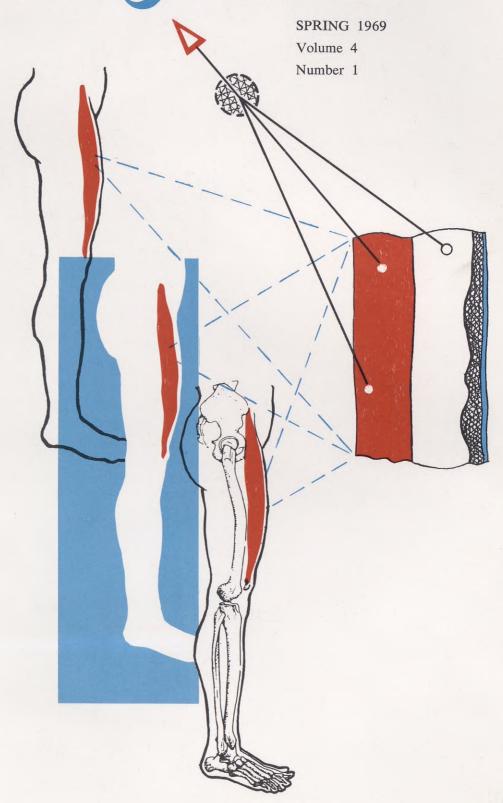
THE OURNAL of the National Athletic Trainers Association



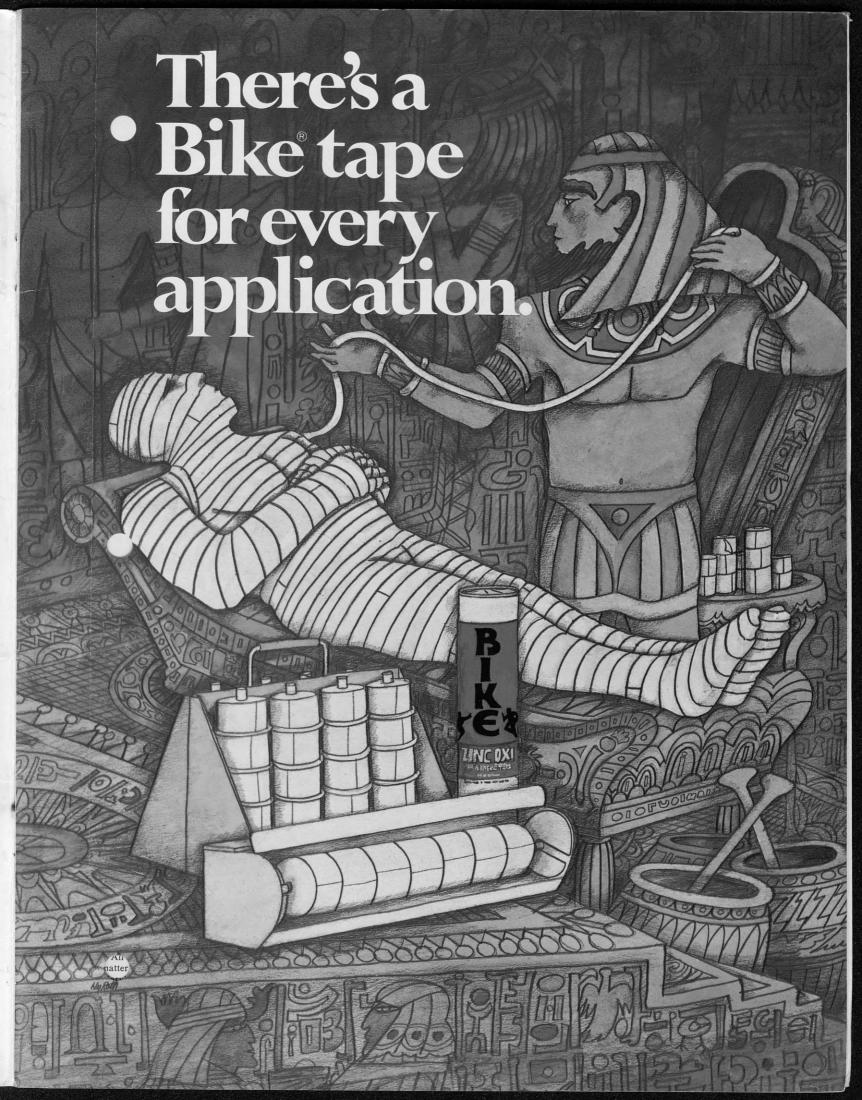


Specifically designed for prevention and care of athletic injuries, ORTHALETIC Trainer's Tape features strong backing cloth, water-resistant finish, high-quality adhesive, uniformly applied and bonded, and special "easy-tension" winding. One TEAM PACK contains 32 rolls of 15 yards—enough to strap the ankles of 32 men. And the compact case

is easy to handle at home and on the road.

Other special-purpose tapes include: **BayHesive**® for high tensile strength and **BayConomy**,® a lighter weight adhesive tape.

PARKE-DAVIS



Biketape esi tter.

Get the best for your team get Bike! It unwinds easy . . . straps fast . . . holds secure. Now Bike, with the new plastic core, is better than ever.



BIKE SCHOOL PACK TAPE. Bike School Pack tape does it better three ways: Saves you money—as much as $12\frac{1}{2}\%$ off the cost of an equivalent amount of tape in individual 12''x 10-yd. rolls. Saves you time—tapes up to 18% faster by actual test. Saves you tape new plastic core lets you use all the tapeeven the last inch.

FORMULA 87 SCHOOL PACK TAPE 6115 1½" x 15-yd. 3558 2" x 15-yd.

ZINC OXIDE SCHOOL PACK TAPE 7121 Regular $1\frac{1}{2}$ " x 15-yd. 2965 Porous $1\frac{1}{2}$ " x 15-yd. 7341 Regular 2" x 15-yd.

GENERAL PURPOSE SCHOOL PACK TAPE 1895 Regular 1½" x 15-yd. 2787 Porous 1½" x 15-yd. 3563 Regular 2" x 15-yd.

BIKE TRAINER'S TAPE. You can order Bike Trainer's tapes in individual rolls, too-same easy unwind, fast application, superior pro-

(A) FORMULA 87 TAPE. Greatest strength for maximum support. Exclusive new crushproof plastic core. 12" x 10-yd. roll.

1515 1" Cuts. 1598 1½" Cuts. 2028 2" Cuts.

(B) ZINC OXIDE TAPE. Most popular grade. Regular weight, high tensile strength. Exclusive new crushproof plastic core for easier unwind, complete release of all the tape. 12" x 10-yd. roll.

2109 ½" Regular 2286 2" F 2174 1" Regular 2267 3" F 2182 1½" Regular 7264 1½" 3036 R-14 Assortment (Two each 1" and 2", four 1½"). 2286 2" Regular 2267 3" Regular 7264 1½" Porous

(C) GENERAL PURPOSE TAPE. The most economical medium weight tape. Same highgrade adhesive mass as Zinc Oxide and Formula 87. Exclusive crushproof plastic core. 12" x 10-yd. roll.

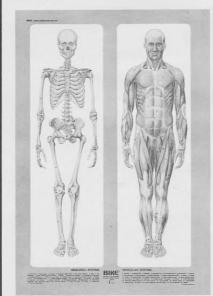
1018 ½" Regular 1704 1" Regular 2506 2" Regular 7532 11/2" Porous 2426 11/2" Regular

(D) ELASTIC TAPE. Maximum strength and stretch provides support for any flexible joint. Flesh-colored. 12" x 5-yd. roll. 2975 2" Cuts. 1436 3" Cuts. 3407 4" Cuts.

