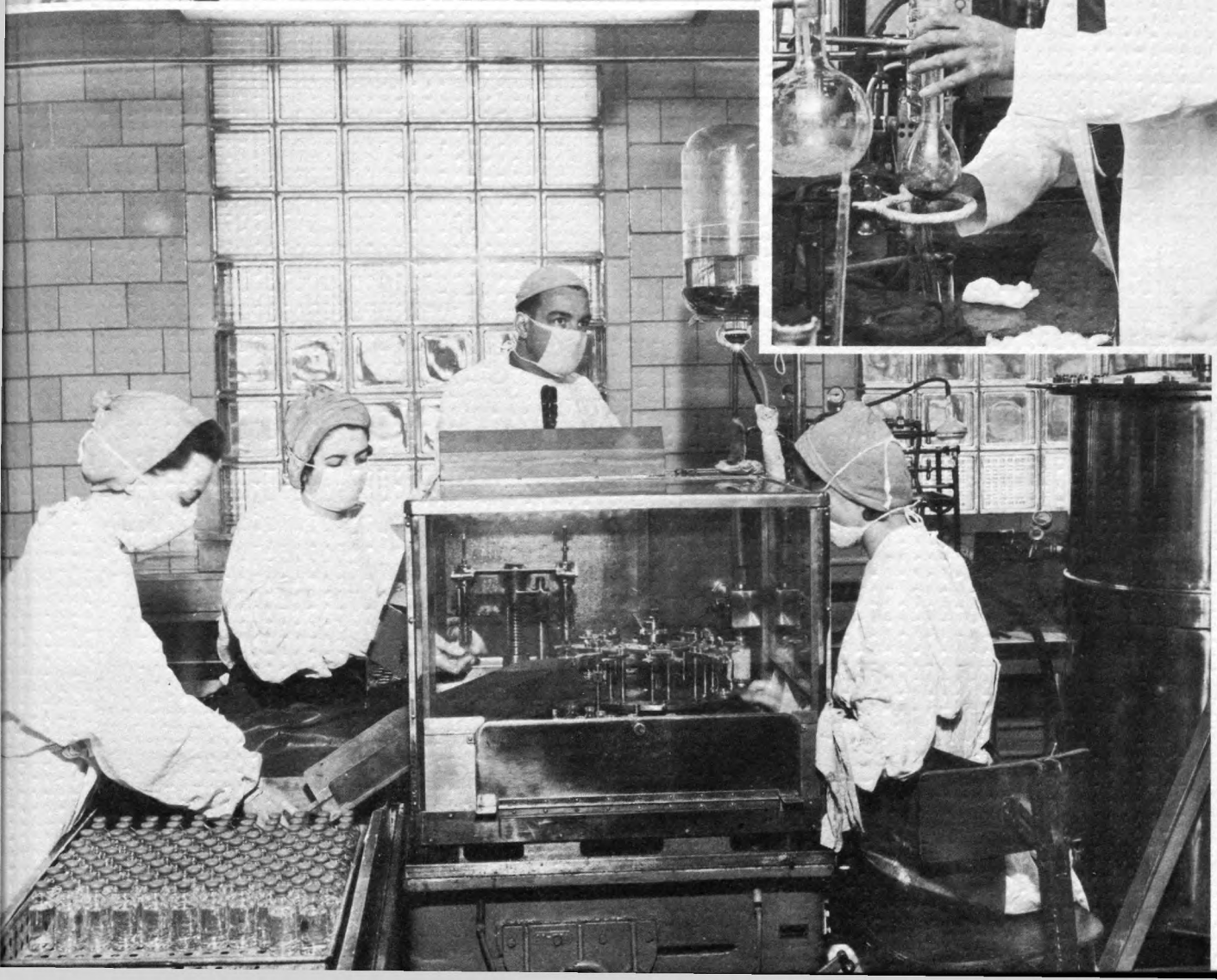
Regionalization of crime laboratory services in Michigan was approved for 1970-71 beginning with the establishment of State Police and Public Health crime detection laboratories in Warren to serve southeastern Michigan. This network of crime detection laboratories is supported on a matching basis by Federal and State funds. The Warren laboratory became operational in November, 1971; the Holland laboratory in July, 1972; the Bridgeport laboratory is scheduled for completion in April, 1974 and the Marquette laboratory in 1975.

Dr. John Mercer and Dr. Lee Hyndman made considerable progress in an earlier project (1967-69) directed toward the recovery of antihemophilic factor activity from cattle. This work was prompted in part by the fact that a bovine origin product available in England had been extremely valuable in certain life-threatening bleeding episodes in hemophiliacs, but was unavailable in this country due to necessary restrictions on importation of animal blood and its products. Considerable progress was made by using polyethylene glycol as a

Personnel of the Division of Biologic Products (bottom - right), performed special services for the Army by filling and packaging typhoid vaccine and glucose in 1942. ►

Clarence W. Muehlberger, Ph.D., (inset) was the first director of the crime detection laboratory established in 1941.





reagent and significant recoveries of AHF were obtained with the procedure. The results of this work laid the groundwork for this laboratory to obtain a National Heart and Lung Institute contract for the preparation of bovine Factor VIII for clinical trial in man in 1973. The new contract involves large scale plasmapheresis of disease-free cattle and a commitment to prepare a final product for evaluation in selected medical centers throughout the United States.

There has been a dire need to fully coordinate blood banking and blood program activities in the state. In order to provide new momentum and direction in this area, a blood program coordinator was established in the department in 1972 and Dr. J. T. Sgouris was appointed to this position. As a significant step toward implementation of its objectives, the MDPH promulgated new blood bank rules as of July, 1973. All blood banks have received copies of these rules and the evaluation of blood banks is underway.

For the first time the Michigan Legislature in 1972 provided the necessary support to the Red Cross Regional Blood Centers for them to supply this laboratory with fresh frozen plasma for the production of antihemophilic fractions to meet Michigan's needs for these products.

Michigan is one of the few states, if not the only one, where large quantities of NSA and Factor VIII are made available free of charge and where large quantities of these two products are routinely available. It is only because of the statewide cooperative blood program that these statements can be made.

