7-25-1963

A Suggested high School-Community Aquatic Guide

Richard L. Kelley

A SUGGESTED HIGH SCHOOL-COMMUNITY AQUATIC GUIDE

(TITLE)

BY

Richard L. Kelley

PLAN B PAPER

SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR
THE DEGREE MASTER OF SCIENCE IN EDUCATION
AND PREPARED IN COURSE

Physical Education 475

IN THE GRADUATE SCHOOL, EASTERN ILLINOIS UNIVERSITY,
CHARLESTON, ILLINOIS

1963
YEAR

I HEREBY RECOMMEND THIS PLAN B PAPER BE ACCEPTED AS
FULFILLING THIS PART OF THE DEGREE, M.S. IN ED.

7/25/63
DATE

[redacted]
ADVISER

7/25/63
DATE

[redacted]
DEPARTMENT HEAD

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CHAPTER I

INTRODUCTION

> Aquatics has grown from a mere "learn to swim" program to a multi-activity program that includes such new and exciting activities as water skiing and scuba diving. The ability to swim is basic to participation in all aquatic activities, but just to know how to swim is not enough. Knowledge and understanding of both the activity and of the circumstances under which it is conducted are equally important.
>
> All swimming and aquatics programs conducted by schools, colleges, clubs, "Y"'s, recreation departments, and camps should offer a wide selection of aquatic activities. In numerous situations, limited facilities do not permit actual participation in an activity; for example, water skiing cannot be performed in an indoor pool. Nevertheless, it would be quite appropriate to include in the program a discussion and a demonstration of the proper techniques and safety aspects of the sport. Inevitably, people will take part in some activity even without instruction. Thus it is the responsibility of the aquatics instructor to include as much information as possible about the many different aquatic activities.[1]

The writer will proceed in accordance with the suggested objectives mentioned in the preceding quote. Aquatic manuals, handbooks, and other reference material note that less than two per cent of the schools in the United States have swimming pools. Of these two per cent only a handful have what may be considered a guide or checklist

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[1]M. Alexander Gabrielsen, Betty Spears, and B. W. Gabrielsen, Aquatics Handbook (Englewood Cliffs, N. J.: Prentice-Hall, Inc., 1960), p. v.

that a new school might follow in order to set up a satisfactory aquatic program. It is, therefore, intended that the following suggestions will help fulfill this need.

It is further intended that the suggested swimming program will become an integral part of the basic physical education program of the school, governed according to the specific principles and policies of the school.

To complete the entire scope of the swimming program, the community and the public in general should be invited to take part in it. Variations of the rules and regulations will have to be used where adults and special cases are concerned. They will, however, still be under the administration of the school, and more specifically under the department of physical education.

Facilities will not be the same in any two situations, but with certain modifications, the following program should fit reasonably well into the curriculum of any institution.

A lack of qualified instructors may prove to be the chief weakness in any aquatic program. It appears, however, that there is a current trend in colleges to give formal education to physical education majors in all phases of aquatics. With this in mind, administrators should not have too much difficulty in obtaining qualified teachers and instructors. With a competent and qualified faculty

member in charge, a system of developing student leaders should show positive results.

Another weakness will be in scheduling time blocks for instruction, recreation, practice periods, and demonstrations or shows. Suggested schedules in Appendix A should solve most problems encountered in scheduling.

Evening responsibilities will show up as another weakness of the program. Few administrators would trust the lives of several people to a student instructor. Fewer people still, would trust their lives to such a leader. It would be imperative, then, to have a faculty member in charge, and few teachers are interested in a twelve or thirteen hour day. With complete community backing, however, evenings must be made available to the adults of the community or the program will suffer.

When introducing a new phase of physical education into a school or community the question often arises: what place will this have in the school program? In the case of an aquatics program this question may be best answered by the following quote:

> The National Safety Council, for more than thirty years, has stressed that accidents may be prevented. One form of prevention is to teach people to swim in places where it is safe. A pool built and maintained by a public institution with all the necessary life guards is far safer than "the ole swimming hole." The National Safety Council statistics show that the fourth ranking cause of accidental death is drowning.
>
> Youths who seek summer entertainment and excitement need a safe place in which to expend their energies in productive and satisfying activities. The California cities of

> Livermore, Tracy, and Santa Clara have found that when the school and community co-operate in planning and offering swimming facilities, loss of life by drowning is practically eliminated. Before the communities adopted their low-cost swimming programs, drownings in irrigation ditches were a regular summer occurrence.
>
> Over half the nation's deaths from drownings have been among young people between five and twenty-four years of age. Individuals of this age group need swimming and water-safety instruction. The following charts [Appendix B, pages 34 and 35] show the slow decline in deaths from drowning since 1913 when the toll was ten thousand people. This decline in deaths, in spite of an increase in population, has been due in part to the efforts of such groups as the American Red Cross, the Y.M.C.A., the Boy Scouts of America, and Girl Scouts, the Campfire Girls, and many more public-spirited organizations which are teaching people to swim.[2]

Other arguments for the inclusion of an aquatics program in the school would be the conclusions drawn during World War I and II concerning the physical fitness of the young men of America. Because such a large percentage of inductees into the military service were rejected, compulsory physical education in the public schools became law.

Physical education authorities have long recognized that swimming is one of the best means toward developing physical fitness. Swimming facilitates muscular development and induces relaxation from the action of the water over the body, without causing over-exertion or fatigue.

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[2]Donald W. Neilson and John E. Nixon, Swimming Pools For Schools (Stanford, Calif.: Stanford University Press, 1954), p. 3.

The therapeutical values derived from swimming are a very effective means toward correcting various musculo-skeletal defects, and providing recreation for the handicapped. These values, especially in the treatment of polio were widely dramatized in the 1930's and 1940's by President Franklin D. Roosevelt.

Swimming may also be the answer to spectatoritis. Muscle tone and physical fitness may be maintained throughout adult life if one is an active swimmer. Little strain is created through a swimming program; yet the adult becomes an active participant, rather than a passive spectator.