1969 BIKE TRAINER'S TAPE

A big 3 ft. x 2 ft. full color, professional anatomy chart. Free with your school order for 5 School Packs or 60 individual rolls of Bike tape, any grade. See our Catalogue or Price List for prices

and the complete line of Bike Athletic





specialists in the prevention and care of athletic injuries.



of the National Athletic Trainers Association

SPRING 1969

Volume Four, Number One

CONTENTS

Using Analgesic Balm on Athletic Injuries — Clint Thompson
Does the National Athletic Trainer's Association Need a Certification Examination — J. Lindsey McLean, Jr
Recent Athletic Training Literature12
Bits and Pieces — Clyde Stretch
Calendar
National Notes — Jack Rockwell

DIRECTORS

- District 1—FRITZ MASSMANN
 Boston College
 Chestnut Hill, Mass. 02167
- District 2—Francis J. Sheridan Lafayette College Easton, Pa. 18042
- District 3—Joseph Gieck University of Virginia Charlottesville, Va. 22903
- District 4—ALAN HART Ohio University Athens, Ohio 45701
- District 5—BRUCE MELIN
 Washington University
 St. Louis, Mo. 63130
- District 6—BILLY PICKARD

 Texas A & M University

 College Station, Texas 77843
- District 7—Gary Delforge, Chairman University of Arizona Tucson, Arizona 85721

- District 8—RICHARD VANDERVOORT
 Washington State University
 Pullman, Wash. 99163
- District 9—Chris Patrick, Jr.
 University of Kentucky
 Lexington, Ky.
- District 10—Mert Prophet, Head Trainer Toronto Argonauts Football Club Totronto, Ontario, Canada

Exhibits Chairman:

Warren Ariail New Orleans Saints Football Club New Orleans, La. 70130

Executive Secretary:

JACK ROCKWELL 3315 South Street Lafayette, Indiana 47904

Asst. Executive Secretary:

Tom Healion Indiana University Bloomington, Ind. 47401

The Journal of the National Athletic Trainers Association is published quarterly at 3315 South St., Lafayette, Indiana 47904. Subscription charge to members: \$1.00 per year.

Editor: Marvin Roberson. Assistant Editor: CLYDE STRETCH, Michigan State University. Advertising Manager: Ellis Murphy, 600 S. Michigan Avenue, Chicago, Illinois 60605.

Second class postage paid at Lafayette, Indiana 47904.

All communications concerning editorial matter in *The Journal* should be directed to Marvin Roberson, 165 Smith Field House, Brigham Young University, Provo, Utah 84601.

The views and opinions expressed in the

articles in the Journal of the National Athletic Trainers Association are not necessarily the views or opinions of the National Athletic Trainers Association.

The NATA Journal editors welcome the submission of articles which may be of interest to persons engaged in or concerned with the progress of the athletic training profession. The following suggestions are offered to those submitting articles for consideration:

- 1. All manuscripts should be typewritten, double-spaced, on ordinary typing paper, 1500-2000 words.
 - 2. When references are made to other pub-

lished works, include superscript numerals and appropriate footnotes giving author, title of book or article, periodical or volume number, pages, and date of publication.

- 3. Photographs must be black-and-white prints, preferably on glossy paper. Graphs, charts, or figures should be clearly drawn on white paper, in a form which will be readable when reduced for publication.
- 4. It is the understanding of *the Journal* editors that any manuscripts submitted will not have been published previously.

Unused manuscripts will be returned when accompanied by a stamped, self-addressed envelope. Please address contributions to the Editor.

ER SITE

Using Analgesic Balm on Athletic Injuries

Clint Thompson Assistant Trainer Michigan State University

The role of the athletic trainer is ancient but the profession of athletic training is relatively recent. Due to the evolution of the profession in a manner that was perhaps unavoidable, many empirical practices are present in the care and treatment of athletic injuries. It has been only recently that any attempt to standardize these procedures has been made.

The education that a physical therapist receives is a giant step in the right direction for an athletic trainer in an attempt to learn the basis for treating and caring for injury. The point here is not to say that the empirical measure are necessarily unsound or that one should be a physical therapist to be effective; but that the emphasis should be put on the fact that a great many trainers do not know whether or not a certain treatment or procedure has a sound physiological basis or just exactly what is happening to the athlete when treatment is carried out. They have only their empirical education to guide them. Not unless the trainer has had some physical therapy education or has taken it upon himself to spend a lot of time filling the knowledge gap in his undergraduate education does he know when certain procedures are physiologically beneficial or whether certain procedures are better than others under given circumstances.

With the preceding thoughts as a sort of motivation, the examination of one example where the enlightenment of the training profession, and others concerned, would clarify a procedure that is extensively used throughout the athletic train-

ing profession and in athletics in general.

Delving into the different beliefs and suppositions allied with the use of the analgesic balm pack, the general opinion is that the application of an analgesic pack is the same as applying heat to the area. As anyone who is familiar with the treatment of recent musculo-skeletal injuries knows, the first modes of treatment are pressure, cold and elevation. Certainly heat is contraindicated. Therefore, under these assumptions, it would be most unwise to apply an analgesic pack covering the injured area.

But there are those who do advocate the application of an analgesic balm pack to an injury as soon as thirty minutes after the injury and certainly in most cases it is an overnight procedure. Evidently, the severity of the injury is not necessarily a contributing factor in the decision to apply a pack.

NO CLEAR-CUT ANSWER

Which theory is valid? Is one application more detrimental or beneficial to the injury than the other? Not many athletic trainers can back up their answers. In fact, a sampling of medical doctors will not give a clue one way or the other. The outstanding fact is that there does not appear to be a clear-cut answer available.

The question was so intriguing that a questionnaire was sent to 207 athletic team physicians in the professional, collegiate, and high school ranks in an effort to gather information concerning the proper use of the pack in athletics. Letters of explanation were sent along with self-addressed postcards with three questions to be answered. The letter stated that there was a great deal of confusion present with regard to the proper use of the analgesic pack in athletics. A 49.7% return of the postcards was experienced. The questions required only a Yes or No answer, and were as follows:

- 1) When treating a strain of the biceps femoris with an analgesic balm pack, does the pack have a vasodilating affect on the arterial vessels of the concerned muscle? (48.4%-yes; 51.6%-no)
- 2) Would you give the same answer when the injury involves the ligamental area of a moderately sprained ankle or knee? (70.9%-yes; 29.1%-no)
- 3) Do you advocate the wearing of such a pack during a workout or during competition? (25.8%yes; 74.2% no)

Seven physicians stated that they did not use rubefacients at all, although they did answer the questions. Eleven physicians mentioned the psychological aspects of treating with the analgesic pack and the eleven seemed to agree that perhaps

this was the biggest reason for using the packs. One physician stated that "some of the value is psychological and would be lost if the treatment were de-odorized."

As for the results of the questionnaire, many assumptions can be drawn; but the outstanding fact that appears is that there seems to be a great deal of misinterpretation of the known facts—even among the medical doctors who serve as team physicians—with reference to the use and function of an analgesic pack. The response to the first question of the questionnaire was split nearly down the middle—51% no and 49% yes.

What does an analgesic pack do? There are at least three probable ways by which a pack may have an effect on an injury, depending upon the ingredients of the balm: 1) the relief of pain by counter-irritation; 2) the possible vasodilation of the arterial vessels in the injured area (which is very desirable in the healing process but undesirable in the immediate treatment of the injury); and 3) the effect produced by absorbing an analgesic through the skin to act upon the injured area.

