



Mrs. C. C. Sanders, of Mt. Pleasant Junior High School, writes that the Titus County Interscholastic League is being reorganized after suspension during the war, with fine prospects of having an excellent meet next spring, especially among the junior high schools. "In my twenty-two years of teaching," she says, "I have found the League to be very worth while."

## Resolution on Drinking Evil

### District 11AA Urge Drastic Action to Stop Drunkenness at Games

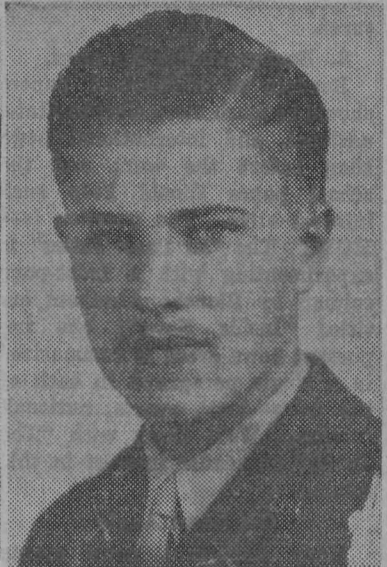
DRINKING at football games is coming to be recognized as a grave menace to both high-school and college football. Various remedies are being discussed. On October 25 the Football Committee of District 11AA of the Interscholastic League, passed the following resolution:

"The district is on record as being opposed unanimously to the use of intoxicants in any form inside the stadium or grounds. The home team is directed to provide a sufficient police force to eliminate its use and is further directed to instruct them to eject drunks from the field. In order to enforce this regulation or rule, it is suggested that the school officials of each member school of District 11AA be requested to ask the city council or commission to pass an ordinance to make it a

## Debate Team Austin (El Paso)



Nina Lou Bothwell, Austin High School (El Paso)



Chris Flammang, Austin (El Paso)

NINA LOU BOTHWELL of Austin High School (El Paso) was one of the winning members on the Conference AA Debate team that placed second during the last State Meet. She was salutatorian of the May graduating class, and her average led to membership in the National Honor Society. During her preparation for the State Meet, she won a number of local honors in Debate. Since September she has been attending the Texas College of Mines and Metallurgy in El Paso, where she is taking an Academic course. She is a member of the Beaux Arts Club and of the Student Christian Association. Her father, John Bothwell, resides at 3621 Altura Blvd., El Paso.

The other member of this second-place winning team was Chris Flammang who has not yet graduated from high school. He holds the rank of captain in the R.O.T.C., and has been active in other high-school activities. His mother is Mrs. Harry Seigel, 3712 Jefferson Ave., El Paso.

violation of the law for any person to carry on his person or in any other manner take intoxicating liquors into the stadium or grounds or drink same therein on the occasion of any District 11AA football game. In order to get public sentiment behind the enforcement of this regulation, school officials are further requested to organize among fathers of the children of their high school a vigilance com-

## Speech Winners Enroll in TSCW

### Key Sparks and Clarice Sargent Given Scholarships By Students Association

TWO STATE Interscholastic League contest winners are enrolled at Texas State College for Women this fall under the terms of the college scholarship fund. They are Miss Kay Sparks of Floydada, one-act play all-star cast, and Miss Clarice Sargent of Grand Prairie, State winner in debate.

The scholarships offered by students of T.S.C.W. are awarded annually to winning girl contestants in the State Meet of the Interscholastic League. The winner also must be in the upper quartile of her class in scholarship during her senior high-school year to qualify.

Each scholarship covers the \$50 tuition charge, and funds are provided by T.S.C.W. students through their College Government Association.

Past winners of the Interscholastic League scholarships have proved to be outstanding members of the college community, several of them having attained highest campus honors.

### The Old, Old "New Deal"

The Zenith of Samos came in the third quarter of the sixth century, under Polyocrates. The revenues from the busy port enabled the dictator to end a dangerous period of unemployment by a program of public works that called forth the admiration of Herodotus. The greatest of these undertakings was a tunnel that carried the city's water-supply 4500 feet through a mountain.