The inclusion of an aquatics program could be economically sound. Everyone should have the ability and skills necessary for swimming. If all are to learn, where else can it be done so inexpensively as in the public schools? Since the conclusion of World War II, more and more schools have introduced swimming into the physical education program. Many leading physical educators believe that swimming should be considered the primary activity in the physical education curriculum. Many of these same experts believe that swimming should be an actual requirement for high school graduation. In Neilson and Nixon, the following study on community swimming pools reports that:

> School-community planning, building, and operation of the pools has several important advantages, chief among which are: (1) economy due to lack of duplication of facilities and greater use possibilities during the entire year; (2) lower fees to users; (3) closer relationships engendered between the schools and the community

> including especially non-parents; and (4) increased facilitating of family-group participation together, in wholesome and beneficial recreational activities.[3]

Schools should offer physical activities in their curriculum which develop skills and knowledges beneficial to the whole student. Swimming, therefore, becomes one of the very best activities in furthering this general objective. Neilson and Nixon report the following statement on the benefits of swimming:

> An analysis of a swimming program will disclose that although emphasis is placed on teaching all pupils to swim, there are other important reasons for its inclusion. Two separate studies conducted twenty years apart have indicated that of all the activities in the physical education curriculum, swimming is foremost in benefits for the individual and group.[4]

Recreation wise, the values of swimming are obvious to all. Swimming is a normal, almost natural, activity that most of us go through at one time or another. If the necessary skills and abilities have been learned, few activities can surpass swimming as a recreational activity.

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[3] Ibid., p. 5.

[4] Ibid., p. 2.

CHAPTER II

THE POOL

> The swimming pool is one facility where the most expert and all inclusive advice is needed in its construction. A competent, experienced pool operator and the teacher or leader who is to conduct activities in the pool should be brought into conference to define and explain the recreational use for which the pool is intended. This information is invaluable to the architect, construction engineer, public health official, the acoustical engineer, the lighting expert, the plumbing and heating specialist, as well as to the expert on filtration equipment and purification of the water supply. There is economy in having the best authorities consulted, when planning and constructing the swimming pool. There is economy in seeing that the continuous inspection of all work is maintained as construction progresses to make certain that the facility is constructed according to specifications and will fulfill the use for which it is intended.[5]

When considering the overall program of a swimming pool, the following activities should be included; instruction, life saving, health and safety, remedial and corrective physical education, competitive swimming and diving, water games and contests, intramurals, water pageantry and water ballet, social recreation, family swims

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[5]National Conference on Facilities for Athletics, Recreation, Physical and Health Education, A Guide for Planning Facilities for Athletics, Recreation, Physical and Health Education (Chicago: The Athletic Institute, Inc., 1946), p. 84.

and free or open periods for general swimming for all to enjoy.

Swimming pools are designed in a variety of sizes and shapes, but for practical reasons and operating efficiency the rectangular shaped pool is considered the best. For instructional purposes, it offers a maximum of space and uniformity. For competitive swimming, it offers uniform lanes and flat walls for turning. Oval shaped or other irregular shaped pools offer much in aesthetic relationships, but are greatly limited for instructional and competitive purposes.

Basic pool dimensions and construction suggestions are offered by the National Conference on Facilities for Athletics, Recreation, Physical and Health Education:

> Length: The minimum length to meet interscholastic and intercollegiate regulations is 75 feet. A minimum length of 75 feet is recommended. The distance for competitive courses has waved between (meters) and (yards) for many years. A 25 or 50 meter pool can be adapted to meet both conditions. The inside length of a swimming pool should always be a fraction of an inch over the stated distance designated. The 75 foot pool is usually constructed 75' 1" long.
> Width: A minimum of 35 feet is recommended. Pool widths should be in multiples of 7 feet. American and international swimming rules require that swimmers' lanes be 7 feet in width.
> Pool deck of indoor pool: The recommended minimum width of the deck is 10' on the sides and 20' on the ends. This space is required for land drills, swimming starts, the movement of swimmers around the pool during teaching sessions, and to accommodate peak loads of swimmers during mass recreation swims.
> Contour of bottom of pool: The minimum depth of the pool at the shallow end should be three feet when the closed system of recirculation of water is used and three feet 6 inches when the open system is used.

For recreation use and teaching purposes, much shallow water area is desired. When a pool is to be used principally for this purpose, it is recommended that the bottom of the pool should slope from a depth of three feet at the shallow end to a depth of 4' 6" at a distance 40' from the shallow end. At this point the slope of the bottom of the pool drops in the next 10 feet to the depth of the diving area. The bottom of the pool in the diving area for a distance of 25 feet slopes with a pitch of 3 inches in 10 feet to the deep end of the pool. An alternate plan for pool bottom contour is to have the depth increase from 3 feet in the shallow end by a gradual slope of one foot for each fifteen feet for a distance of 40 feet. In the next 10 feet the bottom slopes gradually to the depth of the diving area.

Buoy marker: It is recommended that where the change in contour of the bottom marks the change from shallow to deep water that a sturdy, removable buoy marker be placed across the pool, from side to side.

Depth of diving area: A minimum depth of 10 feet is recommended in the diving area if the one meter board only is to be used. A minimum depth of 12 feet is recommended if the three meter board is to be used.

Diving board: Diving boards located in the deep end of the pool should be 15' apart, allowing 10' on each pool side for ample protection for the diver. The top front edge of the one meter board should be one meter above the water level of the pool. The slope of the board should be 2 degrees to 2½ degrees upward. The board must be at least 14' and preferably 16' in length and project 5' or more over the edge of the pool. An adjustable fulcrum with the provision for locking in place is desirable. There should be at least 12' of unobstructed space above the top of the diving board.

Suggestions:

(a) The low board should be so erected that it can be rotated upward and backward to avoid obstructing the finish line for competitive races or other activities.

(b) The permanency of pool markings depends on the material used in construction. In the indoor as well as in some outdoor pools, depth markings are set in tile or other material, on top of the pool coping to be read as you face the pool, and on the sides of the pool wall facing the water surface above the overflow gutters at 3', 5', and 10' depths. Letters

or numerals should be of legible heighth, 4" to 6" and 1" in width of contrasting color to the pool coping or side wall. The words "Shallow" and "Deep" should be located at the respective ends of the pool and on both sides of the pool wall.