The laboratories have been concerned for years with the problem that the standard, alcohol purified ISG product will cause unpredictably bizarre reactions in humans if administered intravenously. The first attempts were made here in the 60's, to modify ISG antibody-rich human protein preparations by enzymatic means to make the product tolerable when administered intravenously. A product was prepared and an IND obtained to use the product in clinical trial situations, primarily in the Boston area. Work on this product was limited because of lack of funds. Fortunately, the MDPH was awarded a contract by the National Heart and Lung Institute in 1973 to prepare further quantities of a fibrinolysin-modified ISG preparation for use intravenously. The production of this material will make it possible to obtain additional significant clinical information on the material.

A rabies vaccine of non-nervous tissue origin was developed by the Bureau of Laboratories in 1970. This vaccine represented the culmination of five years of research work, part of which was supported by funds from the Federal government. Following devolpment of this new vaccine, Dr. J. R. Mitchell, chief of the Viral Vaccines Section, developed a highly sensitive test for detecting residual live virus in rabies vaccines. This procedure will greatly minimize the release for distribution of any rabies vaccine that still contains live rabies virus. Therefore, the safety of the vaccine has been enhanced.

The new non-nervous tissue vaccine has now been produced and made available by the MDPH for clinical trials in man. In 1973 this vaccine was inoculated into nine human volunteers. All nine of these test subjects responded with significant increases in antibody titer and no adverse reactions were reported in any of these vaccinated subjects. This vaccine offers great hope for the future—for the first time we may now have a rabies vaccine that is much safer and at least as efficacious as any of the rabies vaccines that have been or are currently available for human use.

Through an effort initiated in 1969-70 by the late Dr. Thomas Francis, Jr., Chairman of the Department of Epidemiology of the University of Michigan, and Drs. Wilcox and George Anderson of the Bureau of Laboratories, a joint project was arranged between the MDPH and University of Michigan to develop a live non-virulent influenza vaccine for use in man. Since then 22 lots of live influenza vaccine have been produced. The initial effort was directed toward the development of non-virulent vaccine viruses by a process of cold adaptation. Such a procedure was developed and A and B cold adapted vaccines were produced by the laboratories for clinical trial in man. As of 1973, cold adapted vaccines had been instilled intranasally into over 1,100 human volunteers. Significant antibody responses were stimulated in a high percentage of the vaccinated individuals and no adverse reactions were reported following vaccination.

In 1973 the group at the University of Michigan developed a new procedure for attenuating wild influenza virus. In this procedure a cold-adapted parent strain is hybridized with wild virus to produce a non-virulent immunogenic vaccine strain. This procedure is extremely advantageous for vaccines now can be prepared rapidly to protect the populace against an epidemic or pandemic outbreak of influenza. The MDPH has produced two lots of hybridized live vaccine. Vaccines against both types of INF are continuing in clinical trials.

All aspects of the original Anthrax Contract were completed to the satisfaction of Fort Detrick and the U.S. Public Health Service during 1967-68. In this contract, this laboratory was able to establish new methods of purification which resulted in a more highly purified vaccine. Several lots of vaccine were prepared and a standard preparation was dried which was submitted to the Division of Biologic Standards, National Institutes of Health for use as the potency standard for licensing the product. An application for a license to produce anthrax vaccine was submitted in 1968 and was approved in November, 1970. This was the first time this product had been licensed in the United States or elsewhere, and as of 1973 MDPH remains the sole licensee.

The sheer growth of the laboratories over the period 1919-1973 is indicated by the increase of personnel from 9 to 420; buildings in Lansing from part of one to 30; branch laboratories from 1 to 3; regional crime laboratories from 0 to 2; number of diagnostic examinations from 36,653 to 1,689,516; and number of finished doses of biologic products available for distribution from 0 to 5,325,600. The budgets for the various periods, including grants-in-aid, are estimated as follows:

1919	$ 17,525
1944	1,661,480
1967	3,225,400
1973	7,051,800

This history of the State Laboratories covers its 66 years of existence in the Michigan Department of Public Health which was established 100 years ago, in 1873.

APPENDIX A

CLIFFORD CAUDY YOUNG, January 9, 1887—June 5, 1944.

Clifford Caudy Young was born January 9, 1887, in Manhattan, Kansas. His mother was the first white child of that territory and his grandfather, Josiah Pillsbury, was a member of the first Kansas Territorial Legislature.

He went to high school in Rochester, New York, covering the four-year course in two years. He entered Lehigh University but he transferred to Kansas University, where he received his A.B. degree in 1908. That same year, he became director of the Kansas state water survey, a position which he held until 1917. During this period he did graduate work at Kansas University, receiving the degree of Master of Science in 1909. From 1912-1917 he taught bacteriology and sanitary chemistry at Kansas University. On leave of absence in 1912, he enrolled at Massachusetts Institute of Technology and Harvard University for a joint course in sanitation.

During World War I, he was a First Lieutenant in the Army Sanitary Corps. On February 21, 1919, prior to his retirement from the army as a disabled officer, he was appointed director of the Bureau of Laboratories of the Michigan Department of Health, the position that he held until his death on June 5, 1944.

During 1922 and 1923, Dr. Young did graduate work at the Detroit College of Medicine and at the University of Michigan. He received a Doctor of Public Health degree from the University of Michigan in 1924. In 1942, Michigan State College awarded him the honorary degree of Doctor of Science.

On October 31, 1925, he married Minna Crooks, who served with him as an associate director of the Bureau of Laboratories of the Michigan Department of Health.

From 1931-38, he was professor and department head of Preventive Medicine and Public Health at Wayne University College of Medicine.

He was a Fellow of the American Public Health Association. For this organization he served in various capacities: 1932-36, chairman of committee on meetings and publications; 1937-41, member of governing council; since 1941 he had been a member of the executive board.