The theory of counterirritation has been studied and discussed (4)(9). Skeletal muscle injury or visceral abnormality stimulates the pain fibers in the affected area. The stimulus travels to the spine where a reflex arc is initiated with the motor nerve fibers in the affected area (9) as well as a conscious awareness being elicited by the centers in the brain. The muscle fibers of the area go into a reflex spasm which in turn causes more pain and a complete cycle of pain-spasm-pain is propagated. The counterirritant works in such a way that it stimulates the free nerve ending in the skin. The impulses from the skin swamp or obliterate those from the injured area and break up the cycle of pain-spasm-pain. (Figure 1)

It is known that a neuron may be stimulated at its center and transmission will proceed in both directions. But stimulate a nerve at its extremeties simultaneously and the two impulses extinguish each other. Through counterirritation, the skin impulses initiated from a source other than

TO CENTRAL NERVOUS SYSTEM

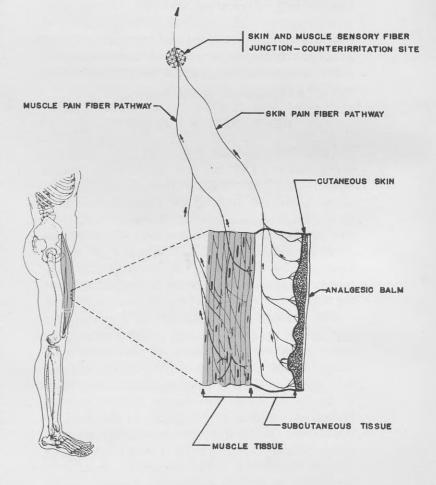


FIGURE 1

that of the injury, and the injury pain impulses meet at a junction either in the nerve trunk or in a cell station, extinguishing each other, breaking up the reflex arc to the motor neuron and relieving the spasm and pain at the injury site. To be sure, if the injury or disorder is severe enough the impulses from the counterirritation will not be great enough to constantly disrupt the cycle.

Analgesic balm used by Athletic Trainers for topical application are made of a combination of chemicals including ingredients called rubefacients. A rubefacient is a chemical that causes reddening of the skin through irritation (7). Counterirritation on the skin is caused by the rubefacients. Turpentine, camphor, chloroform, ammonia, and methyl salicylate are examples of rubefacients (7). Mustard and capsicum plasters are also rubefacient in action. Perhaps the most effective rubefacient is some form of nicotinic acid (6) (8).

HEAT-PACK A MISNOMER

The commonly used term 'heat pack' is actually a misnomer. The idea that heat is being elicited from a pack is a fallacy. Johnson & Johnson, when discussing their Back Plaster containing capsicum, said, "no significant heat at the interface between the adhesive portion of the tape and skin is produced" (12). The sensation of heat is produced by the rushing of blood through the skin capillaries as a response to the exciting of the pain fibers by the rubefacient irritation.

The reddening or hyperemia of the skin after application of a rubefacient is the vasodilation (dilation of a blood vessel) of skin capillaries caused by the stimulation of the pain fibers in the skin eliciting the well-known axon reflex (2). When the ending of the sensory (afferent) nerve branch in the skin is stimulated, in this case by the irritant, the centrally conducted impulses pass antidromically (opposite the normal nerve conduction direction) to the vasodilator branch to the blood as well as dromically (normal nerve conduction direction) to the parent fiber, to the

central nervous system. It is this peripheral conduction from one branch to the other that is called an axon reflex.

Could this axon reflex act on tissue as deep as skeletal muscle? Skeletal muscles do have the afferent (sensory) pain pathways leading to the central nervous system. There is a junction between muscle afferents and skin afferents prior to the neuron entering the spinal cord, at which the phenomenon of counterirritation takes place. When comparing the difference in numbers of pain fibers distributed to skin and muscle, there is a preponderance of pain fibers present in the skin as compared to that of muscle, a few hundred as compared with thousands in muscle tissue of comparable size. Also, as far as is known, vasodilator nerve (efferent) fibers are distributed entirely to blood vessels of the skin (3).

A sensory impulse elicited at the periphery will: 1) travel to the central nervous system and synapse with efferent fibers out of the spinal column which in turn stimulate the motor sections for muscle movement; 2) will travel, afferently, from the skin to the central nervous system; to the brain where there is a center that controls vasomotion (dilation or constriction) through the sympathetic nerve chain to the vessels of the muscles; or by secretion of chemical substances into the blood for a general body reaction (14) (15). This vasomotor control would appear too general for our investigation, but it has been shown that pain fiber stimulation may markedly increase the epinephrine fraction in the blood and even small physiological concentrations of epinephrine can induce almost maximal vasodilation in skeletal muscle (5) which is accompanied by body sweating. Post (10) did show that rubefacients applied to the skin do have an effect on muscle by increasing the time required to fatigue a working muscle. Forearm flexor muscle temperature rose slowly over a 90 minute period to a mean average of 2.6° C above the temperature of the muscles before a rubefacient was applied (11).

There is yet another way that topical application of an analgesic may act upon the deeper

tissues. This is called percutaneous absorption. It is theorized that the rubefacient is absorbed by the skin and into the blood stream, eventually acting upon the muscle vessels. It has been shown that methyl salicylate, one of the more commonly used rubefacients in analgesic balms, does not penetrate the skin appreciably (16). It is used primarily for irritation and is not meant to be exposed to the 'raw' tissues of the body. But it has been shown that certain rubefacients have a penetrating action and are thought to affect the circulation of the vessels in the muscles (10). One nonirritating analgesic, triethanolamine salicylate, is absorbed by the skin into the blood without any vasodilation and is meant to relieve pain in much the same manner as an analgesic such as aspirin (16). A pertinent example of percutaneous absorption would be the use of DMSO (dimethyl sulfoxide) in treating injuries. DMSO has been shown to very readily disperse into the skin and act as a vehicle for a number of substances that would otherwise not penetrate the skin (1) (13).

To gain information about the effect of analgesic balm, several pharmaceutical companies that produce a balm were contacted for data and opinions concerning the effects of their product when used in the athletic injury situation. Only two of ten companies gave a definitive answer as to the results of the application of their product on the skin. Some were quick to hypothesize on the action of their product, and some honestly said that they had no data, or had no way of collecting data concerning the effects of their product and therefore could not give an answer.

It appears that the topical application of an analgesic balm pack to the site of a recent traumatic musculo-skeletal injury does not have any adverse effects upon the injury within the deep tissues, but the counterirritating properties of the balm may provide a certain degree of relief from pain. Research is presently being carried out on animals to measure any dilation of muscle vessels due to the topically applied analgesic balm, and future research is planned for trials with human subjects.