## Dramatics Helps Mend Battle-fatigued Vets

DRAMATICS as a phase of reconditioning for convalescent servicemen is the ideal shortcut to recovery, W. Oren Parker, University of Texas stage designer, reported today on his return from Camp Upton, Mass., where he served as consultant for the War Department in their joint Army-Navy reconditioning program for disabled servicemen.

Dramatic activities were found to be very effective for men with organic injuries and battle fatigue, Parker said, because in this activity the men could forget their own troubles, and, in many instances, actually hasten their own recovery.

"We found out that the dramatic activity brought about 'group feeling,'" Mr. Parker said. "The wounded man often suffers from a sense of isolation, since he is cut off from his friends, and draws himself into a shell. In the dramatic workshop, which was one phase of the reconditioning program, the men found fellowship and a welcome outlet for hidden talents," he said.

The University designer was a designer-technician at Camp Upton.

**DEBATERS' NOTICE**  
WE HAVE held back a considerable supply of debate material for convenience of late comers, but we are now releasing it. Schools short of the Handbook or of the Editorial Research Report, or of the Annals may now be supplied further copies. Address all orders: Interscholastic League, Box H, University Station.

## League Legislative Advisory Council Has Busy Session in Austin Nov. 17

### 22 Members Present; Every Section of State Represented

#### Important Recommendations Made to State Executive Committee

THE FIFTH annual meeting of the Interscholastic League Legislative Advisory Council held a busy session from 7:30 A.M. Saturday, Nov. 17 until 1 P.M. during which many League problems were discussed, and important recommendations were made to the State Executive Committee. Breakfast was served at 7:30, which was followed by a 4-hour session. The council members had luncheon together before adjournment at 1 P.M. Both meals were served in the Mirror Room of the Driskill Hotel in which the business session was also held, so there was little loss of time.

Members of the council present at the meeting were: R. B. Norman, Amarillo; H. B. Burton, Clarendon; A. L. Faubion, Lubbock; W. C. Blankenship, Big Spring; E. M. Connell, Anson; Terrell F. Graves, Coleman; Jack Ryan, McKinney; H. O. Harris, Sanger; E. N. Dennard, Marshall; D. T. Lloyd, Gilmer; W. C. Cummings, Bonham; R. B. Sparks, Goose Creek; V. W. Miller, Pasadena; E. K. Barden, Sugar Land; H. A. Moore, Kerrville; E. T. Robbins, Taylor; J. Milton Edds, Temple; S. V. Neely, San Benito; J. W. Roach, Alice; Walter Coers, Orange Grove; Murry Fly, Odessa; B. A. Copass, Iraan.

Absent: R. D. Lee, Monahans; W. B. Alexander, Bowie. Roy Bedichek, Director of the League, presided; R. L. Kidd, Athletic Director, also met with the Council. H. E. Moore, Kerrville, Texas, was elected secretary of the meeting.

The chairman announced that minutes of the last meeting had been published in the LEAGUER. On motion by Miller, seconded by Blankenship, minutes as published were approved. All motions, unless otherwise indicated, are made in the form of recommendations to the State Executive Committee.

**Reports of Committees:**  
E. T. Robbins, Taylor, Chairman of Committee on Awards, made a report on a questionnaire which he and his committee had circulated. (Copy of Report is attached and made a part of these minutes.) Motion by Dennard that it be submitted by conferences. Motion ruled out of order on objection by Moore to the effect it contained two proposals.

**Awards Rule:**  
Motion by Dennard that awards rule be amended raising the limit to \$15.00. Motion failed for want of second.

Motion by Fly and seconded by Harris that awards rule be re-submitted by conferences. Discussion by Graves, Copass, and Connell. Motion was lost.

Motion by Barden, seconded by Blankenship that the \$7.50 limit prescribed in Article XIII, Section 5, be raised to \$10.00. Motion carried.