He was named chief of Emergency Medical Service for the Michigan Office of Civilian Defense in 1942. He was a member of the Infectious Disease Committee of the Medical Pan-American Congress; of Commission Three, Institut International Du Froid; of the Society of Experimental Biology and Medicine; of Alpha Chi Sigma; Delta Omega; and Sigma Xi.

C. C. Young, Dr. P.H., Director, Bureau of Laboratories, 1919-1944.

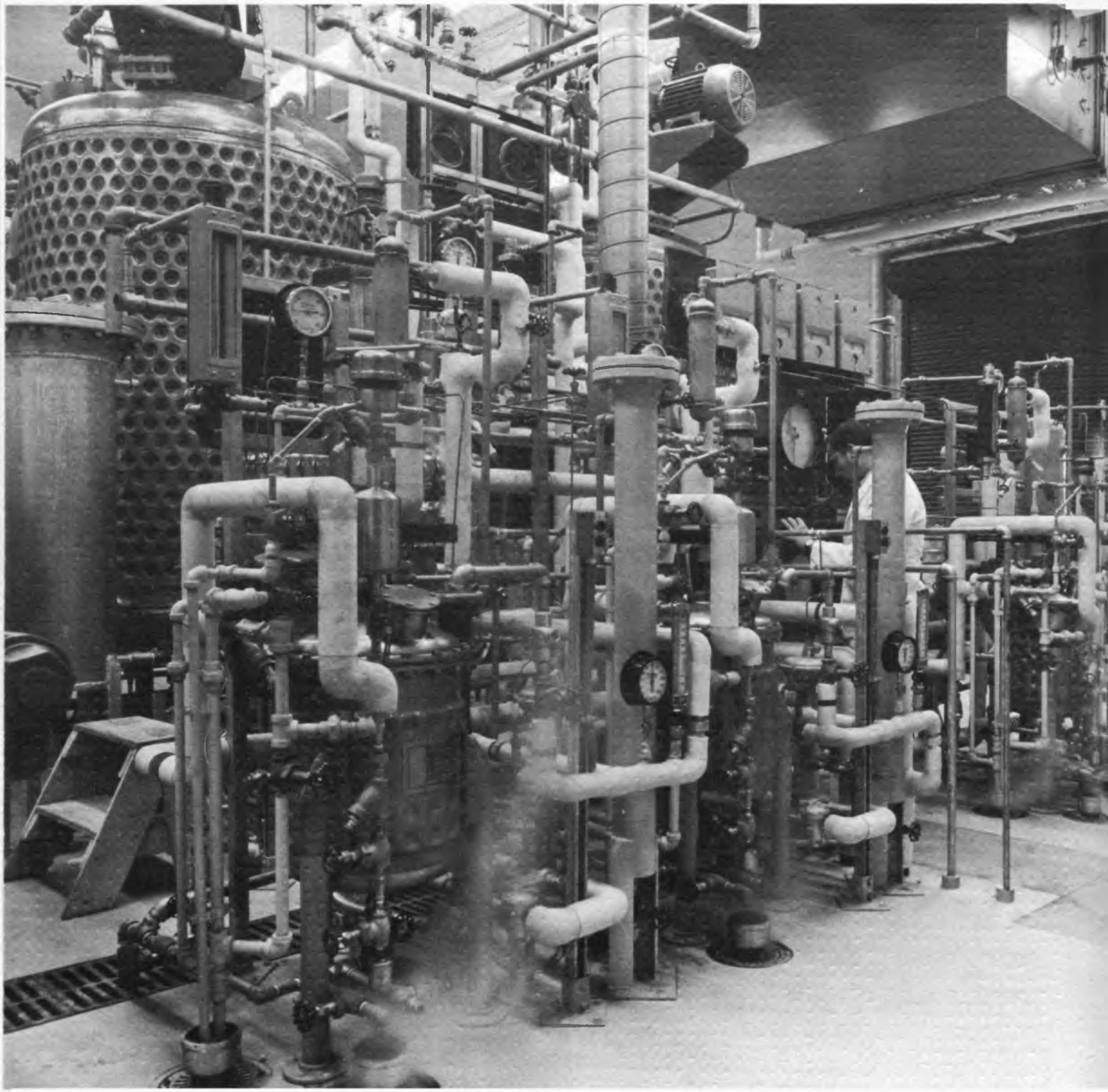
APPENDIX B

GEORGE DONALD CUMMINGS, October 20, 1904 —July 27, 1967.

George Donald Cummings born Quincy, Massachusetts, October 20, 1904; son of George and Jane (Fixter) Cummings. B.S., Massachusetts Institute of Technology 1926; Ph.D., University of Michigan 1934; M.D., Wayne State University Medical School; Internship, St. Lawrence Hospital, Lansing 1942-44. Licensed Physician and Surgeon 1944. Married Kathleen Mathieson, January 29, 1927. Children: Jane Cynthia, Bruce Donald.

G. D. Cummings, M.D., Director, Bureau of Laboratories, 1944-1967.

Fermentation tanks in the G. Donald Cummings Cancer Products Development Center which is involved in the development and production of anticancer agents.



Joined staff of the Bureau of Laboratories, Michigan Department of Public Health, July 1, 1926, and served in the following capacities: Junior Bacteriologist 1926-27; Senior Bacteriologist 1927-30; Assistant Director 1929-38; Associate Director 1938-44; Director 1944-67. Served as Acting State Health Commissioner 1948.

Diplomate: 1950, American Board of Preventive Medicine and Public Health; 1961, American Board of Microbiology; 1964, Section on Preventive Medicine and Public Health, Pan American Medical Association.

Awards received: 1961, Michigan Health Council Award for outstanding achievements in public health as laboratory director; 1959, Administration Career Service Award, Michigan Society of Public Administrators; 1962, Michigan State Medical Society's Certification of Commendation; 1963, Certificate of Appreciation from the Executive Office of the President, Office of Emergency Planning for efforts in the development and guidance of the National Blood Program.