(c) Lane markings should be in contrasting color, preferably of the same material as the pool lining. A 7 foot lane is official. The lane line should mark the center of the lane. It should be 10" wide on the bottom of the pool starting from 4' from one end of the pool and terminating 4' from the other end with a 1' cross mark 7' from each end of the pool.

The indoor pool may be constructed so that it is supported by the building construction or it may be supported on the ground. Usually, the indoor pool supported by building construction is a welded steel tank, suspended by 8 "I-beam" supports and girders. All piping passes through the steel shell and is welded in place. A 2" layer of concrete is applied to the inside as a lining base for the tile which forms the inside of the pool. The entire concrete surface should be water-proofed to prevent excess water getting behind the lining. It is customary to coat the outside of pools built this way to prevent "sweating". However, it is a good precaution to see that all adjacent flooring and wall space is water-proofed because some condensation usually takes place. This is to protect the floor from moisture absorption.

Service tunnel: To provide space for servicing facilities it is usually the practice to provide a tunnel completely surrounding the pool beneath the pool deck. This tunnel should be not less than 4 feet by 6 feet and should provide access to all piping and electrical equipment below the pool deck and floor.

Drinking fountains--wall cuspidors: In the indoor pool, recessed drinking fountains and wall cuspidors should be provided at each end of the pool. They should be of different colors.

Underwater lighting: Underwater or submarine lighting adds materially to the decorative effect produced by lighting both the indoor and outdoor swimming pools. The type of light that is set in behind a heavy sheet of glass, permanently set into the pool wall in a non-corrosive metal frame, is recommended. It is serviced from the tunnel surrounding the pool. The lights are usually spaced 10' apart 3' below the water level. Banks of lights may be

CHAPTER III

THE INDOOR SWIMMING POOL

In dealing with indoor pools or natatorium buildings, certain factors must be considered for efficient operation and ease in maintenance. The following suggestions and recommendations should aid school authorities when considering the building of a swimming pool.

The indoor swimming pool should always be constructed so as to facilitate the physical education and recreation programs. It should be designed as a self-sustaining unit, capable of easy access without disturbing the rest of the building. All heating, ventilating, and lighting systems should also be able to be used separately. Spectator toilets and a cloakroom should be available to those not participating. Entrance and exit doors should be off the pool deck so that no person enters the pool proper unless he is an actual participant.

All lighting in the swimming pool should be evenly spaced to eliminate glare and shadowing. All lights should be vapor-proofed and accessible for easy servicing. Recessed fixtures with protective shields are recommended. If underwater lighting is used, it should be used only on

the sides; never at the ends of the pool. Control switches for all lighting should be on a central switchboard, preferably in the office of the instructor. It is suggested that lights be either individually controlled or in banks for added effects during exhibitions or special events. Electrical outlets should be distributed in the pool proper for special lighting, public address systems, cleaning agents, warning signals, and clocks. A warning light should remain lighted continually for protective purposes in case a person should wander into the pool after closing hours. It is recommended that an expert in the field of lighting or electrical engineering be consulted for all details.

Water temperature for large group swimming should range from 75 to 80 degrees Fahrenheit. For class instruction and younger groups, the temperature should range three to five degrees higher. For corrective work and for beginners the temperature range should be 82 to 86 degrees Fahrenheit. For competitive swimming and diving cooler temperatures are recommended; about 70 degrees. Air temperature in the pool should be from three to five degrees warmer than the water temperature. The use of thermostatic controls to heat the water is a desirable feature. Frequent checking with dry bulb thermometers to maintain the temperature desired is an important item for the maintenance man. If forced air is used for ventilation, precautions should be taken to keep a direct draft off the swimmers. Louvered

vents that can be regulated are advisable. All fittings should be of a non-corrosive metal to prevent rusting.

A major problem in the construction and operation of a swimming pool will be condensation on the ceiling and the walls. It is recommended that a double roof with an air space in between be installed to help overcome this problem. The ceiling should be insulated with a quality brand insulating material. If possible, the air space between the two roofs should be heated. A further aid in cutting down on condensation would be the installation of acoustical tiling on the ceiling. It is recommended that ceilings be a minimum of twenty-two feet above the water level, and that acoustical tiling extend from the ceiling down all walls to a height of five feet above the pool deck. From this level down to the deck, a glazed or vitreous brick is the suggested material to be used. If windows are to be installed, it is recommended that a southern exposure be used which will provide a minimum of glare. The use of double panes of glass, hermatically sealed, is suggested as the most feasable method of window construction.

The color scheme used in the pool is important to both participants and spectators. A contrasting scheme of light, pastel shades will offer the least amount of glare. The most practical color for the pool bottom and pool walls is white, with black lane line markings. A non-peeling, rubber based paint is suggested for all painting purposes.

It is recommended that a spectator gallery, separate from the pool room proper, run parallel to the length of the pool. All seats should have an unobstructed view of the entire swimming pool. It is advisable to install permanent bleachers of a light durable material that is smooth and non-corrosive.

An instructor's office, located at the deep end of the pool, with a shatter-proof plate glass window is recommended. A clear, unobstructed view of the entire swimming pool should be offered by this office. The office should contain a first-aid room, private toilet and shower room, a dressing room, and a desk and filing cabinets for the convenience of the instructor. A protective screen should be installed in front of the window to protect both the window and the swimmers.

One important item is an equipment or storage room large enough to contain all necessary cleaning equipment as well as all swimming pool equipment. It is recommended that this room adjoin the instructor's office but with a separate, recessed doorway. A large service sink for general cleaning purposes should be included in the construction.