**Conference A State Football Championship:**  
Report of Committee on installation of a State Championship in

(Continued on p. 4, col. 3)

## House Resolution Commends League

### Sports Writers Association Also Receive Praise in H.S.R. No. 280

IN THE concluding days of the last session of the Legislature, the following resolution commendatory of the University Interscholastic League and the Sports Writers Association for the service to the state of these organizations in promoting clean sports and healthy competition in many different fields:

H. S. R. No. 280

#### RESOLUTION

WHEREAS, The Texas Interscholastic League, sponsored by the Extension Department of The University of Texas, is celebrating its twenty-fifth (25th) anniversary; and

WHEREAS, The League sponsors State competition of all sports in the schools of our State including football, basketball, baseball, track, tennis, together with debating, declaiming, extemporaneous speaking, one-act plays, and many other phases of the school curricula; and

WHEREAS, This program is the outstanding youth program of the Nation; and

WHEREAS, In 1945, six hundred and thirty-eight (638) schools with seventeen thousand, three hundred (17,300) boys partici-

(Continued on p. 4, col. 2)

## Veteran Dean of NTAC Says Pure Vocationalism Wont Do

### Argues Against Separative Tendency of Technical Institutes

(By Dean E. E. Davis\*)

I CANNOT better introduce this topic than to quote from an address by Dr. Harry S. Rogers, President, Polytechnic Institute of Brooklyn, and President of the Society for the Promotion of Engineering Education, in which he defines a technical institute, as follows:

1. It is a school of post-secondary character but distinct in character from a college or university.
2. Its admission and graduation requirements are less formal and less standardized than those of the college.
3. Its programs vary in length, are shorter than those of the college, and are terminal in nature.
4. Its purpose is to train men and women specifically for occupations which lie between the skilled crafts and the scientific professions.
5. It aims toward intensive preparation and immediate competence in a specific occupation rather than toward a temporary junior professional experience.
6. It offers programs built around specific job or occupational functions of a sub-professional nature in design and planning, construction and production, testing and inspecting, and operation and maintenance, as well as the duties of supervisory positions.
7. Its courses are built around shop, laboratory, and office practices rather than around abstract principles and their applications.
8. Now, I suppose we have had our thinking focused pretty largely on the trade institutes as related to the chemical, mechanical, electrical, and metallurgical fields. But the term technical institute covers agriculture, business, the food industries, and also the needle industries, as well as many others.

Not Only a Physical Science  
It will be noted that President Rogers places all the emphasis on the physical characteristics of the physical sciences. For instance, in the subject of farming, which he

includes along with his other categories, he takes no note of the fact that there are many nonphysical essentials not met on the farm itself: essentials such as these embedded in tariff laws, in transportation and freight rates, and in complicated matters like the relation of interest rates to farm prices and the relation of the prices of

(Continued on p. 4, col. 7)

## Atomic Bomb Is Product of Research in Many Nations

IT IS to be feared that a misguided patriotism is inclining many Americans to the belief that the Atomic Bomb is a development to be credited exclusively to American genius. Representative Chet Holifield, of California, compiles a record which deflates these chauvinistic claims quite effectively, while giving due credit to the American contribution. Here is the record:

Lord Rutherford was the great Englishman in this field, the man who first chipped the atom without splitting it. He was English.

Madame Eve Curie and husband Pierre. None of the work in atomic bomb research would have been possible without the facts which they dug out. She was Polish, he French.

Albert Einstein himself, pioneer and founder of the basic theoretical work in this field. He was born in Germany, is now an American.

Neils Bohr, a famous pioneer in this field and in the subject of "heavy-water." Bohr is Danish.

Three people actually split the atom in Berlin in 1939; a woman, Lise Meitner; Otto Hahn, Nobel prize winner (now in Russia); and Franz Strassman, German. In passing, one can only note the terrible retribution wreaked on Germany by its own attitude of narrow scientific nationalism, and outrages

against the Jews. It was destroyed by those it outlawed.

Otto Laue, one of the world's outstanding physicists, now in Russia. He is German.

Joliot-French. An outstanding nuclear physicist who went practically as far as the Germans in 1939 and has perhaps gone even further now.

Kapitza, Russian. Another celebrity who has been working in Russia on atomic physics.

Enrico Fermi, Italian. He couldn't stand dictatorship and left Mussolini, as German scientists left Hitler. He was one of the three or four leading physicists on the U.S. atomic bomb project.