Memberships: Delta Omega, 1926; APHA Fellow, 1929; State & Territorial Public Health Laboratory Director, 1938; Nu Sigma Nu, 1942; American Medical Association, 1944; Michigan State Medical Society, 1944; Michigan Pathology Society (Associate Member) 1945; Health Officers Association of Michigan, 1949; Sigma Xi, 1952; Alpha Omega Alpha, 1954; Alumni, Wayne State College of Medicine, 1956; American College of Preventive Medicine, 1958; Michigan Association of the Professions, 1964; Ingham County Medical Society, 1944; Lansing Medical Journal Club, 1954; City Library Citizens Advisory Committee, 1959-61; Lansing City Club; St. Paul's Episcopal Church.

Served as consultant as follows: International Consultant, Pan American Health Organization, WHO, 1956-67; Chairman, Subcommittee on Blood, Health Resources Advisory Committee; Office of Civil and Defense Mobilization, 1951-57 and Special Consultant, 1957-63; Edward Sparrow Hospital, Lansing, in Epidemiology and Public Health and Pediatrics, 1944-67; Department of Pediatrics, St. Lawrence Hospital, Lansing, 1944-67; Microbiology and Immunology Study Section, National Institutes of Health, 1951-57; Panel on Transfusion Problems, Division of Medical Sciences, National Research Council, 1956-57; WHO Expert Advisory Panel of Health Laboratory Services, 1966-67.

Special interests: epidemic diarrhea of the newborn; blood programs.

APPENDIX C

KENNETH ROYS WILCOX, JR., March 24, 1930—

Kenneth Roys Wilcox, Jr., born Butler, Pennsylvania, March 24, 1930; son of Kenneth and Mary (Miskimins) Wilcox. A.B., Ohio University, 1951; M.D., University of Chicago, 1955; MPH, University of Michigan School of Public Health, 1960, Dr.P.H., University of Michigan School of Public Health, 1963; Internship, Cleveland Metropolitan General Hospital, 1955-56; Licensed Physician and Surgeon, 1962. Married Laura Anderson, May 31, 1952. Children: Cathryn Lou, Carolyn Sue, David Anderson, Mary Ann. Home: 337 Chesterfield Parkway, East Lansing, Michigan.

Joined staff of the Bureau of Laboratories, Michigan Department of Public Health, September 4, 1962, and has served in the following capacities: Coordinating Physician 1962-63; Assistant Chief 1963-66; Deputy Chief 1966-67; Director of Laboratories 1967-.

Previous experience: Assistant Resident in Pediatrics, Cleveland Metropolitan General Hospital, 1958-59; Epidemic Intelligence Service, USPHS, Epidemiologist for Wisconsin 1956-58.

Diplomate: 1965, American Board of Preventive Medicine and Public Health.

Memberships: Delta Omega, 1960-; APHA, 1957- (Fellow, 1968-); State and Territorial Public Health Laboratory Directors, 1964-; American Medical Association, 1963-; Michigan State Medical Society, 1963-; Sigma Xi, 1963-; American College of Preventive Medicine, 1966-; Ingham County Medical Society, 1963-; New York Academy of Science, 1965-; Michigan Public Health Association, 1963- (Board of Directors, 1966-); Michigan Health Resource Management Organization, 1968; Torch, 1963-; Peoples Church of East Lansing, 1963-.

Serving as consultant as follows: Five States' Governors Interdisciplinary Committee on Pesticides (Chairman), 1969-1972; Epizootiology Section, Epidemiology Branch, FS, National Cancer Institute in East Lansing on statistical design and analysis of technical and medical data, 1965-; the Regional Poultry Research Laboratory, U.S. Department of Agriculture, 1964-68; Chairman, Lansing Community College Liaison Subcommittee, 1970-; Technical Advisory Committee, State Employee Health Maintenance Program, 1969-.

Kenneth R. Wilcox, M.D., Director, Bureau of Laboratories, Michigan Department of Public Health, 1967—present.

TRIBUTES

In considering 100 years of public health in Michigan, it is obviously impossible to recognize all those individuals and groups who have made substantial contributions to better health in the state. Yet it is, we believe, important to try to recognize and to honor certain people and certain groups whose impact on public health over the last 25-plus years has undeniably been great. Today we have with us 25 such individuals and representatives of 5 such groups who have been selected for special Centennial Awards. The selection of these people was not a difficult task for the Awards Committee. All have earned and richly deserve the Award. The difficulty was in limiting the number to 25. Although such a limitation was essential, it means of necessity that many others must go unrecognized. I know that you all understand that for each person receiving an Award there are a dozen others who have also contributed, and whose efforts are fully appreciated.

What can I say of those who are honored? They have given to the people of this state of themselves—have created a legacy which will be handed down for others to follow—they have bequeathed to us the richest gift of all—the gift of personal devotion and dedication to a goal larger than self, of deep and abiding commitment to a noble cause—better health for all people of this state. The people who receive this Award have given the greatest gift possible—themselves. Now I am most pleased and most honored to have the real privilege of presenting these Awards, as one who just happens to be fortunate enough to be the State Health Director in this our Centennial year.

M. Reizen, M.D.

Director
Michigan Department of Public Health

ACOCKS, JAMES R. — Earned his M.D. from Ohio State in 1937—served residency in Pulmonary Diseases at Herman Kiefer. After two years as Assistant Superintendent of the Copper Country TB Hospital, entered service in 1941 and was a flight surgeon in Air Corps. He returned to Houghton in 1946 and in 1947 became a director, Morgan Heights Sanitorium in Marquette. In 1971 he was honored in his silver jubilee year as Director of Morgan Heights for the 25 years of service he gave to patients and the compassionate understanding he showed to patients and families. He is currently secretary of the Marquette Alger Medical Society and a member of many professional groups including the American Aeromedical Association.

BEADLE, FRANK — Frank Beadle is one of the most highly respected Senators ever to serve in the Michigan Legislature. He was for many years chairman of the Senate Appropriations Committee. Those of us in Public Health always knew that Senator Beadle was a man of great integrity, candor, and concern. He was always interested in and concerned for Public Health and while we might not always get what we asked for, we were assured that we would get an honest and fair hearing. Senator Beadle is a former District Governor of the Lions Club and a life member—and during the winter months in Florida, he still spends much time carrying the message of the leader dog school to Florida Lions Clubs as well as his golf clubs! He was and is an important and good friend to Public Health.