BIBLIOGRAPHY

- 1. American Medical Association. Committee on the Medical Aspects of Sports. **DMSO In Sports.** September, 1965.
- 2. Bard, Phillip. **Medical Physiology.** 11th Edition, C. V. Mosby, St. Louis, 1961.
- Celander, O. and Folkow, B. The Nature and Distribution of Afferent Fibers Provided with the Axon Reflex Arrangement. ACTA Physiologica Scandinavica, 29:359, 1953.
- 4. Ellis, M. Relief of Pain by Cooling the Skin. **British** Medical Journal, January 28, 1961.
- 5. Folkow, B. Nervous Control of the Blood Vessels. **Physiology Review**, 35:629, 1955.
- 6. Fulton, G. F., Farber, E. M., and Moreci, A. P. The Mechanism of Action of Rubefacients. **Journal of Investigative Dermatology**, 33:317, 1959.
- 7. Krug, E. E. **Pharmacology In Nursing.** 8th Edition, C. V. Mosby, St. Louis, 1960.
- Peterson, J. B. Farber, E. M. and Fulton, G. P. Responses of the Skin to Rubefacients. Journal Of Investigative Dermatology, 35:57, 1960.
- 9. Pharmacological Basis Of Therapeutics. Goodman and Gilman, MacMillan Co., New York, 1955.
- Post, B. S. Effect of Percutaneous Medication on Muscle Tissues: An Electromyographic Study. Archives Of Physical Medicine And Rehabilitation, 42: 791, 1961.
- Post, B. S., et. al. The Effect of Percutaneous Medication on Motor Nerve Conduction Velocity. Archives Of Physical Medicine And Rehabilitation, 45: 460, 1964.
- 12. Thompson, T. M. Personal Correspondence. Johnson & Johnson, 1966.
- 13. A Limited Wonder. Time, September 17, 1965.
- 14. Uvnas, B. Sympathetic Vasodilation System and Blood Flow. **Physiology Review**, Supplement 4, 40 (part 2):69, 1960.
- 15. The Vasodilator Nerves. The Amerian Heart Journal, 62:277, 1961.
- Worton, A. G. Personal Correspondence. Warren-Teed Pharmaceuticals, 1966.

Does the

National Athletic

Trainer's

Association

Need A

Certification

Examination?

J. Lindsy McLean Jr.

Athletic Trainer

Michigan University, Ann Arbor, Michigan

Athletic training as a profession has come a long way in the years since the National Athletic Trainer's Association was founded in 1950. The active membership requirement for a college degree and apprenticeship under an active member as well as suggested academic curriculums certainly are marks of professional advancement of which we can all be justly proud. This steady amelioration was recognized officially by the American Medical Association's Board of Delegates in 1967, and it is a tribute indeed to the many untiring leaders in the profession during the critical initial two decades of organization.

THE PROBLEM

Do these past accomplishments mean that the NATA has "arrived" or just initiated its climb to responsibility and respectability as a paramedical profession? Critical self-evaluation most likely indicates that we have only made a good sound beginning.

Each year some of the best qualified trainers leave the profession for either financial reasons or due to unfavorable working conditions unconsidered and, therefore, uncorrected by superiors. Annually, many graduating young trainers of exceptional potential are denied opportunities for employment because their qualifications go unrecognized. In some instances employment still depends upon who you know — not what you know. The continued existence of such situations obviously does not reflect a truly mature profession in need of no further advancement or reexamination. Realistically, athletic training still has a long way to go if it is to become the profession most of us hope it will.

Education always is one of the most pressing problems to be analyzed as any profession attempts

to advance. This certainly is true in the field of athletic training. Certification in physical therapy has many advantages, but it has become obvious that it is not a realistic or perhaps desirable goal for all trainers to pursue. A master's degree likewise should appeal to many, but not all, members of such a highly diversified profession. To adequately prepare trainers for teaching positions on the secondary and collegiate level as well as specialized positions on the university and professional levels, flexibility in educational objectives must always be recognized and encouraged. The value of apprenticeship as an educational experience has been recognized, and it is perhaps the one present evaluation of professional competence all trainers currently approve and recommend.

Athletic training curriculums on both the graduate and undergraduate level are already in full operation at several institutions. They offer definite promise in providing the academic recognition and a common educational background the profession so vitally needs. Yet it is unreasonable to expect such quality curriculums to grow in sufficient numbers to meet the pressing educational needs of our profession in the immediate future. Would this mean that the student trainer at an educational institution without such a curriculum but possessing a fine athletic trainer with a complete athletic program might never hope to be certified? Obviously, many problems remain to be solved.

A POSSIBLE SOLUTION

In recent years there has been much discussion of a possible certification examination for the NATA. Many feel that such a practical and written evaluation is the best answer for the immediate problems of professional preparation within the Association when all alternatives are considered. With such an evaluation of competence, the individual student trainer could plan his academic curriculum with the aid of his undergraduate advisor (and head athletic trainer) in such a manner that he could take such an examination with confidence upon graduation. Since all pres-

ent active members of the NATA will be certified in 1972, only future applicants for active membership would face such an evaluation.

The content of the examination would obviously require careful consideration. The course of study as recommended by the Professional Advancement Committee should logically be evaluated first for the excellent guidelines it contains. Certainly such topics as anatomy, physiology, and kinesiology should be well covered. Questions concerning recognition of serious injury, first aid, physical therapy techniques, reconditioning exercise, diet, and the prevention of injury all have obvious merit. A short practical demonstration of elementary adhesive strapping ability, massage techniques, etc., might also be included. The test should not be so difficult to preclude a variety of academic backgrounds. It should, however, be of sufficient specialty to require definite curriculum planning and more than casual intellectual pursuit. As our educational standards improve this could be reflected in a gradual upgrading of the "athletic training boards." Those unable to satisfactorily complete the test on the initial try could be accorded associate membership until such time as they were successful. Likewise, long time associate members of exceptional ability but who do not qualify for active membership under the present By-Laws might be allowed to use such an examination to elevate their membership status.

The mechanics of preparing and administering such an examination could easily be worked out. Perhaps an organization such as the Professional Examination Service (American Public Health Association) might be contracted to prepare and grade the test to ensure complete fairness and professional conduct. The cost of this service would be borne by the applicant. The examination could be given regionally each year under supervision of district directors within the NATA as well as at the national convention each June. These, of course, are only possibilities.

IMMEDIATE AND LONG RANGE BENEFITS

The results of a certification examination for trainers might be immediate and dramatic. What

if the National Federation of High School Athletic Associations looked to the NATA exam as minimum standard of competence for all secondary school athletic programs? On the collegiate level, team physicians and administrators would then have a firm basis for demanding that only certified NATA members be hired much as hospitals will consider only "registered" nurses. At present there is no basis on which such a demand can be logically founded. The growth of athletic training curriculums on the collegiate level would be stimulated since they would be the most logical way to prepare for such an exam. To put it mildly both the immediate and future potential of an "athletic training board examination" offers exciting possible benefits to our profession.

CONCLUSIONS

The idea of a professional examination for trainers is not new. Most athletic and medical authorities would agree as to its eventual inevitability. Most arguments and discussion on this subject presently concern priorities. Is such an exam needed now or ten years from now?

Even with immediate concentrated efforts toward establishing an early national examination, many months would be required before it could become a reality. At a time when the membership is divided and uncertain regarding which direction our future should be, few members would object to the immediate consideration of such an examination.

Such an examination would give our Association a unity of purpose and direction at a time it is sorely needed. Let us proceed now!

REFERENCES

- Gunn, Robert. "A Letter to the Editor," J.N.A.T.A., (Summer 1967) P. 16.
- Johnson, Roger L. "Assessment of the Duties and Responsibilities of the Athletic Trainer in the N.A.T.A." *J.N.A.T.A.* (August 1964) p. 17.
- Miller, Sayers "Educating Trainers—Neophyte and Veteran," *J.N.A.T.A.* (Summer 1966) p. 7.
- Newell, William E. "Your Association and its Program," *J.N.A.T.A.* (Summer 1966) p. 3.