Leo Szilard, Hungary. Another of the leaders of the bomb project.

Commenting on this record in a recent issue of the *Christian Science Monitor*, Richard L. Strout says:

"That is a partial list. There were famous native-born Americans too, of course. Arthur Compton's name is among those near the top and there are many others, like Professor Oppenheimer, though I doubt if the latter's name, either, was on the Mayflower passenger list.

"The point is, in all seriousness, that these men of physical science have already created their own league of nations, that their great discoveries leap across the world like lightning flashes regardless of national boundaries, and that it would be folly, even were it possible, which it is not, to make them work for a single nation alone rather than for all humanity."

## Dallas Schools Grow With City

### Ambitious Program Outlined Under Leadership of New Superintendent



W. T. White, Superintendent of Schools, Dallas

TO BETTER the financial conditions of the schools, to sponsor a building program in keeping with the growth of Dallas, to institute

a satisfactory lighting system in classrooms, to round up truants and absentees, and to stiffen academic requirements for promotion—these are among the objectives of Warren Travis White, B.A. and M.A. from The University of Texas, recently elected superintendent of Dallas Public Schools.

After serving as first lieutenant during World War I, he was superintendent of the Fairview Independent School District, Wichita County, for four years, and superintendent of Bonham Public Schools for four years.

He became principal of Sunset High in 1931, where he served until 1941, at which time he was made assistant superintendent in charge of high schools.

During his ten years at Sunset he organized the school in such a way that it became known all over the State for the attainments of its students, not only in athletics, but also in art, music, speech, and various academic achievements. The school spirit built up during his term as principal is still going strong, making Sunset known as one of the outstanding high schools in the State. His many friends in Dallas feel that he will be as successful in putting forward the whole Dallas system as he was in advancing Sunset.

## Win 1st Honors in National Debate Meet

NATIONAL debate honors were won last summer by former Interscholastic League Speech contestants, Leon Nad and Melvin Dow. They were declared first place winners in a nationwide contest at St. Louis sponsored by A.Z.A., a Jewish fraternity which conducts conventions in seven districts to qualify debaters for the national meet. Leon and Melvin won in the New Orleans district in competition with entries from seven southern states. The subject debated was the League's current topic, "Compulsory Military Training."

While attending San Jacinto High School (Houston), Leon Nad was well known for his unusual speaking ability, and as final proof of his talent he placed first in Extemporaneous Speaking at the 1943 State Meet. After graduation in 1943 he entered Rice Institute to major in Business Administration. He is the son of Mr. and Mrs. Irving Nad, 2319 St. Emanuel, Houston.

Melvin Dow comes from a family of debaters, both his parents having won high honors in Interscholastic League debate during their school days. In 1943 Melvin was a member of San Jacinto High's second place winning team in the State Meet, and in 1944 he returned to take first place honors. He joined his team-mate at Rice Institute following his graduation in 1944. Parents are Mr. and Mrs. Harry Dow, 3014 Rosewood, Houston.



Leon Nad



Melvin Dow

## Shall We or not Have Girls' Interscholastic Athletics?

(By Lucille Stoll, Lincoln High School, Cleveland, Ohio)

COMPETITION! I wonder if teachers of physical education will ever settle the

problem of competition for girls to the satisfaction of the majority of leaders in the profession? If such a Utopia ever comes into existence, I wonder how long it will stay in vogue—certainly not long, if past experiences are any criteria for predicting the future.

#### Much Agitation, Pro and Con

For twenty-five years or more feminine leaders of physical education throughout the country have discussed the necessity for safeguarding health, the effect of wise leadership, character and citizenship training, appropriate policies, and so forth. Since 1923, the Women's Division of the National Amateur Athletic Federation has conducted a strenuous campaign with these goals in mind, attempting to discourage intense and highly specialized competition. The leaders came a long way and picked up momentum in the form of support and encouragement from teachers and administrators. The physical education profession moved forward and standards were formulated. The ferment of dissatisfaction over interscholastic athletics so much in evidence fifteen years ago apparently quieted down and teachers were bragging about the educational forces inherent in their programs.