BIGHAM, GLORIA — Earned a B.S. in nursing from Wayne State, 1953—M.P.H. University of Michigan 1966. Staff Nurse, Detroit Health Department 1953-57. Supervising nurse 1957-65 instructor; Community Health Concepts Project, Mercy College 1966-68. Since 1968 Director of Nursing for largest children and youth health project in nation—PRESCAD. Has been a leader in working toward improved health care for urban poor in Detroit. Author of numerous papers and articles. Elected to Delta Omega, Delta Chapter, Honorary Public Health Society, University of Michigan, Fellow APHA, one of six finalists for Mary Mahoney Award in 1972. Accepting award was Mrs. Bigham's daughter.

CORNELIUSON, GOLDIE — Began public health work as Children's Fund Physician 1930-33. Joined Department in 1933 as Field Physician in Maternal and Child Health, became Assistant Director M&CH in 1935, was appointed director in 1946, a position she held until her retirement in 1966. She was a founder of Bay Cliff Health Camp and directed it from 1933-38. Received Distinguished Service Award, Michigan School Health Association 1960 and awarded certificate of commendation by MSMS 1964. Dr. Corneliuson was always an uncompromising and energetic fighter in the cause of better health for mothers and children and was instrumental in bringing national

acclaim for Michigan for its' many pioneering efforts in maternal and child health services. Accepting award was Miss Jean Rebentish.

DELAVAN, MARJORIE — Began work with Department of Public Health in May of 1918 under Dr. R. M. Olin and headed Health Education until her retirement in October 1957—almost 40 years of continuous and outstanding service. A past President of MPHA, Miss Delavan served as its secretary for many years and was a mainstay of that organization throughout her career. Miss Delavan traveled Michigan in the 1920's by train, by bus, and then by Hupmobile. As she has written, she talked about Public Health to any group that invited her and some that didn't. One of the real pioneers in public health education—and a truly great lady.

ENGELKE, OTTO—M.D. from Cincinnati College of Medicine, 1933—M.P.H. 1941 University of Michigan—Director of Adams County Health Department in Ohio 1938-1940. Fellowship from Kellogg 1940-41. Director of Washtenaw County Health Department 1941-1972. He has been Assistant Professor, School of Public Health University of Michigan since 1945. Was President of Michigan Health Officers 1959—President of Michigan State Medical Society and Michigan Public Health Association in 1961—and received Michigan Public Health Association's Distinguished Service Award in 1967.

FERGUSON, WILLIAM — Dr. Ferguson is an internationally known expert in enteric bacteriology and bacterial virology and has been instrumental in improving laboratory techniques and procedures throughout the state through his active participation in education and training programs. He has contributed basic knowledge in the field of bacteriophage typing and initiated the developmental microbiology programs of the MDPH which still provides a vital service to physicians and public health officials across the State. During his 38 years with the Department of Health his many scientific and administrative accomplishments have contributed much to improved health for Michigan people. Accepting award was Dr. Wilcox.

HAZEY, GEORGE — He has held key positions in three water treatment plants in Michigan: Marysville, Marine City, and Wyandotte—where he became superintendent of Municipal Service. He has worked closely and effectively with the Water Resources Commission in urging action to clean up the Detroit River, collecting reliable data to prove the need for action. He has assisted in teaching formal courses in water treatment and, in 1941, obtained the highest certificate issued by MDPH for water works operators. In 1960 he was awarded the George Warren Fuller Award of the American Waterworks Association and in 1963 the Edward Dunbar Rich Award of the Michigan Department of Public Health.

HEUSTIS, ALBERT — M.D. from University of Michigan 1936—M.P.H. from Johns Hopkins 1942. Began Public Health career as health officer in Monroe and Branch counties 1943 and was appointed State Health Commissioner in 1948—a position he held longer than any other commissioner, serving for 19 years when he resigned in 1967 to head the Michigan Association of Regional Medical Programs. Impossible to list all positions he held or organizations to which he belonged, but for almost 20 crucial years, Doctor Heustis was *the* public health leader of the State—and as Senator Beadle can testify over those difficult years he earned the respect and confidence of the legislature and the people as a man of integrity, energy, and dedication to the cause of public health.

HUMBARGER, LLOYD — Mr. Humbarger was involved in the early development of the TB Association in Calhoun County and for more than 25 years has been an active volunteer in local, state, and national TB organizations. He is a past president of MTRDA, has been a member of the Board of Directors for 20 years, and is a member of the Board of Trustees of the American Lung Association. For over 25 years he has been a voluntary board member of Leila Post Hospital in Battle Creek. He also has been a member and chairman of the Battle Creek School Board and and was instrumental in developing the Battle Creek Community College.

KINDE, MATTHEW — Earned M.D. Degree, University of Michigan, 1929—served as Director of Barry County Health Department from 1931-35—Director of Calhoun County Health Department from 1935-37. Joined Kellogg Foundation as Field Director in 1937. Served in health service, U.S. Army Corps Engineers 1942-46, returned to Kellogg 1946 as Director, Division of Public Health and then as Director of Division of Medicine and Public Health. In these capacities he was responsible for all grants in these fields including medical education, training of public health personnel, accident prevention, continuing education for public health and allied personnel.

MALLMANN, WALTER — Association with Department of Bacteriology, Michigan State University for many years, he has made significant contributions to education and to environmental health. Has worked on many committees relating to programs of Michigan Department of Public Health and has contributed much of his time and skill to public health programs. Dr. Mallmann received Distinguished Service Award of MPHA just yesterday and is one of the truly great educators who has had a profound influence on better public health in Michigan and the nation.

MARGOLIS, FREDERICK — In addition to maintaining his private practice, Dr. Margolis has found the time and energy to be involved in numerous community health efforts. He was instrumental in forming the Northside Medical Center in Kalamazoo. He served for several years as acting director of the County Health Department; he developed the concept of a fluoridated vitamin for children without access to fluoridated water; he has made over 50 motion pictures over the past 30 years which are widely used in medical and lay education and is presently doing a series of TV shows on Health Education, and was one of the six core writers of the book *Human Sexuality* published by the AMA in 1962. He also won a Peabody Award for his health education work on radio with the Navajo Medical Center, where he reduced the diarrhea death toll from 110 deaths a year to 5.