The National Conference on Facilities for Athletics, Recreation, Physical and Health Education list some common errors found in the construction, use, and maintenance of indoor swimming pools:

1. Planning one pool by copying another.
2. Not giving the architect the education and recreation needs and specifications, and not using available services of specialists.
3. Odd sized pools or pools of impractical shape or design.
4. Failure to provide adequate depth for diving or providing too much.
5. Failure to provide ample clearance of at least 12' or preferably more, above each diving board.
6. Confusing swimmers' lanes and lines.
7. Lanes too narrow.
8. Pools' decks too narrow or not entirely around the pool.
9. Steps and ladders placed in end of pool wall.
10. Steps and ladders projecting into pool at ends or sides.
11. No office for instructor.
12. No provision for spectators or one with poor sight lines.
13. Non-standard heights for diving boards.
14. No acoustical treatment for walls and ceilings.
15. Permitting persons to use pool without recent medical examination by a competent physician.
16. Allowing swimmers to enter pool area without having had a thorough cleansing bath in the nude.
17. Inadequate swimmer inspection.
18. Inadequate instructions to pool users.
19. Failure to keep pool and locker rooms clean.
20. Failure to maintain recirculation and disinfection systems running continuously day and night.
21. Failure to scrub and thoroughly disinfect deck daily.
22. Inadequate number or faulty location of service units.[7]

Used in a dual capacity, this facility will continue to provide sport and recreation for all ages and all persons in the community, if the pool is properly constructed, clean, attractive and efficient to operate.[8]

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[7] Ibid., p. 99.

[8] Ibid., p. 84.

Another addition to the basic program is a series of life saving and water safety courses that should be interspersed into the adult area at least twice a year. Lack of inclusion of this item in the other list is because of the public service it renders. A special set of objectives for this area of aquatics is recommended by Charles E. Silvia:

> Every teacher of water safety should have a clear concept of what he hopes to achieve in his teaching. Therefore, he should have in mind several key objectives which will serve to guide his thinking and place his teaching on a high level of effectiveness.
>
> Effective teaching will cause the student to realize the need for:
>
> 1. Correct knowledge about the hazards of aquatic participation and how to avoid and prevent accidents.
> 2. Comprehensive training for everyone in swimming and diving.
> 3. A responsible attitude toward the promotion of safe conduct habits.
> 4. Correct skills in the use of small craft.
> 5. Comprehensive training in lifesaving and water-safety techniques.[10]

There are two excellent sources of information on swimming and diving; the YMCA and the American Red Cross programs. Either of these programs, alone or in combination, offer excellent suggestions and ideas to follow in teaching swimming.

A common and practical procedure to follow in beginning instruction is the ten point program adapted and used by the Joliet, Illinois, YMCA.

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[10]Charles E. Silvia, Lifesaving and Water Safety Instruction (New York: Association Press, 1958), p. 17.

1. Orientation to the pool, the class, locker and shower room procedures, the instructor, and what to expect from the class.

2. Pool entry. How to get in and out of the pool. How to adjust to the water. An explanation of the water temperature in relation to the air temperature would come in handy at this point.

3. Determining fear of the students. This is done by having them grip the side of the pool and put their faces in the water. Those that refuse will have to have more individual instruction.

4. The float. An explanation and demonstration of the various types of floats. Have all students try these.

5. The recovery. From any floating position, the student returns to his feet with a minimum of difficulty.

6. The glide. Usually done with the buddy system at first. One student, gliding on the surface, being pulled hand in hand by a buddy. Reverse procedure to return to original position.

7. Introducing the kick. The flutter kick is referred to at this time. Frequent use of land drills is applicable for this skill. Emphasize power rather than form.

8. Introduction of the stroke. The straight arm, overhead crawl stroke is the easiest to begin with. Again, frequent use of land drills will aid in learning.

9. Combine kick with stroke. Here we refer to number seven and eight. Form is not of immediate importance. Attempt to develop the rhythm required to combine these two skills.

10. Introduction of breathing, and combine with the number listed above. This is extremely difficult. It is, however, important to bring this skill into focus at this time. The student has reached a static point in his instruction, and without the ability to breathe, can progress no further.[11]

As a conclusion to this phase of instruction a simple testing program can be used to effectively rate the students as to their progress. Upon completion of the test, the student would advance to a new class. These classes could be broken down into five headings: beginner, advanced beginner, intermediate, advanced intermediate, and superior. As a student successfully passes the requirements for his particular class he is promoted to the one above. With each advance in rating the skills become more and more difficult. Upon completion of the five classes, a student should emerge a competent swimmer.

Because of the impracticality of including a complete unit of instruction, due to variances in size of program, size of school, size of class, and the training

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[11] A Ten Point Program for Beginning Swimming Instruction, Adapted and developed by the professional staff of the Physical Education Department (Joliet, Illinois: YMCA).

of the instructor, the writer will include, as a sample, one phase of the instructional unit--the flutter kick.

The Flutter Kick

A. The kick starts from the hip and gradually undulates down the leg.

   1. At the top of the kick, the knee is straight and the foot is both pointed and pigeon-toed.
   2. As the thigh starts to move downward, the knee bends so as to cock the lower leg for the power snap which is to follow.
   3. When the knee reaches its lowest point, the thigh starts back up again immediately and the knee begins to straighten. The fact that the thigh is rising while the lower leg is still moving downward causes an extra strong power snap with the lower leg being pivoted about an imaginary axis just above the ankle.
   4. When the knee reaches full extension, the movement is transferred on down to the foot which completes the power snap.
   5. On the recovery, the knee must be kept straight to avoid a retarding turbulence about the lower leg. The leg should not be cocked for the next kick until after the thigh starts to move downward again. This is a very common fault of novice swimmers. The foot is relaxed and loses

its pointed and pigeon-toed position during the recovery.

6. When observed from the rear, the foot may be seen to follow an elliptical path as it moves up and down.

B. There is some controversy as to the relative values of the up-kick and the down-kick.

1. The down-kick seems to be easier to concentrate on and probably produces the greater portion of the leg drive under actual swimming conditions.
2. By emphasizing the up-kick during practice, considerable force may be derived, but this is at the expense of a great deal of energy. It does not seem likely that the average swimmer should devote this much energy to his leg kick.
3. As a practice device, have the swimmers stress the up-kick for added conditioning benefits.