Today, our intramural programs are well developed. Tournaments are conducted in individual as well as team sports. These activities are outgrowths of our regular class instruction periods, and we have attempted to raise our standards by providing equal opportunity for all players under the supervision of qualified and well-trained leaders.

#### But We've Lost the Girls

While we have been thus engaged, other forces in the community have been doing their bit in organizing activities for girls and women. One has only to pick up the daily paper and to read about the new records made in recent track meets and swimming meets, to see the pictures of visiting teams from Oregon, Missouri, et cetera, to realize that we have somehow failed to adequately meet the situation. We might be less upset if

(Continued on p. 4, col. 6)

(Continued on p. 4, col. 5)

\*This is a portion of an address delivered by Dean Davis at a meeting this scholastic year of the NTAC Faculty Study Club.



Published eight times a year, each month, from September to April, inclusive, by the Bureau of Public School Service, Division of Extension, The University of Texas.

ROY BEDICHEK Editor

(Entered as second-class matter November 6, 1927, at the post office at Austin, Texas, under the Act of August 24, 1912.)

Vol. XXIX DECEMBER, 1945 No. 4

WE HELD copies of the debate handbook in reserve for schools asking that they be reserved, but we can not keep these books indefinitely; so after giving due notice, we are now releasing them, first come first served.

THERE is an increasing demand for county meet organizations. Of course, grade schools may be conveniently organized on a county basis, and in many counties, a Conference B district may be arranged wholly within the county.

COMPLETE tentative list of assignments to Conferences and Districts for Spring Meets will be published in the January issue of the LEAGUER. The fact that certain schools appear in the list who have not paid fees this year is not to be taken as an indication that they are eligible to compete.

THERE seems to be some misunderstanding as to the effect of the amendment to the Age-rule voted recently which appears in the "Official Notice" column of this issue. Note that the present rule remains in effect except in one little particular, and that is it lets in for competition in the State Meet contestants who become 18 years of age after May 1 the preceding year.

WE PUBLISHED in the November issue of the LEAGUER the concluding installment of Julian Smith's "Summer Camps," conducted in Michigan under the auspices of the public schools. Dr. L. A. Woods declared recently that we are on the road (or should be) to a twelve-month school year.

IN THIS ISSUE we are beginning a two-article series on girls' athletics. About this matter a dispute has raged for many years, as anyone will attest who has attended the meetings of women's physical education associations anywhere

The University Interscholastic League Directory

- Organizing Agency: Extension Division, The University of Texas, Bureau of Public School Service. State Executive Committee: T. H. Shelby, Chairman; Roy Bedichek, R. J. Kidd, Thomas A. Rouse, Emmette Redford, B. C. Tharp, C. A. Wiley, DeWitt Reddick, H. A. Calkins.

throughout the country. The dispute is still very much alive and difference of opinion is such that one may start a row about it in almost any gathering of teachers. However, there is now a development taking place which is focussing attention upon the matter with greater urgency than ever, and that is the inroads which are being made by non-school organizations upon the girls of athletic ability.

WE have a friend, learned in the Scriptures (name withheld by request), who puts an entirely different interpretation on Job's exclamation, "O that mine enemy might write a book!" It is customary to apply this in literary criticism so as to suggest that one who writes a book exposes himself to the flaying of the critics.

"WE WANT to do something for the boys," is a statement which frequently occurs in our correspondence relative to the enforcement of the "Awards Rule." This statement puts, or seeks to put, upon the League organization the burden of denying some benevolently inclined group the privilege of "doing something for the boys."



Article VIII, Section 1: Age Rule Referendum on this rule-change published in this column, October issue, was carried 445 to 81. The age-rule will appear therefore in the next edition of the Constitution and Rules, with the following amendment:

"No one shall take part in any contest in this League who, on the first day of the May preceding the contest has reached or passed his eighteenth birthday."

Explanation: The age-rule reads as follows: "No one shall take part in any contest in this League who, on the first day of the May preceding the contest has reached or passed his eighteenth birthday."