DR. LORENZO NELSON — is the third generation of doctors in his family and his lovely daughter Dr. America Nelson is the fourth generation. Dr. Nelson received his M.D. from Meharry Medical College in 1929, served residency at Provident Hospital, Chicago, and in 1935 was commissioned First Lt. and assigned as Camp Surgeon in Civilian Conservation Corps. In 1941, Dr. Nelson was called to regular army duty. After his army service, he returned to Baldwin and set up private practice. He was until recent years the only physician in the county and its sole source of medical care. He has served as President of the Tri-County Medical Society, Chief of Staff of Reed City Hospital, Medical Advisor to the County Bureau of Social Aid, and is currently Medical Consultant for the Western Michigan Comprehensive Health Services Center, Inc. in Baldwin, as well as being Lake County's Medical Examiner.

PALMER, CLYDE — more than any one person he conceived and nurtured the Detroit Metro Sewer, Drainage, and Pollution Control System, recognized internationally as unique in its combination of sound engineering, environmental safeguards, and attractive user rates. Mr. Palmer was employed for some 40 years by the City of Detroit beginning in the late twenties, as engineer, designer, planner and Administrator. Throughout his career he has been active in professional societies, service and social clubs and working closely with state and local government; he has always been a strong advocate of community health facilities.

PATRIARCHE, JOHN — has been City Manager of East Lansing for 25 years since 1948. Prior to that he had served as sewage plant operator, superintendent of water and sewer and public service, and as city engineer. In his capacity as City Manager, he has served on two hospital study committees, Area Health Study Committee, member of Board of Supervisors

and chairman of Health Committee, Acting Health Director for one year, member Ingham Medical Hospital Board, Greater Lansing Health Facilities Council, and Capitol Area Comprehensive Health Planning Council. Recognized as a leader in city management nationally and especially in the area of health planning.

PHELAN, KATHERINE — began public health work in Michigan in 1939 and has been an outstanding leader over the years. She has expanded public health nursing services in Oakland County, helped Royal Oak design and implement health education curricula now used in all grade levels. Helped develop criteria for nursing care needs of patients in nursing homes. Provided leadership in implementing one of the first programs using chemotherapy prophylaxis for the TB patient: has served on Oakland County OEO Health Committee since its inception, has pioneered in initiating health classes for teen-age mothers, helped plan special health screening programs for Oakland County children as a forerunner of Medicaid screening. She has made many contributions to professional organizations and gave dynamic leadership to MPHA which she served as President last year.

SHIPP, MRS. HAZEL — began health work as instructor Dental Clinic, U of M in 1920. In 1928 returned to her home in Gaylord. She and her mother helped establish the local health department in 1929 with support of Couzens Fund. She helped establish Red Cross Unit in Otsego County in 1941 and Cancer Society in 1945. In 1943, she started the Blood Bank unit for plasma for MDPH and over the years set up volunteer help for the health department's Orthopedic and Plastic Surgery Clinics in the area. In 1948, Mrs. Shipp was President of the State Hospital Auxiliary and has served on local hospital board since 1962. In 1971 she set up all committees for current Red Cross Blood Bank, and was instrumental in getting an extended care facility for the area. A truly outstanding volunteer for health.

SHORT, J. ROBERT — Past President, Michigan State Dental Society, long-time member of former Kalamazoo Health Council, member of Kalamazoo Board of Health since its inception and its chairman past five years, serves on dental staff of both Kalamazoo Hospitals, was instrumental in establishing dental clinic in health department, has been actively involved in many aspects of fluoridation. When Governor Romney made first appointments to Comp Health Planning Council Dr. Short was chosen as dental representative. Has published many papers on community dental health, dental health education, and auxiliary manpower.

SLEE, VERGIL — M.D. from Washington University, 1941, M.P.H. Sc. of P.H. University of Michigan 1947. Fellow in Public Health Administration,

W. K. Kellogg Foundation, Van Buren County 1946; Barry County Health Department 1947-48; Director Barry County Health Center 1949-54; Director Professional Activity Study, SW Michigan Hospital Council 1954-56; Director Commission on Professional and Hospital Activities, 1956-71 and its' President since 1971. Member of numerous boards, committees and commissions, awarded key award for meritorious service, Michigan Hospital Assoc., 1968. Currently member of Washtenaw County Board of Health.

SMITH, ALICE — Mrs. Smith began work with the state health department in 1944 as the only nutritionist in the Bureau of Maternal and Child Health. By 1948, there were six nutritionists in the Department and the program became part of the local health services. Mrs. Smith has always been a person of unusual energy and dedication, and during her 23 years as head of the nutrition section she instituted numerous innovative programs such as the dietetic intern program with the U of M Hospital, two iodized salt surveys; a nutrition apprenticeship program; nutrition programs for hospitals and nursing homes; programs in the use of donated commodities, and diet therapy annual conferences in cooperation with the Michigan State Medical Society. Mrs. Smith is recipient of distinguished Alumnus Award, Northern Michigan, MPHA, the Michigan School Health Association, and Michigan Home Economics Assoc. have all presented awards to her.

STRYKER, OSCAR — M.D. from Northwestern University, 1929—M.P.H. from University of Michigan in 1949. Organized Macomb County Health Department in 1947 (after 18 years private practice in Fremont) and was its Director until his retirement. He was a member of Michigan State Board of Registration in Medicine, 1951-63—was appointed to State Public Health Advisory Council in 1963 and still serves in that capacity—is member of Board of Directors MTRDA; Macomb County Society for Crippled Children; Children's Aid & Family Service; Child Guidance Clinic; Society for Retarded Children; and Michigan Cancer Foundation and is member of Governor's Commission on Mental Health Facilities and the Macomb Community Health Service Board.