C. The optimal amount of knee bend depends upon the individual.

1. Swimmers with relatively inflexible ankles should use proportionately more knee bend.
2. Swimmers with extremely flexible ankles should use very little knee bend.

D. The depth of the kick should be limited so that the legs stay within the cone described as having its apex at the top of the head and its surface encircling

the hips. Leg movement outside of this cone will cause an unnecessary drag.

E. The kick should be de-emphasized in distance swimming.

1. The large leg muscles produce great quantities of fatigue products when taxed to their limit for any long period of time. If these fatigue products are allowed to flood the body, they will slow the swimmer without having had his kick give him a proportional propulsive benefit.

2. It is absolutely necessary for distance swims to emphasize leg conditioning in practice.

F. All useful crawl-stroke kicks (flutter kicks) may be described as variations of the standard 4 beat or 6 beat kick.[12]

Although instruction is the basis for any aquatic program, a variation of class periods should include a few recreational games and skills. This will aid tremendously in helping to overcome boredom of routine inherent in a skills course. Relays, games, water sports, diving, and free play will dispel the monotony if interspersed discreetly into the regular schedule. A few ideas and suggestions that may appeal to the instructor follow:

> Swimming is probably the most beneficial sport in use today. Children and adults, alike,

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[12] Lesson Plan on Flutter Kick, Developed through a study on swimming by the professional staff of the Physical Education Department (Joliet, Illinois: YMCA).

derive an experience which enriches, not only physically, but mentally as well. More people participate in swimming than any other sport activity. Most "Y's", camps, and boys clubs consider their water program the most important activity.

Because of the emphasis based on this water sport, more variety is needed in many aquatic programs. Instruction and practice can become monotonous regardless of the ability and appeal of the instructor. An activity that is different which could excite the students and create high interest, could be a tremendous asset.

Since basketball is a game which is comparatively simple to understand, enjoyable to play, and provides self satisfaction, why not combine swimming and basketball into one activity? It is an excellent opportunity for all to participate, because it puts all swimmers (regardless of ability) practically on the same plane. Water basketball will provide motivation and stimulation for the less advanced swimmer. Instructors can use this activity as a change of pace between instruction periods.[13]

In his book, Fun in the Water, Thomas Cureton, Jr. presents the following water activities:

Tag is played between two sides, one or more players being designated "It". They try to tag the others as they swim from place to place, climb onto and dive from the deck, rafts, boards, etc. Bounds should be clearly stated at the beginning of the game. A "caught" player joins the "Its" and helps catch the others until all are caught.

Ball Tag. The one who is "It" tries to hit another player with a ball who in turn becomes "It". This may be played in shallow or deep water, depending upon the ability of the swimmers.

Water Pom Pom Pullaway. One swimmer who is "It" takes position in the water in the middle of the tank. Upon the blow of the whistle every swimmer is given five seconds in which to get into the water and swim for the other side. Any player caught by touching on the head stays in the water and tries to help

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[13]Moe Tener, "Water Basketball," Coach and Athlete. Vol. XXV (December, 1962), p. 5.

> catch the others. The game continues to see who can be the last to be caught.
> Color Tag is a good game for beginners. Two lines face each other about five feet apart in the center of the playing area. One side is designated "red" and the other "blue", or any other appropriate colors. It is better to have distinguishing caps or suits. The referee suddenly calls "red" or "blue", upon which the color called tries to catch the others before they reach their goal. Instead of calling, the referee may hold up the color to distinguish the side that is "It".
> Balloon Ball. Divide the group into equal numbers. One team is massed around an inflated balloon in the water. The other team is lined up on the sides of the pool. At a given command or signal the attacking team tries to burst the balloon. The defenders try to protect the balloon. Each team is given a three-minute period to break the balloon. The team which breaks the balloon in the shortest time wins.
> Scramble Ball is a game like water polo except simplified so that there are practically no rules. This is usually played in shallow water by non-swimmers or young swimmers. Any method is allowed to progress with the ball to the opponent's goal by running, throwing, or passing. A ball thrown over the opponent's goal counts a score.[14]

This is just a small list of games or sports that could be injected into the program to provide clean, wholesome fun for the participants. This will create more interest and enthusiasm in the overall program as well as to develop the stamina and ability of each participant. Through these games, the fears of most students will be reduced, while they acquire the necessary confidence. Any games or stunts that individual instructors can think up or vary from other games would be a welcome relief to

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[14]Thomas Kirk Cureton, Jr., Fun in the Water (New York: Association Press, 1960), pp. 84-86.

the students. This is an extremely important phase of the instructional program. The interest of the students should be maintained in order to attain a maximum of proficiency in the skill of swimming.

CHAPTER V

SUMMARY

In summarizing the suggested aquatic guide, the writer feels that with this information available, a school could get off to a satisfactory start in its swimming program. As new ideas and theories come into being, changes and adjustments will be made. It is hoped that the changes will be forward looking and progressive in nature. Many institutions have gone years and years without making changes in their aquatic programs and do not suffer any negligible attendance differences. Others, however, become static in services offered, and as a result, suffer both physically and in reputation. Static programs need to adjust to new and current ideas to renew and invigorate their programs. As a modern facility enters the community it will be extremely popular, and undoubtedly will not suffer from lack of use. With time, the newness will wear off, and it is then that the program will become increasingly more important. This is the crucial period of any program, aquatic or otherwise. It is for this reason that the leadership of the program should be willing to try new ideas and theories.

Another factor that should be stressed is safety. Safety in aquatics is a matter of seconds and inches. An instructor may turn his head for a few seconds and turn around to find a child dead or near death. It is the intent of the writer to impress upon readers the necessity of the highest degree of safety. In their book, Aquatics Handbook, Gabrielsen, Spears, and Gabrielsen offer a list of facts pertinent to drowning. This list is presented in Appendix D, pages 38-40.