"College Course" Interpreted Article VIII, Section 4, bars college contestants from participation in any Interscholastic League con-

test. And a "College contestant" is defined in this section as a pupil "who has ever enrolled for as much as one college course."

Slide Rule Bulletin In the list of bulletins published in Appendix IV of Bulletin No. 4527, page 102, no price is given for the pamphlet, "How To Use a Slide Rule."

2-Grade "High Schools" Some small schools retain only the ninth and tenth grades and send the 11th and 12th grades to some larger center.

Junior High School Assignments Junior high schools are given a district to themselves wherever a group of them located fairly close may be found.

Post-war tourist: I do hope we can get to Italy soon. I'd love to see all the new ruins.



MISS THERESA JENNINGS, adviser of "The Technician" (San Antonio) propounds a question for discussion in this column which undoubtedly troubles many editors and advisers.

Let's recognize to begin with that there can be no substitute for a thorough and complete coverage of all news events in the school. Such coverage is discussed in an I.L.P.C. pamphlet issued last year; so we will not explore further in that field now.

Features Help 1. A carefully planned increase in the use of bright features. A letdown from the pressures and the seriousness of the war is inevitable; and editors of professional newspapers and magazines have already recognized this letdown by an increased emphasis on entertainment material.

Get Local Angle Many important news events can be explained and localized through interviews with someone in the school. The "Tyler Lion's Tale" early this year devoted two front-page columns to an interview with the chemistry teacher, explaining in detail how the atomic bomb was made to work.

Those ordering bulletins should read carefully the description of the bulletin given below and the terms upon which it is distributed. Stamps are not accepted in payment for bulletins, and bulletins are not sent C.O.D. or on account.

ers. The "Dallas Tech Talk" has followed such a policy for years. Such features are good only if centered around a truly humorous incident and if told in 60 words or less.

How About a Camera? 2. Increased use of pictures. If possible, get a staff camera and train a staff cameraman. Outs soon will be cheaper in price.

3. Backgrounding the news. Readers of high-school papers should be much more alert to State, national, and international news than before the war; and the school paper should keep such interest alive.

Current Publications Issued by the University Interscholastic League Those ordering bulletins should read carefully the description of the bulletin given below and the terms upon which it is distributed.

Constitution and Rules of the Interscholastic League (1945), No. 4527, 111 pages, 10 cents per copy. Contains rules and regulations governing all contests of the University Interscholastic League.

Compulsory Military Training. Official debate handbook for 1945-46 scholastic year. \$75 per copy. This bulletin of more than two hundred pages contains arguments pro and con on the debate-question adopted by the League as the official question, stated on page 28 of this edition of the Constitution and Rules.

Reducing Voting Age to Eighteen, 60 cents per copy (1944), 200 pages. Briefs and selected arguments on the 1944-45 debate question.

Equalization of Educational Opportunity (1941), No. 4138, 250 pages, single copies 35 cents, four copies for \$1. This bulletin contains arguments pro and con on the Interscholastic League debate query for the school year 1941-42.

The Natural Resource Tax (1940), No. 4038, 250 pages, single copies 35 cents, four copies for \$1. The debate question for the school year 1940-41 proposed an increase in taxes on natural resources, and this bulletin contains a wealth of material, both negative and affirmative.

Socialized Medicine, No. 3938, 250 pages, single copies 35 cents, four copies for \$1.00. Affirmative, negative and general briefs of the 1939-40 League debate question, prepared by Dr. Joseph M. Ray, Associate Professor of Government, North Texas State Teachers College.

"Limiting Taxes on Tangible Property" (1932), No. 3228, 10 cents. Contains briefs, selected arguments and authoritative statistics on the following debate query: "Resolved, That at least one-half of all State and local revenues in Texas should be derived from sources other than taxes on tangible property."

"Equalizing Educational Opportunity," two volumes, 1934, Vol. I, 220 pages; Vol. II, 224 pages, 25 cents per volume. These two bulletins were prepared by Mr. Bower Aly for debates in the League during the school year of 1934-35.