TURNEY, GREY — Mr. Turney served as Sanitarian for Lansing-Ingham County Health Departments, for 38 years from 1930-1968. Worked closely with Dr. Walter Mallmann in research relating to microbiological examinations of dishwashers and dishware —comparative studies of breed smears and plate methods for examination of raw milk and various studies of milk sample containers. Was active in Associations of Dairy and Milk Inspectors for more than 10 years. Received Sanitarian of the Year Award in 1955.

VAUGHAN, HENRY — Undoubtedly one of the greatest names in public health in Michigan. First person to receive Dr. P.H. degree from University of Michigan, Dr. Vaughan was Assistant Sanitary Engineer, MDPH 1913-1914. He became Commissioner of Health for Detroit in 1919, and in 1941 became the Dean of the School of Public Health, University of Michigan. In 1949 he was cofounder and President of the National Science Foundation, became President Emeritus in 1967, and retired from active service with the Foundation just last year. During his career, he was active in APHA and received the Outstanding Sedgwick Memorial Medal in 1949. He served as trustee of W. K. Kellogg Foundation for 40 years, was President of State Health Council for over 20 years and has been named to Michigan Hall of Fame for Health, and was named Honorary Fellow, Royal Institute of Health, Great Britain. (Dr. Don Smith accepted award.)

WERTHEIMER, FRED — Dr. Wertheimer began his public health career in 1920 when he joined the Flint Health Department. In 1922 he organized and directed the dental service program for the Boys Club of Detroit; in 1937 he directed the School Dental program for Berrien County; and in 1943 joined the dental staff of MDPH and was named Director of the Dental Division in 1946 where he served with distinction until his retirement in 1963. More than anyone, Dr. Wertheimer is responsible for Michigan's pioneering in water fluoridation programs and he has earned the title of Mr. Fluoridation in this state.

GROUP Recognition Awards

CHILDREN'S FUND

KELLOGG FOUNDATION

KRESGE FOUNDATION

MOTT FOUNDATION (Charles Stewart Mott) Deceased

Multiple Antigen Committee

Harland D. Anderson, Ph.D.

Gordon C. Brown, Sc.D.

William E. Bunney, Ph.D.

Grace Eldering, Sc.D.

Russell Y. Gottshall, Ph.D.

Pearl Kendrick, Sc.D.

V. K. Volk, M.D., Dr. P.H.

Service Awards

ELROD, ALFRED O. - "Tiny" — Mr. Elrod has applied the principle of the "pursuit of excellence" to his maintenance tasks in the Bureau of Laboratories for 40 years, and his year in, year out efforts have contributed uniquely to the quality of work in the Laboratories.

GACKLEY, LEONA — Miss Gackley has dedicated the majority of her life to the Crippled Children's Program, starting with the Crippled Children Commission in 1934, where she works as a specialist in data coding machine operations. We are truly proud of the untiring devotion of Miss Gackley who has performed diligently and faithfully in spite of a major physical handicap. (Dr. Rice accepted award)

ISBISTER, DR. JOHN — Received his M.D. from Wayne State in 1943, interned at St. Lawrence Hospital, Lansing, joined Ingham Chest Hospital in 1945. He was appointed TB Control Officer, MDPH in 1951 and served with distinction in that capacity until 1966 when he was appointed to his present position as Chief, Bureau of Community Health. Maintenance man in residence.

KIVELA, EDGAR W., Ph.D. — "Ed" Dr. Kivela has applied his skills in scientific crime detection over the last 25 years with the department and has developed a nationwide personal reputation as an expert in the field and thus a similar reputation of excellence for the state crime laboratory.

MANTY, ROY — Mr. Manty has been 31 years in state service with 23 years in the state health department. He has the distinction of being the first non-physician invited to membership in the Association of State and Territorial Directors of Local Health Services and will be installed as President of that organization at the 1973 meeting in June. In Michigan, Roy is known as "Mr. Public Health" because of his long and important support of the system of local health departments.

MILLER, LaRUE — LaRue Miller entered the field of public health as the first sanitary engineer of Oakland County Health Department in 1934 coming to the State Health Department in 1936. He has been closely associated with local health departments in rendering advice and consultation services in the field of environmental health and has played a major role in the upgrading of local environmental health personnel by the development and administration of the job classification plan and the standards of performance for such personnel.

Roy Manty died August 13, 1974.

OSBORN, COURTNEY — Mr. Osborn began his career in Public Health in Michigan in 1942. Last year marked his 30th year of service to the State of Michigan. Mr. Osborn was hired to create a program for hearing conservation on a state-wide basis. When Mr. Osborn began his work, there were no patterns for our state-wide hearing conservation programs. This individual proceeded with this charge and immediately began demonstration programs. From that time hearing conservation has spread to a program involving hundreds of thousands of Michigan's children who are hearing normally today who might have well lived a life of hearing impairment had it not been for the work of Courtney Osborn.

PIERCE, DONALD M. — In his 38 years of state service Donald M. Pierce has gained national prominence as an environmental engineer in the area of waste disposal and water pollution control. (Last month, after serving 22 years as Chief of the Wastewater division in the Department of Public Health he retained this position when environmental functions were consolidated in the Department of Natural Resources.) For the past 2½ years Mr. Pierce has been a member of a Technical Advisory Group to the Federal Environmental Protection Agency dealing with guidelines and technical bulletins on design and management of water pollution control facilities. He has accepted a one-year extension in his appointment following his planned retirement from state service in July.

ROSENOW, RUTH — Miss Rosenow has been with the state health department for 32 years and got her start in public health in the Manistee County Health Department during the preceding five years. During her career, she has seen and influenced the total development of the record systems in the local health departments and probably knows these operations better than anyone else in the state. In addition, through her extensive activities with the Michigan Public Health Association, she has served as a very valuable liaison between the state health department and that organization.

SCHAFER, ANN M. — Efficient, dedicated, loyal, respected, and well liked—all attributes of Ann Schafer who came to the State Health Department almost 30 years ago as a typist for the Occupational Health Program. She is still there to this day, although she has advanced from that first assignment to the post of Office Manager of the Bureau of Industrial Health.