In any aquatic program the use of volunteer leaders and instructors can be utilized to their maximum capacity. Local Fire Departments, Police Departments, and Police Rescue Squadrons through demonstrations, lectures, and exhibitions are an invaluable resource to an aquatics instructor. The use of aspirators, inhalators, oxygen masks, and all forms of resuscitation should be made available to all students, not just those in lifesaving classes. There may be a skin and scuba diving club in the area that will be happy to teach this new and exciting phase of aquatics. Red Cross experts in small craft or boating will assist in the program. A physician, interested in the therapeutic values of swimming for the disabled or handicapped, will be willing to assist in setting up a special program for those affected with disabling or crippling diseases. This is only a partial list of the many uses of volunteer leaders and it is hoped that each community will

be screened for these specialists in their particular fields to aid and assist in the overall aquatic program.

In conclusion, Gabrielsen, Spears, and Gabrielsen is again cited:

> The ability to swim is basic to participation in all aquatic activities, but just to know how to swim is not enough. Knowledge and understanding of both the activity and of the circumstances under which it is conducted are equally important. Thus it is the responsibility of the aquatics instructor to include as much information as possible about the many different aquatic activities.[15]

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[15]M. Alexander Gabrielsen, Betty Spears, and B. W. Gabrielsen, Aquatics Handbook (Englewood Cliffs, N. J.: Prentice-Hall, Inc., 1960), p. v.

Suggested Program--6 Periods of 50 Minutes Per Day

Time	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
8:30 to 9:20	Phys. Educ.	Phys. Educ.	Phys. Educ.	Phys. Educ.	Phys. Educ.	Elem. Instr.	
9:30 to 10:20	Class Instr.	Class Instr.	Class Instr.	Class Instr.	Class Instr.	Elem. Instr.	
10:30 to 11:20	Class Instr.	Class Instr.	Class Instr.	Class Instr.	Class Instr.	Jr.High Instr.	
11:30 to 12:20	Class Instr.	Class Instr.	Class Instr.	Class Instr.	Class Instr.	Jr.High Instr.	
1:30 to 2:20	Class Instr.	Class Instr.	Class Instr.	Class Instr.	Class Instr.	Varsity Swim	Family Rec.Swim
2:30 to 3:20	Class Instr.	Class Instr.	Class Instr.	Class Instr.	Class Instr.	Meets (in season)	Family Rec.Swim
3:30 to 5:00	Practice	Practice	Practice	Practice	Practice		
6:00 to 7:00	Adult Instr.	Lifesvg. Instr.	Adult Instr.	Lifesvg. Instr.	Adult Rec.Swim	Family Rec.Swim	
7:00 to 8:00	Adult Rec.Swim	Adult Rec.Swim	Adult Rec.Swim	Adult Rec.Swim	Adult Rec.Swim	Family Rec.Swim	

Suggested Program--7 Periods of 45 Minutes Per Day

Time	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
8:45 to 9:30	Phys. Educ.	Phys. Educ.	Phys. Educ.	Phys. Educ.	Phys. Educ.	East Side Elem. Instr.	
9:30 to 10:15	Phys. Educ.	Phys. Educ.	Phys. Educ.	Phys. Educ.	Phys. Educ.	East Side Elem. Instr.	
10:15 to 11:00	Phys. Educ.	Phys. Educ.	Phys. Educ.	Phys. Educ.	Phys. Educ.	West Side Elem. Instr.	
11:00 to 11:45	Phys. Educ.	Phys. Educ.	Phys. Educ.	Phys. Educ.	Phys. Educ.	West Side Elem. Instr.	
1:00 to 1:45	Phys. Educ.	Phys. Educ.	Phys. Educ.	Phys. Educ.	Phys. Educ.	Jr.High Instr.	Family Rec.Swim
1:45 to 2:30	Phys. Educ.	Phys. Educ.	Phys. Educ.	Phys. Educ.	Phys. Educ.	Varsity Swim	Family Rec.Swim
2:30 to 3:15	Phys. Educ.	Phys. Educ.	Phys. Educ.	Phys. Educ.	Phys. Educ.	Meets (in season)	Fr.-Soph. Co-ed. Rec.Swim
3:15 to 5:00	Practice	Practice	Practice	Practice	Practice		Jr.-Sr. Co-ed. Rec.Swim
7:00 to 8:00	Adult Instr.	Fr.-Soph. Co-ed. Rec.Swim	Adult Instr.	Jr.-Sr. Co-ed. Rec.Swim	Adult Instr.	Family Rec.Swim	
8:00 to 9:00	Adult Rec.Swim	Lifesvg. Instr.	Adult Rec.Swim	Lifesvg. Instr.	Family Rec.Swim	Adult Rec.Swim	

Suggested Program--8 Periods of 40 Minutes Per Day

Time	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
8:30 to 9:10	Phys. Educ.	Phys. Educ.	Phys. Educ.	Phys. Educ.	Phys. Educ.	Elem. Instr.	
9:20 to 10:00	Phys. Educ.	Phys. Educ.	Phys. Educ.	Phys. Educ.	Phys. Educ.	Elem. Instr.	
10:10 to 10:50	Phys. Educ.	Phys. Educ.	Phys. Educ.	Phys. Educ.	Phys. Educ.	Elem. Instr.	
11:00 to 11:40	Phys. Educ.	Phys. Educ.	Phys. Educ.	Phys. Educ.	Phys. Educ.	Elem. Instr.	
11:50 to 12:30	Phys. Educ.	Phys. Educ.	Phys. Educ.	Phys. Educ.	Phys. Educ.	Jr.High Instr.	
12:40 to 1:20	Phys. Educ.	Phys. Educ.	Phys. Educ.	Phys. Educ.	Phys. Educ.	Jr.High Instr.	
1:30 to 2:10	Phys. Educ.	Phys. Educ.	Phys. Educ.	Phys. Educ.	Phys. Educ.	Varsity Swim	Family Rec.Swim
2:20 to 3:00	Phys. Educ.	Phys. Educ.	Phys. Educ.	Phys. Educ.	Phys. Educ.	Meets (in season)	Family Rec.Swim
3:15 to 5:00	Practice	Practice	Practice	Practice	Practice	Special Swim Parties	Special Swim Parties
7:00 to 8:00	Adult Instr.	Jr.-Sr. Co-ed. Splash Party	Adult Instr.	Fr.-Soph. Co-ed. Splash Party	Adult Instr.	Family Rec.Swim	
8:00 to 9:00	Adult Rec.Swim	Lifesvg. Instr.	Adult Rec.Swim	Lifesvg. Instr.	Adult Rec.Swim	Family Rec.Swim	