Recent Athletic Training Literature

- This list is generally restricted to those areas of specific interest to the athletic trainer. Topics belonging to the broad areas of athletics, physical education and physical therapy will usually be omitted.
- Adams, A: "Effect of Varying Degrees of Mobilization Upon Leg Strength," *Journal of Sports Medicine and Physical Fitness* 8: 55-60; June, 1968.
- Adams, J. E.: "Bone Injuries in Very Young Athletes," *Clinical Orthopedics* 58: 129-40; May-June, 1968.
- Bayne, J. D.: "Pro + tec Protective Bra," Journal of Sports Medicine and Physical Fitness 8: 34-5; March, 1968.

- Fardy, P. S.: "Preventing Heat Illness," *Athletic Journal* 49: 62+; September, 1968.
- Heintz, W. D.: "Mouth Protectors: A Progress Report. Bureau of Dental Health Education," *Journal of the American Dental Association* 77: 632-6; September, 1968.
- Peltokallio, P., et al: "Fractures of the Humerus from Muscular Violence in Sport," *Journal of Sports Medicine and Physical Fitness* 8: 21-5; March, 1968.
- Rawlinson, K.: "General Treatment Rules: Contusions, Strains, Sprains," Scholastic Coach 38: 88+; September, 1968.

- Ryan, A. J.: "The Physician in the Training Room," *Archives of Physical Medicine* 49: 340-2; June, 1968.
- Singer, R. N. and S. A. Weiss: "Effects of Weight Reduction on Selected Anthropometric, Physical and Performance Measures of Wrestlers," *Research Quarterly* 39: 361-9; May, 1968.
- Spickard, A.: "Heat Stroke in College Football and Suggestions for Prevention," *Southern Medical Journal* 61: 791-6; August, 1968.
- Williams, J. G.: "Nutrition in Sport," *Practitioner* 201: 324-9; August, 1968.

Injury prevention begins with protective strapping ...your best assurance of making your season as injury-free as possible. Johnson Johnson



...and the finest tapes come from Johnson & Johnson.

For years, we've specialized in producing athletic tapes to help you protect your players from unnecessary injury.

Finely balanced adhesive mass gives secure adhesion.

Meets the requirements of rigorous game and practice sessions.

Porous adhesive mass allows the skin to "breathe."

Perspiration escapes through pore-like holes in adhesive coating.

Controlled unwinding tension for quick strapping.

Free and easy unwind from beginning to end of roll. Cuts the time needed to get players into action.

Removes cleanly from skin with little adhesive residue.

Water-resistant backcloth is designed to prevent separation of adhesive coating from backcloth upon removal.

The Johnson & Johnson family of fine tapes includes a wide variety of athletic tapes specifically developed to meet the requirements of rigorous game and practice sessions...

ZO* Athletic Tape (porous or plain)

—heavy weight for maximum support.

Available in tube (plain) or economical SPEED PACK (porous).

ZONAS* Athletic Tape (porous or plain)

—regular weight at moderate cost.

Available in tube or economical SPEED PACK.

COACH* Athletic Tape (porous only)

—medium weight at maximum economy.

Available in tube or economical SPEED PACK.

ELASTIKON* Adhesive Tape

—high-strength elastic fabric provides support and flexibility for knees and shoulder strapping.

BAND-AID Clear Tape

—flexible plastic backing which is invisible on skin. Ideal for dressings and blister prevention.

DERMICEL* Surgical Tape

—designed to eliminate tape irritation of sensitive skin.

SPEED PAGK—More economical than tubes.

Designed for quick strapping, it delivers 32 pre-stacked rolls, 1½" x 15 yds., ready for instant use. Equivalent to one-half case of standard tubes, its compact size makes it handy for out-of-town games. Available in ZO, ZONAS and COACH brands only.



prevention begins with the finest tapes...

ZONAS ATHLETIC TAPE

11/2

Johnson Johns

ATHLETIC TAPE

Johnson John





SPEED PACK ATHLETIC TAPE

SIDE OF Johnson

Johnson Johnson



1969 SPEED PACK PREMIUM OFFER

With the purchase of ten or more SPEED PACK we will send you, free of charge, one of the valuable coaching aids shown below.

Offer subject to terms shown below-

New SPEED PACK Trays

offer greater protection and convenience—SPEED PACK is now divided into four individual trays for controlled dispensing when less than a case of SPEED PACK is required.



The HANHART Super Swing Stopwatch

Versatile and accurate, the Hanhart Stopwatch is a tool no coach should be without. It features a 1/10 second dial calibration plus a new color-coded start-stop-reset mechanism. Each stopwatch is supplied with a nylon lanyard and protective pouch which make it virtually impossible to damage or drop. A \$17.50 value, it's yours FREE, with the purchase of ten or more SPEED PACK.



New-Improved SPEED PACK Game Bag

This sturdy, handsome leather-like bag is designed to carry a full case of SPEED PACK—it also doubles as a trainer's bag, or a handy carry-all for games away from home. It is constructed of a heavy duty vinyl material that resists scuffing and cracking.

Johnson Johnson

ATHLETIC DIVISION, NEW BRUNSWICK, N.J. 08903

Terms of Offer: During the period of Jan. 1, 1969 to Oct. 31, 1969, Johnson & Johnson offers one free premium of either one STOPWATCH or one GAME BAG with a minimum purchase of ten SPEED PACK from your athletic distributor. Each school or college is limited to 1 premium. Offer will be shipped separately from Johnson & Johnson directly to your school. Shipment will be made on or before the delivery date specified on your SPEED PACK order. Allow one month for delivery. Specify your choice of premium on your SPEED PACK order. Offer limited to the continental limits of the United States not including Alaska.

Keep well informed on various aspects of training, conditioning and athletic injuries with copies of these important new books

New 2nd Edition! MODERN PRINCIPLES OF ATHLETIC TRAINING, by Carl E. Klafs, Ph.D., F.A.C.S.M., and Daniel D. Arnheim, D.P.E., F.A.C.S.M. Here is the one text that bridges the area between medical treatment and trainer management of athletic injuries. Divided into three sections, it encompasses general principles of athletic training, bases for recognizing and managing athletic conditions, and prevention and care of injuries. February, 1969, approx. 444 pp., 568 illustrations, \$8.50.

New! ADAPTED PHYSICAL EDUCATION for the Disabled and Subdeveloped, by Daniel D. Arnheim, D.P.E., F.A.C.S.M., David Auxter, Ed.D., and Walter C. Crowe, Ed.D. From organization to implementation this new book presents the entire field of adapted physical education, including guidelines for modifying an existing program. April, 1969, approx. 528 pp., 314 illus., about \$8.25.

New 2nd Edition! CONDITIONING EXERCISES—Exercises to Improve Body Form and Function, by Vermon S. Barney, R.P.T., P.E.D., Cyntha C. Hirst, M.D., and Clayne R. Jensen, P.E.D. Providing a greater variety of exercises than the usual book of its kind, CONDITIONING EXERCISES combines lucid text with superb photographic illustrations to clearly demonstrate a progression of exercises for specific conditioning purposes. January, 1969, 151 pp., 97 figures, \$4.95.

New! AAOS SYMPOSIUM ON SPORTS MEDICINE.

Sponsored by the American Academy of Orthopaedic Surgeons, SYMPOSIUM ON SPORTS MEDICINE is a compilation of pertinent information on the subject written by some of today's most distinguished orthopaedic specialists. It is an essential reference for every team physician and trainer. Among the 20 timely discussions are these: athletic injuries of the hand; shoulder injuries in throwing sports; gastroenteritis of travelers; anthropological and physiological observations of running; and specific injuries of the upper extremity and of the knee. March, 1969, approx. 224 pp., 100 illustrations, \$15.00.