"Nationalization of Munitions" (1936), No. 3638, 225 pages, 10 cents. The question for debate in all Interscholastic League matched debates for the 1936-37 school year was: "Resolved, That the Manufacture of Munitions of War Should Be a Government Monopoly."

"Making Friends in Music Land," Book II (1926), No. 2637, 75 pages, 10 cents. This bulletin was prepared by Dr. Lota Spell for use in the Music Memory contests in the League a number of years ago.

"Making Friends in Music Land," Book VI (1935), No. 3540, 80 pages, 10 cents. Same description as Book II, except that different selections are treated. Single copies 10 cents; twelve copies for \$1.00.

"Making Friends in Music Land," Book VIII (1941), No. 4140, 100 pages, price 15 cents per copy. Each of the selections contained in the 1942-43 music memory list receives attention in this bulletin.

"Developing Number Sense" (1945), No. 4526, 32 pages, 10 cents. Written by John W. Calhoun, Professor of Applied Mathematics, The University of Texas. This bulletin is a revision of the bulletin issued by the League under the same title in 1926.

Word Lists for Interscholastic League Spelling Contest (1945), No. 4533, 16 pages, 5 cents per copy. The word lists for the three divisions in this contest are published in this bulletin, and the word lists are necessary for preparing pupils to engage in this contest.

Art Appreciation Studies in Fourth and Fifth Grades (1940), No. 4036, 15 cents per copy, 1^ copies for \$1. Mrs. Florence Lowe Phillips is the author of this bulletin which was designed for use in the "art appreciation" part of the curriculum in art for intermediate grades.

Favorite Pictures (1941), No. 4136, 15 cents per copy, 10 copies for \$1. A collection of stories concerning the pictures and the artists included in the 1942-1943 picture memory list.

"Picture Study in Elementary Grades" (1936), No. 3634, 50 pages, 10 cents per copy. This is a collection of articles published in the Interscholastic League under the title, "Picture Appreciation," by Miss Florence Lowe, Head, Art Department, Sam Houston State Teachers College.

Art Appreciation Studies (1943), No. 4336, 62 pages, 15 cents per copy, 10 copies for \$1.00. By Waldine Hunter. This bulletin describes briefly pictures selected for their suitability in illustrating various phases of the "art appreciation" part of the curriculum in art for intermediate grades.

A Prescribed List of Plays (1944), No. 4425, 12 pages. A list of 350 One-Act Play titles for use in League contests. Listed according to title, author, number of characters, type, royalty, and publisher.

A Prescribed List of Junior Declamations, No. 4144. Price 10 cents. A list of 3,000 titles of poems for use in League contests. Listed alphabetically according to title, author, and the books in which each poem is found.

The Speech Teacher and Competition (1941), No. 4142, 75 pages, 25 cents per copy. Part I of this bulletin, the use of competitions as a method of teaching is discussed from a historical and theoretical standpoint by Roy Bedichek, Director of the University Interscholastic League.

Sing We All Noël, Christmas and Twelfth Night Suggestions for Home, School, Church, Recreation Center, Club and Community, by Augustus Delafeld Zanig. No. 4147, 42 pages. Price 15 cents per copy.

Now is the time to begin preparation for a big Christmas celebration in school and community. Music is the soul of the Christmas celebration, and here in this bulletin you will find many suggestions, not only for music but for various ceremonies.

Senior Declamation Bibliography. A list of thirty-four books and publications containing Senior Declamations. Some contain both Senior and Junior Declamations. This bibliography is sent free.

Relationship of Scholarship in School to Later Success in Life. Fifteen-page pamphlet containing reprint of a series of articles by Dr. H. Y. Benedict, late President of the University of Texas, published in The Interscholastic Leagueur.

Victory Physical Fitness Clubs, Instruction Manual. 32 pages. For free distribution. Here is a manual which is prepared with a view to using in physical education even teachers who have had no formal training in the field.

Athletics—For Better or Worse. By Dr. Chas. W. Flint, formerly Chancellor, Syracuse University, 30 pages. Dr. Flint is a recognized authority on athletics. His analysis of the evils of athletics is keen and searching, while his estimate of the educational value of athletics is based not only on theoretical study, but upon years of experience in practical administration of the same in school and college.