APPENDIX B

CHART I--UNITED STATES
POPULATION GROWTH, 1900-1950

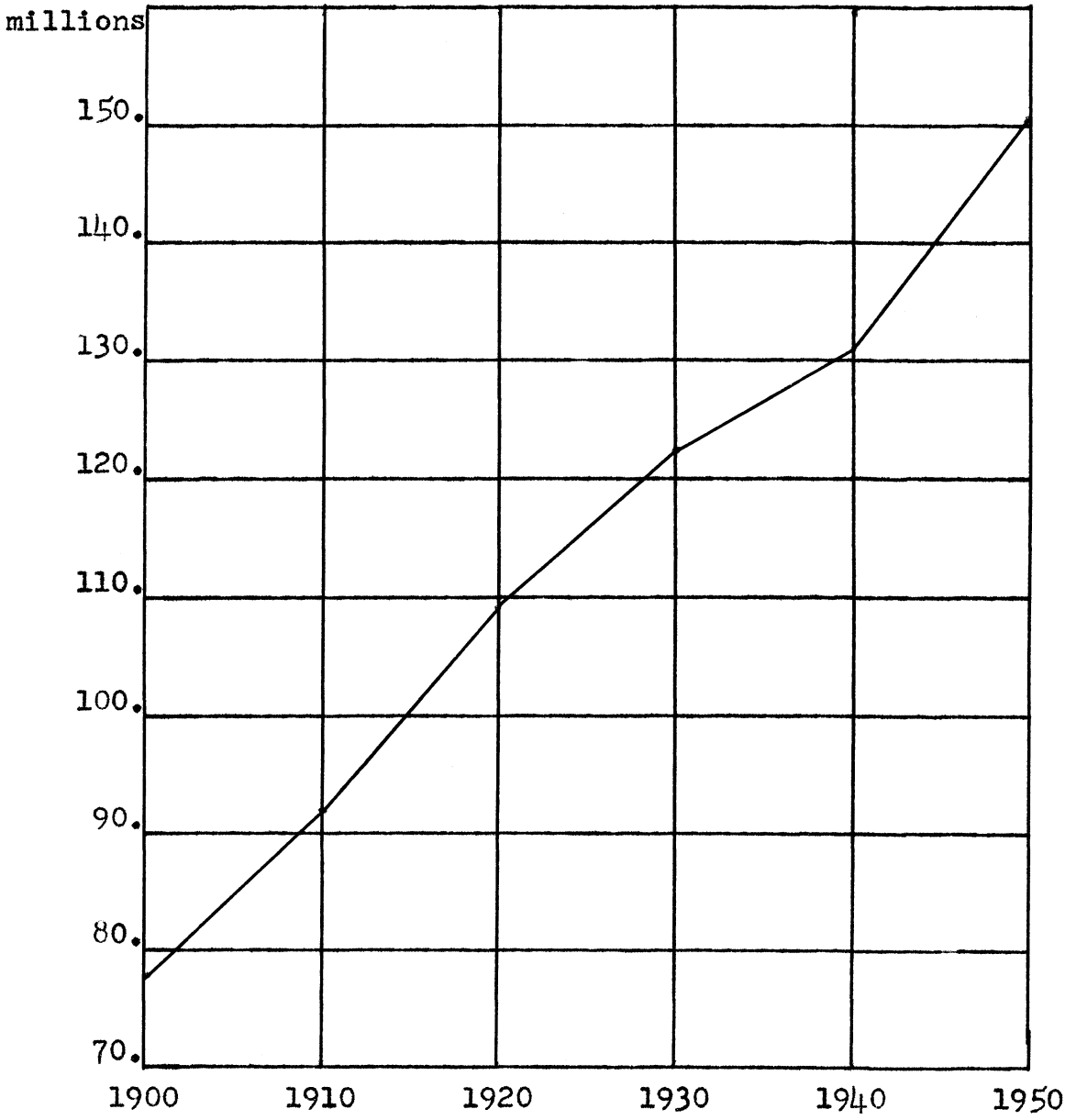
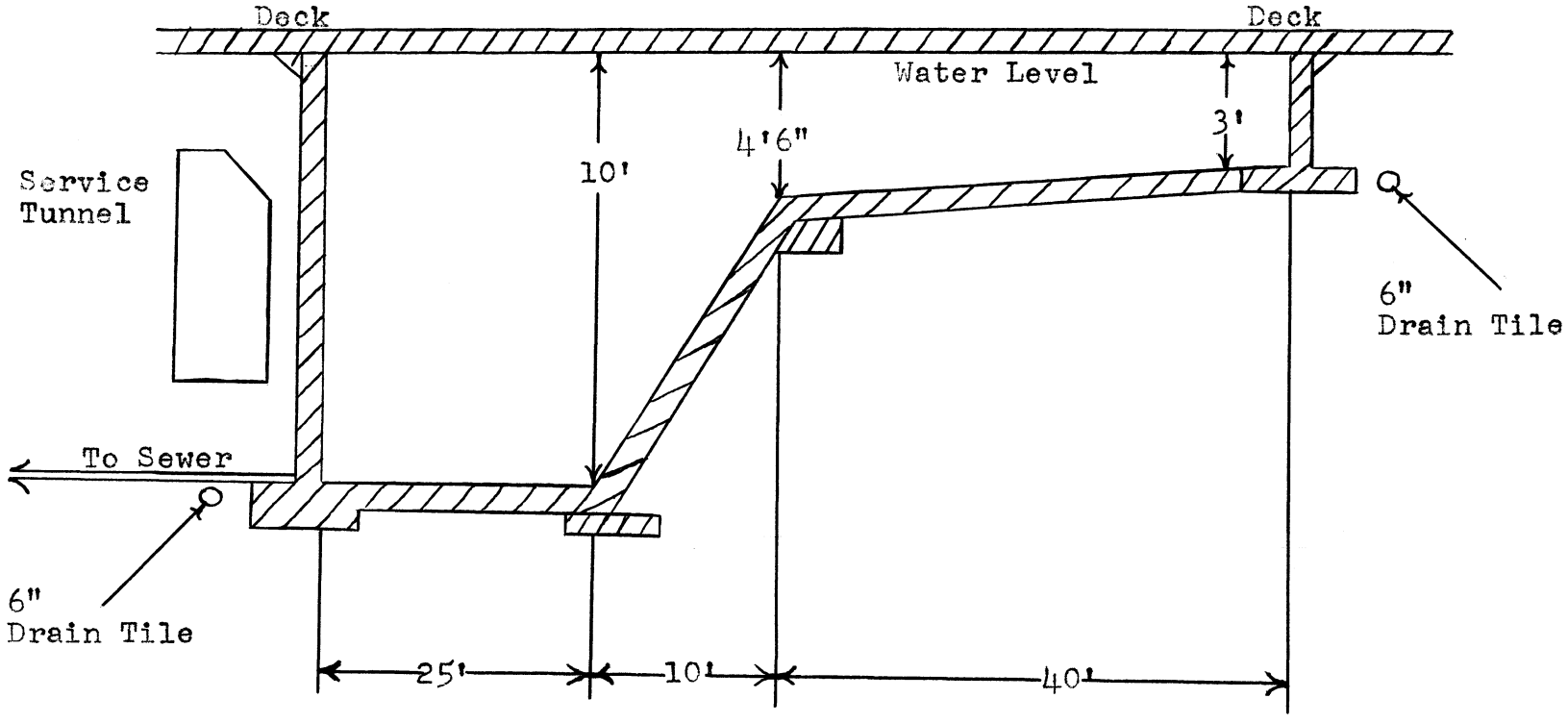