----THE C. V. MOSBY COMPANY



Publishers - - - - St. Louis, Mo. 63103

3207 Washington Boulevard

The Mosby Guarantee of Satisfaction: Each book listed here may be ordered on 30-day approval. If any book does not live up to your expectations, merely return it to The C. V. Mosby Company for full credit or refund within 30 days after date of shipment. You can save delivery charges by enclosing your remittance with your order—the same return privilege is guaranteed.

	Payment	enclosed	(Same	return	privilege)	
--	---------	----------	-------	--------	------------	--

☐ Bill me

JNAT-369

NAME_____

ADDRESS____

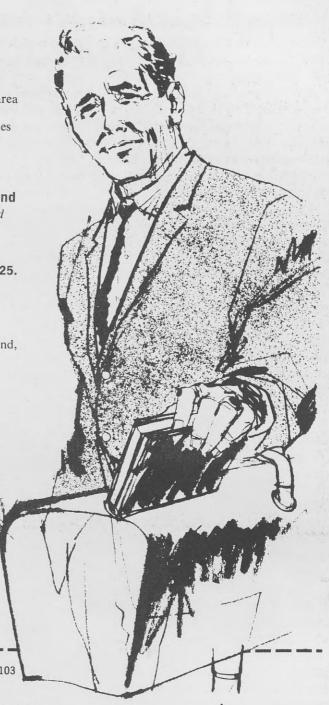
CITY____

STATE ZIP

30-day approval offer good only in Continental U.S. and Canada

Please send me a 30-day examination copy of:

- ☐ Klafs-Arnheim, MODERN PRINCIPLES OF ATH-LETIC TRAINING, 2nd edition, \$8.25
- Arnheim et al, ADAPTED PHYSICAL EDUCATION for the Disabled and Subdeveloped, about \$8.25
- ☐ Barney-Hirst-Jensen, CONDITIONING EXER-CISES—Exercises to Improve Body Form and Function, 2nd edition, \$4.95
- ☐ AAOS SYMPOSIUM ON SPORTS MEDICINE, \$15.00



Bits and Pieces

Clyde Stretch

Something that is usually a headache for the trainer at the start of each new season is the difficulty many athletes have with the new stresses placed upon some areas of the skin. The reaction of the skin generally takes two forms: those due to minor irritations in the form of a rash and those involving a rather severe irritation, blisters.

"That blisters constitute a problem in athletics is shown by the number of different methods now in use for their prevention. These methods include the wearing of properly fitted shoes and socks, the wearing of two pairs of socks, the wearing of thin silk socks under wool socks, the wearing of cushioned socks, the application of skin lubricants, petroleum jelly, skin toughener, powder, tape or moleskin to friction areas, and the soaking of feet in methylated spirits or salt solutions."1

It must be assumed that blisters are a protective mechanism of the body for the preservation of its dermis. "Despite their frequent occurrence, little scientific study has been devoted to these lesions. Moreover, a diversity of opinions on their treatment continues to exist, probably because the medical literature still lacks a precise clinical and histological description of the natural course of friction blister healing."²

This discussion will deal with two methods of prevention and two ideas about treatment which have appeared in recent literature.

1. **On Prevention** from Spence, W. R., et al: "New Approach to Blisters, Calluses and Trophic Ulcers," presented to the American Congress of Rehabilitation Medicine, August 30, 1967, in Miami, Florida.

"Forces acting on the sole of the foot during locomotion are represented by four major components: vertical forces (resisting movement

straight down), fore and aft shear (resisting movement of the foot towards the front or towards the rear), lateral shear (resisting movement of the foot towards either side), and torque (resisting rotation of the foot on the floor)." AB-STRACT: "Blisters, calluses and trophic ulcers on the soles of the feet represent potentially serious medical problems. A primary etiology is thought to be shearing forces acting on the skin. A closed-cellular neoprene insole has been developed which will absorb 1 centimeter of fore, aft and lateral shear, and 30 degrees of rotary shear. This material is effective in preventing blisters and calluses and appears to be helpful in prevention of trophic ulcers on the soles of the feet."

2. **On Prevention**—the use of instant ice on the hand and cold water on the feet: Two studies were done at the University of Kentucky to determine the effect of immediate cold applications to "hot spots" reported during activity.

A group of eight students, "four each in an experimental group" and a "control group" performed repeated kip ups with the experimental group receiving instant ice treatments to their hands when "hot spots" were reported.³

Twenty-four senior high school basketball all stars were the subjects, of a second study, with twelve players in each of the control and experimental groups. The experimental group was treated with 30 second foot soaks in a tub of iced tap water after the "hot spots" were reported.

The prevention of blisters by these methods was found to be statistically significant in both experiments. However, it was noted that the small groups used for the experiments indicated a need for further replication before the results could be considered conclusive.

3. **On Treatment** from Thomas, A. C., Jr.: "Treatment of Friction Blisters; An Experimental Study," *Archives of Dermatology* 97:717-21; June, 1968. ABSTRACT: "The healing of experimental friction blisters on palms or heels of 83 volunteers was followed for three weeks with and without fluid drainage, and with and without blister top removal."

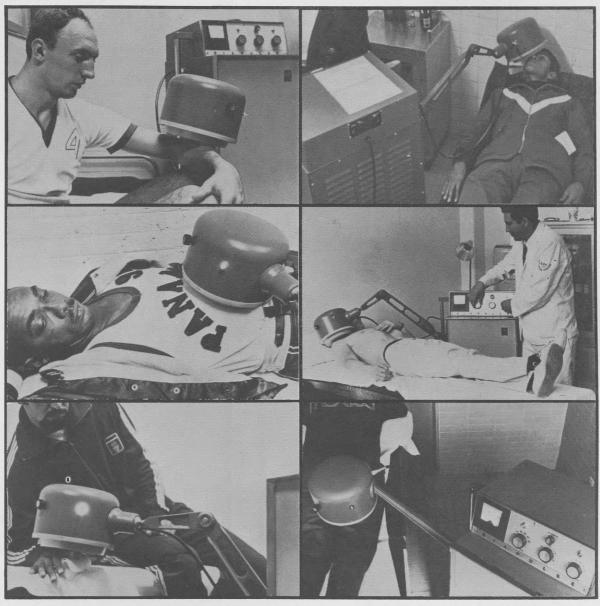
"Both natural fluid resorption and aspiration resulted in the adherence of some of the blister tops to their bases. A single drainage not earlier than 24 hours and not later than 72 hours or drainage three times during the first 24 hours after blistering trauma produced the highest incidence of blister top adherence. Under the conditions of these experiments, the blister sites protected by the adhering tops became functional earlier and caused less discomfort than denuded blisters. Blister drainage did not influence epidermal regeneration of the base, which was histologically evident in the production of a new granular cell layer by 48 hours after blistering trauma."

Method of blister production: "Friction blisters were produced by using the eraser of an ordinary lead pencil which was pressed downward against the skin surface and briskly rotated in a clockwise-counterclockwise direction. Two to three blisters were produced on the hypothenar eminences of both palms in all but four of the soldiers. In these four soldiers, one friction blister was produced on the lateral aspect of each heel."

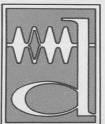
4. **On Treatment** A. G. Edwards suggests a new and unusual method for treating blisters, the application of adhesive tape. The method can save considerable time for the trainer's standpoint and yet appears to be successful.