SCOTT, THELMA — "Scotty" began work for the department in 1938 in the Division of VD Control. In 1944 she moved to M&CH, in 1950 to the Laboratories, and from 1955 to 1969 she was a mainstay in the Biological Products Division and in 1969 she was promoted to a position in the Bureau of Health Facilities.

SMITH, MARION T. — "Marion" Mrs. Smith has given outstanding service to the Bureau of Laboratories for 25 years in assisting the Bureau Chief in all phases of administrative work from personnel problems to budgeting.

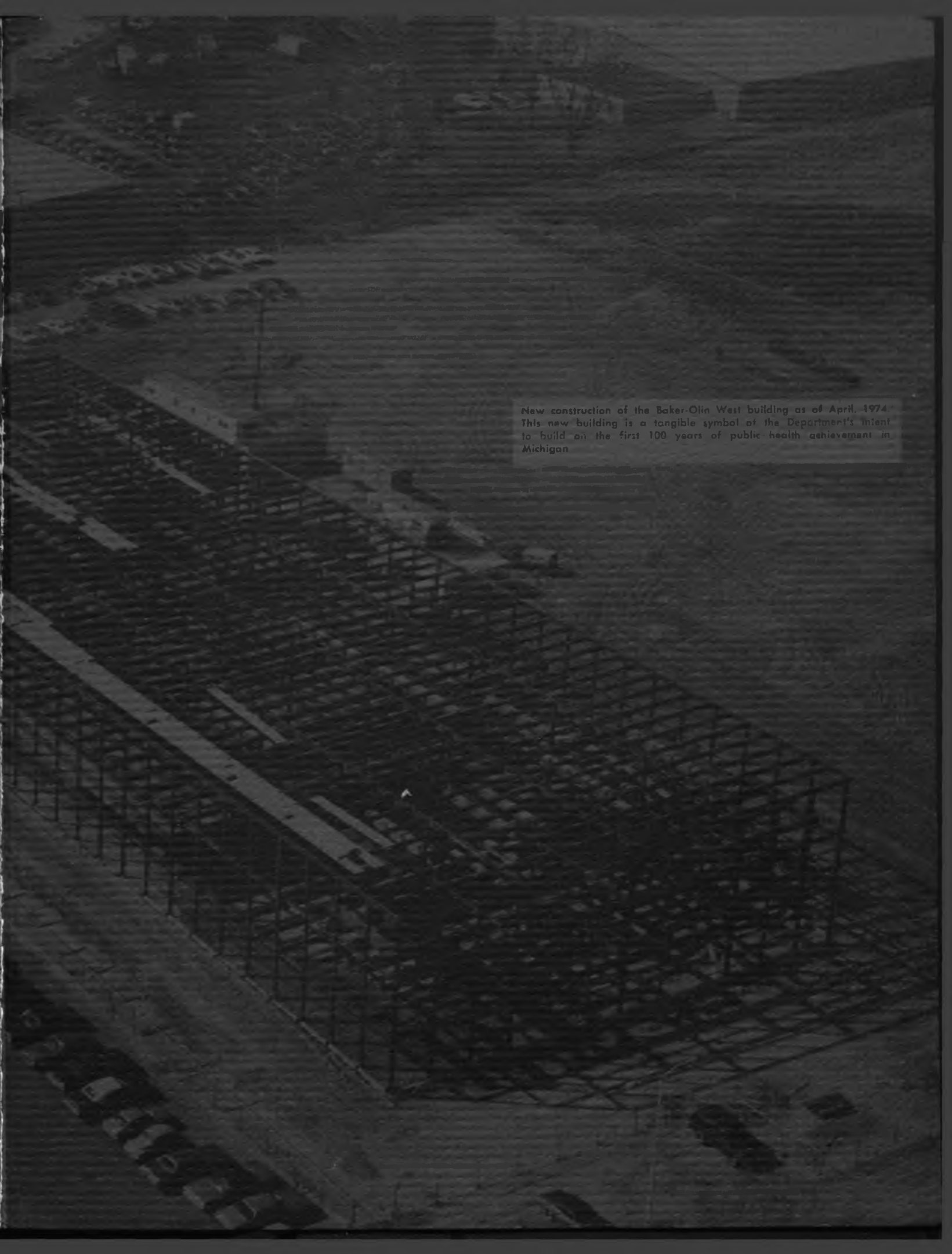
SOET, JOHN C. — A chemical engineer and industrial hygienist who has devoted nearly four decades to public health. On July 1, he will retire as Chief of the Bureau of Industrial Health, Michigan Department of Public Health, leaving behind a record of 33 years and 9 months of service to the State out of his 37 years in the public health field.

VANDER VELDE, T. L. — T. L. VanderVelde began his career in public health in 1935 spending two years with the Isabella County Health Department. He joined the State Health Department in 1943 and became the Chief of the Water Supply Section in 1951, and has administered the growth of the Division from a professional staff of 3 to one of 16 which enjoys the respect of the water supply industry in Michigan and the nation.

VOGT, JOHN E. — John E. Vogt was recruited into public health in 1937 through the W. K. Kellogg Foundation field training program coming to the State Health Department in 1941 from the Isabella County Health Department. He became Director of the Division of Enginering in 1960 and in 1971 the Division was elevated to Bureau status and he was designated as its chief. His efforts in the development of necessary legislation affecting man's environment, his role in promulgation of regulations and implementation of such legislation and regulations in administering a number of efficient and effective programs has placed him in high esteem among those of his profession.

WHITE, RITA — Mrs. White has been with the Department since September 1944, where she has risen through promotions from clerical positions to her present position as Administrative Analyst with the Bureau of Maternal and Child Health. She is currently involved in the very complex conversion system of the invoice processing methods under the Crippled Children's Program from a manual system to computerization.

John Soet died at his home in Grand Rapids November 12, 1973.



New construction of the Baker-Olin West building as of April, 1974. This new building is a tangible symbol of the Department's intent to build on the first 100 years of public health achievement in Michigan