CHART II

DEATHS FROM DROWNING, 1918-1950

Side View--Rectangular Pool



APPENDIX D

FACTS ON DROWNING

Age. It was found that people of all ages drown. The largest number of drownings occurred in the early years, from babyhood to age fifteen, and many of the victims were children under the age of four.

Sex. More males drowned than females. The ratio was approximately 6 to 1. In per cent, the figures were 85 per cent males and 15 per cent females.

States. All states reporting had drownings. The more heavily populated states had the largest number but a lower rate per 100,000 population. The states with smaller populations had fewer drownings but a higher rate per 100,000 population.

Race. The ratio of white persons drowning to non-white is 5.5 to 1; however, in states with a high percentage of Negroes, the proportion is more even, as shown in the findings for Georgia: 56.3 per cent white and 43.8 per cent Negro.

Education. The educational level of the victims was not correlated with the drowning rate.

Health. The facts revealed about the health of the people who drowned showed that most persons were in normal health. However, there were a few cardiac cases, epileptics, and people with mental illness; 9.5 per cent were under the influence of alcohol, and 3.3 per cent were ill in some other way.

Swimming Ability. Most people who drowned were non-swimmers. But some were reported to have had fair, good, or excellent swimming ability.

Swimming Instruction. The findings indicated that the vast majority of people who drowned had never had any swimming instruction.

Dress. The findings revealed that more people drown wearing clothes than wearing bathing suits.

Athletic Background. The study showed that the greater number of people who drowned had never participated in organized athletics of any sort; however, there were some cases of drowning among athletes who had played football, basketball, baseball, and the like, and several who had even been members of swimming teams.

Number in Party. It was revealed that more people who were alone drowned than people who were with someone else, but there were many incidents of drowning when a friend or even a group was present.

Location of Drownings. The lakes of this country are the scenes of more drownings than any other type of body of water. Drownings occurred in twenty-six different places, from bathtubs and slop buckets to oceans. It is significant that only 1.8 per cent of the drownings occurred in swimming pools.

Time of Year, Day and Hour of Drownings. Most drownings occur in June, July, and August. Saturday and Sunday are the days that have the highest drowning rate. The hour of 4:00 p.m. is the time when most drownings occur. However, drownings were reported for every month of the year, every day of the week, and every hour of the day and night.

Condition of Water. It was revealed that more people drowned in calm water than in rough water, but the clarity of the water was not significantly related to accidental drownings.

Temperature of Air and Water. As would be expected, the findings showed that most drownings occurred in the summer months, when the water and air temperatures were high.

Weather Conditions. The findings revealed that most drownings occurred when the weather was clear. But, when cataclysmic disaster struck, floods took the highest toll. The loss of life from drownings in hurricanes was considerably smaller. Older people and the very young were the most frequent victims in such accidents.

Violations. Most drownings occur as a result of violations of good safety procedures. Such practices as going into a small craft when one does not know how to swim, swimming alone or swimming in an area that is not patrolled, or leaving a child unattended near water accounted for over 60 per cent of the accidental drownings. Only 2.2 per cent occurred in

areas patrolled by life guards; 87.4 per cent occurred in unpatrolled areas.

Activity Engaged In. Recreational swimming, fishing, boating, and playing near water were the activities that had the highest incidence rate.

Boating. In drownings associated with boats, the outboard motorboat accounted for more accidents than all other types of boats combined.

Hunting and Fishing. The study revealed that when hunting and fishing were carried on from a boat, drowning accidents did happen when strong winds came up and capsized the boat. Very few drownings occurred to persons hunting from land, while quite a few (8.3 per cent) happened when the victims were fishing from shore or wading.

Assistance in Recovering the Body. The police rescue squads are the most readily accessible agency for aid in accidental drownings. They usually use grappling hooks to recover lost bodies.

Resuscitation Attempts. At the scene of most drownings, there was no person skilled in administering artificial respiration when the victim was first pulled out of the water.

Chief Causes of Drownings. Boats capsizing and people falling out of boats were the chief causes of drownings (24.4 per cent). However, it was alarming to learn that 16.8 per cent of the accidents occurred to young children left unattended near water. In all, there were twenty-two different causes of drownings, indicating that many different circumstances can lead to accidental drowning.[16]

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[16] Ibid., pp. 12-13.

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