The blister is first drained and the

DIAPULSE AT THE XIX OLYMPIAD



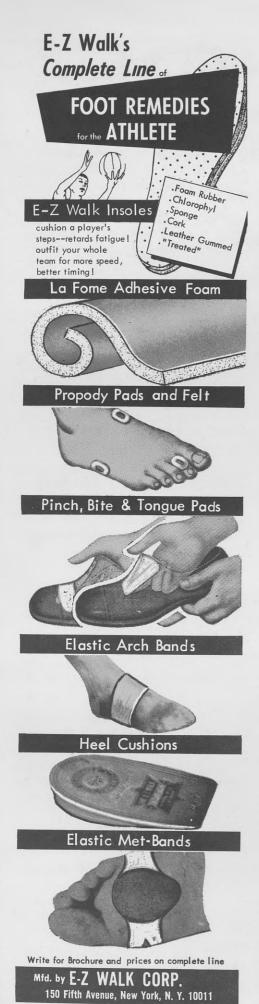
Except for oxygen therapy, Diapulse (pulsed, high peak power electromagnetic energy) was the only therapeutic medical equipment supplied by the Mexican Olympic organizing committee in the competition and training clinics throughout the olympic area, for the accelerated healing of athletic injuries.



SEND FOR COMPLETE INFORMATION

Diapulse corporation of America

4 NEVADA DRIVE, LAKE SUCCESS NEW HYDE PARK, NEW YORK 11040 (516) 437-9700 • (212) 343-0518



raised skin removed. Antiseptic is then applied, followed by a strip of adhesive. The tape is left on the area of the blister for approximately three days. Upon removal of the tape, the blister will most often be healed or partially healed. Partially healed blisters may be re-treated.

Further information on the techniques or results may be found in: Edwards, A. G.: "Blisters, No Problem," *Athletic Journal* 48:16+; June, 1968.

- 1. Brown, J. and P. Childers: "Blister Prevention: An Experimental Method." Sesearch Quarterly 37: 187-91; May, 1966.
- Thomas, A. C., Jr., et al: "Treatment of Friction Blisters; An Experimental Study," Archives of Deratology 97: 717-21; June, 1968.
- 3. Brown, J. and B. Johnson: "The Use of Instant Ice for the Prevention of Blisters on the Hands," *Journal for the Association for Physical and Mental Rehabilitation* 20: 132-3; August, 1966.

CALENDAR:

- 1) The Second Annual Sports Medicine Seminar will meet on March 22 at the Windjammer Restaurant, 7001 Seaview NW, Seattle, Washington. Details may be obtained from Keith D. Peterson, D.O., 5409-17th Avenue NW, Seattle, Washington, 48107.
- 2) The Fourth Annual Spring Conference on Prevention and Management of Sports Injuries will be presented March 26 and 27 at the Wisconsin Center, University of Wisconsin, Madison, Wisconsin. Further information may be obtained from Thomas C. Meyer, M.D., Chairman Postgraduate Medicine, 307 N. Charter St., Madison, Wisconsin, 53706.
- 3) The American College of Surgeons will host its Annual Athletic Injuries Course on March 28, 29 and 30 at the Murphy Auditorium, Chicago, Illinois. There is a \$35 fee covering two luncheon meetings and a banquet. Details may be obtained from Sara Barr Cohen, Publicity Director, Communications Division, American College of Surgeons, 55

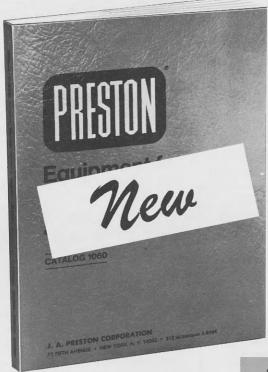
East Erie St., Chicago, Illinois, 60611.

- 4) A Postgraduate Course on Conditions of the Knee in Sports Medicine will be presented April 7, 8 and 9 by the American Academy of Orthopedic Surgeons in Oklahoma City, Oklahoma. Details about the course may be obtained by contacting Don H. O'Donoghue, M.D., 1111 N. Lee St., Oklahoma City, Okla. 73103.
- 5) The Sixteenth Annual meeting of the American College of Sports Medicine will take place May 1, 2 and 3 at the Hyatt House, Atlanta, Georgia. Information comes from Mr. Donald E. Hermann, 1440 Monroe St., Madison, Wisconsin, 53706.
- 6) The annual meeting of the Michigan State Medical Society's Medical Aspects of Sports will take place on May 8 at Kellogg Center, Michigan State University, East Lansing, Michigan. Further information may be obtained by contacting James S. Feurig, M.D., Olin Health Center, East Lansing, Michigan, 48823.
- 7) The Great Lakes Athletic Trainers Association (District #4—N.A. T.A.) will hold its Second Annual Meeting and Clinic. The Clinic is under the direction of Roland "Duke" LaRue. The dates for this Clinic are March 14-15, 1969. For further information write to Mr. LaRue at Western Hall, Western Illinois University, Macomb, Illinois, 61455.

STATEMENT OF OWNERSHIP

Management and Circulation The Journal of the National Athletic Trainer's Association is published four times a year by the National Athletic Trainers Association at 3315 South St., Lafayette, Indiana 47905. Editor is Marvin Roberson, Brigham Young University, Provo, Utah; Managing Editor is Ellis Murphy, Chicago, Illinois. The name of the owner is National Athletic Trainers Association whose address is 3315 South Street, Lafayette, Indiana 47905. There are no bondholders, mortgagees or other security holders. Two thousand copies are printed, total paid circulation is 1300, 384 are distributed free, 316 are used as samples, overstock and for promotion. Certified by Jack Rockwell, Executive Secretary, NATA.

EQUIPMENT FOR ATHLETIC TRAINING PROGRAMS



PRESTON CATALOG 1080

... contains the largest line of specialized equipment suitable for Athletic Training Programs.

The Preston Catalog 1080 includes the equipment and brands you know and use. Among them are:

Ille Whirlpools Hydrocollator
Whitehall Whirlpools ColPaCs
Elgin Exercise Equipment Medcolator
Nissen Gym Apparatus Birtcher Ultrasound
N-K Quadriceps Exercise Tables

Also, a wide variety of infrared lamps and bakers, and many other items for your training program.

Ordering from Preston is convenient and time-saving because Preston supplies all your equipment needs from a single source. And Preston sells only direct-to-you. We have no dealers or agents.

The complete Preston Catalog is available free of charge. Please address your requests to J. A. Preston Corporation, Department N, 71 Fifth Avenue, New York, N. Y. 10003.

J. A. PRESTON CORPORATION

71 Fifth Avenue, New York, N. Y. 10003

212 AL 5-8484



Get Hustle

The really delicious energy boost that's there when you need it!

Hustle is the energy packed-high protein drink that gives your team something really extra. Hustle in the InstaCan is a balanced meal in itself. Hustle tastes great and is perfect for any type of weight control. Hustle is so easy to digest—even for athlete's with a jumpy stomach! Perfect before, during or after any contest. Sold by your local sporting goods dealer.

For: stamina strength energy

National Notes

JACK ROCKWELL, EXECUTIVE SECRETARY

Apologies are in order as this column comes to you, at least for members of the NATA who were in Philadelphia on January 19, 20, and 21st, 1969. The apologies are offered because some of the subject matter in this issue was presented at that meeting and at several other informal sessions your Executive Secretary has been involved in around the country.

Before you receive this issue, you will have received a National Newsletter pertaining to the dues increase. I hope and believe that this letter is self-explanatory. The need for the dues increase has been explained quite thoroughly before and I hope needs no further explanation. One thing that I would like to mention at this point is that the need for a full time Executive

Director is becoming much more apparent each day. This is not to be construed as an overture for the position but, whoever accepts the position when it becomes available has a work load to look forward to that is really quite staggering. As an example, the need for a Central Placement Bureau is of extreme importance; but this is only one of many things that the NATA National Office should and must do. In the area of representation it is of the greatest importance that we have a good representation at all functions involving allied organizations. Recently, while in Los Angeles at the NCAA meetings, a group of the trainers present got together for a series of informal talks pertaining to the needs of the organization. The lack of understanding and need for better communications became extremely apparent at these sessions. The wants, desires, and problems of the organization must be made known, and then and only then can action be initiated.

One of several points of discussion that arose in Los Angeles was the need for workshops at the NATA Annual Meeting designed to make all athletic trainers more cognizant of and be able to better work with some of the sports that they don't ordinarily come in much contact with. As an example: Boxing, Wrestling, Crew, Skiing, Hockey, Gymnastics, Fencing, etc.

Another matter that disturbs me is the situation wherein an athletic trainer is placed in such a position in his institution or organization that he comes directly under the supervision and jurisdiction of the Head Coach rather than the Medical people responsible for the care of the athletes. I sincerely believe it is an affront to the individual athletic trainers' integrity to be placed in such a position. We all, I hope, try at all times to cooperate with, work with, and understand the problems of the coaching staff. By the same token, I'm sure that all of us work as closely with our doctors as possible. And, of course, we must and do have the wel-

name of the game:

stamina.

Kretschmer Wheat Germ's got the stuff to help build muscle... stamina...unleash a reserve of high energy fuel during strenuous physical activity.

That's because Kretschmer's packed with protein, iron, vitamin E, B1, B2, niacin, phosphorus and 23 other important nutrients.

This great natural food is delicious alone, on cereal or fruit, in milkshakes. Recommend it to your athletes for breakfast every day. They'll benefit from it.



For your free copy of "Wheat Germ in the Athlete's Diet," write:



® KRETSCHMER wheat germ,

Box 2097-J, Minneapolis, Minnesota 55415

for PROTECTION · SUPPORT · COMPRESSION

THE TRAINERS' FIRST CHOICE FOR PRE-GAME AND PRE-PRACTICE STRAPPING
TO HELP AVOID INJURIES TO ATHLETES



ELASTOPLAST "AT" Athletic Elastic Adhesive Tape adheres firmly...

Has Superior Stretch—from 3 yards slack to approx. 5½ yards—and unexcelled Contraction . . .

Assures players freedom of action.

ELASTOPLAST TAPE TUBE PACKING

12" x 5½ yards (stretched)

Order Numbers:

410-AT	12 rolls	1" cut
411-AT	8 rolls	1½" cut
412-AT	6 rolls	2" cut
413-AT	4 rolls	3" cut
414-AT	3 rolls	4" cut

Case lots of 12 tubes of same cut available at institutional discount.



LABORATORIES, INC.

ELASTOPLAST-MADE IN U.S.A.-THE ORIGINAL E-L-A-S-T-I-C ADHESIVE TAPE AND UNIT DRESSINGS





EFFECTIVE COLD APPLICATIONS

EVERYTHING YOU WANT IN A COLD APPLICATION

ColPaC is soft and pliable, even below freezing; molds and shapes to body contours; excellent cold re-

tention; safe; eliminates mess of melting ice; versatile variety of shapes and sizes.



ColPaC CHILLING UNIT MODEL C-2

Automatically maintains a supply of ColPaC's chilled to proper temperature—ready for immediate use.

ALL STAINLESS STEEL
THERMOSTATICALLY CONTROLLED
INSULATED • MOBILE

Write for literature and prices

ORIGINATED AND MANUFACTURED BY



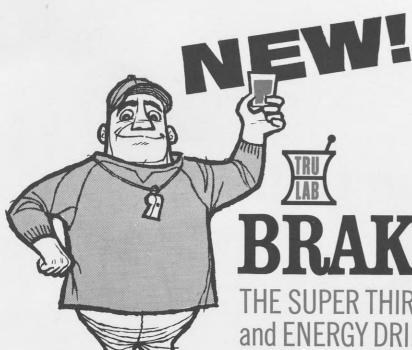
CHATTANOOGA PHARMACAL COMPANY, Chattanooga, Tennessee 37405



fare of the athlete foremost in our mind and actions at all times. The point I am attempting to make here is that each of us as an individual athletic trainer must, in addition to doing the best work we are capable of performing, continue to obtain and work for the respect of our administrators and develop job situations to a point where we are looked upon as the key person in the Athletic-Medical Team. To reach professional status as an organization and as individuals, we must strive to achieve this respect and understanding.

One other item that I feel quite strongly about is the subject of accepting at face value and using various types of treatment programs, modalities, or products without adequate research, testing and understanding of the program, modality, or product. Samples are great, but they must be treated as samples and handled accordingly. In the same sense, overenthusiastic plunges into new treatment programs, while at the same time excluding the tried and true, seem just as absurd and ridiculous as issuing a new product that has been given to you only minutes before by a salesman. None of us, I'm sure, would ever do anything to harm or injure an athlete in our care, but isn't it just as important to use common sense and use the procedures and products that have been adequately tested and researched. In this way, we can never have our moral, ethical, or intellectual values questioned. I'm sure that most of you realize that one treatment procedure that I'm writing about is the use of Ice Therapy, in which all other forms of procedures and modalities have been excluded. We have all used ice in various forms over the years, and it is an excellent adjunct to the total treatment picture, but let us be certain that the physiological reasoning and the research done is adequate to withstand the test of time and good judgment.

Again, I will close by asking you to please contact the NATA office at any time with problems, needs, or ideas.



BRAKE TIME

THE SUPER THIRST QUENCHER and ENERGY DRINK with Salt Electrolytes

Each 6 fluid ounces contains 160% adult daily requirement of Vitamin C

ORIGINAL STRAWBERRY TASTE • deliciously fresh and slightly tart • doesn't get old or tiresome!

SUPER CONCENTRATE • dissolves INSTANTLY and COMPLETELY • stays in solution • absolutely no settling out!

MIX IT TODAY — USE IT TOMORROW!

THE ONLY ONE THAT GIVES YOU A CHOICE OF 1-GALLON AND 5-GALLON MIXES!

1-gallon BRAKE TIME mix: .95 packet (25 packets to case) 5-gallon BRAKE TIME mix: \$3.95 packet (5 packets to case)

LIMITED TIME SPECIAL INTRODUCTORY OFFER

7-case team offer: FREE! 48-qt. IGLOO Insulated Chest Dispenser retail value \$26.98

4-case team offer: FREE! 5-gal. IGLOO Insulated Cooler Dispenser retail value \$16.90

2-case team offer: Half-price on 5-gal. IGLOO Insulated Cooler Dispenser retail value \$16.90 — you pay only \$8.45



TRUETT LABORATORIES



DALLAS, TEXAS

Athletic Pharmaceutical Division



get your star off the bench...



Put him back in the game in minutes. It's all possible with J&J's unique rubber-based ORTHOPLAST* Isoprene Splint material that lets you mold a protective splint in minutes without special equipment. Find out how effective it is, today.

ORTHOPLAST Isoprene Splints

ohnson Johnson