Typewriting and Shorthand Tests. Fifteen-minute typing tests, of the same nature as tests used in Interscholastic League Typewriting Tournaments, seven copies per copy, fifteen cents per dozen. Sixty-word, seventy-word and eighty-word shorthand tests, as used in Shorthand Tournaments, 5 cents per set.

"Number Sense" Test Sheets. For practice tests in "number sense." One cent per sheet. Key for grading problems is sent with each order. No order filled for less than ten copies of a given test. Be careful in ordering to call for "Number Sense" tests.

The Interscholastic Leagueur. Monthly publication, official organ of the League, mailed free on request to any teacher in Texas who is coaching or training pupils for participation in League contests.

Speech Teaching: A Vital Problem in Public Education, by Harry G. Barnes, Ph.D. The Interscholastic League Breakfast and Section Meeting, November 27, 1936, voted unanimously to request the League to issue Dr. Barnes' address in pamphlet form.

How to Use a Slide Rule, 20 cents per copy. Bulletin of 37 pages giving detailed instruction in use of slide rule and many illustrations. Also tests are available at 1 cent per copy, 10 cents per dozen.

All orders for bulletins or other League publications should be addressed to: INTERSCHOLASTIC LEAGUE, University Station, Box H, Austin 12, Texas.

# Debaters' Clip-sheet of Arguments for Against Compulsory Military Training

(By Hon. Chat Holifield, Congressman from California)  
(Reprinted from Congressional Record, July 17, 1945, pp. A3782-A3784.)

## National Security and International Affairs

**For:**  
IN the 168 years of its existence, the United States has had seven major wars, all undertaken with various degrees of unpreparedness. Realism demands that in the future we prepare continuously for whatever emergencies may come.

**Essential for Security**  
In spite of any peace terms that may be made and any system of international co-operation that may be established at the end of World War II, compulsory military training is essential to the future security of the United States.

Universal military training is the only dependable way in which the United States can match the military strength of other world powers.

For defense against sudden attack in undeclared wars the United States should have at all times a large reserve force of trained civilians—perhaps a constant reserve of about 10,000,000 men. This would be more economical and more effective than to maintain a large professional military establishment.

Because of technological advances the geographic location of the United States no longer affords sufficient protection to permit adequate preparation for war after it has been declared.

**The "Ounce of Prevention"**  
Military preparedness not only affords safety in case of attack but is the best way to prevent attack. Thus, in a nonaggressor nation such as this, it promotes peace.

Universal military training would give the United States greater stature in international affairs; create greater respect for our international policies and proposals.

In the United States universal military training would always be regarded as a defense measure. Committed as we are to the principles of democracy and the right of self-government, our military force—no matter how powerful—would never be used in a war of aggression.

**Against:**  
There is no convincing proof that universal military training from the beginning of our national life would have prevented any of the major wars in which we have engaged and the outcome, in each case, has been satisfactory.

**Now Not the Time**  
Universal military training will be entirely superfluous if suitable peace terms and a workable international organization can be developed. The introduction of universal military training now would be a retreat toward isolationism, would deny our faith in world co-operation and would jeopardize any plan of international collaboration that may be developed.

Military training alone would be no guarantee of security, or victory, if the United States were to come in conflict with a highly industrialized China or Russia with manpower and production in excess of our own.

For defense against sudden attack the United States should have, not an enormous reserve of common soldiers with training only more or less up to date, but a powerful Navy, a large and effective Air Force, and a well-equipped mechanized Army that is highly mobile and has plenty of striking power.

Assuming that the Navy, Air Force, and Regular Army are strong enough to withstand the first shock of a surprise attack, a well-educated citizenry, together with a highly developed industrial and agricultural life, afford the only basic protection that is needed in the United States. Specific military training en masse can be given after the threat of war appears.

**Armament Race**  
Active military preparation stimulates armament rivalries and tends to provoke wars rather than prevent them. That compulsory training does not prevent aggression, witness the German attack on France and Russia, particularly.

Peacetime conscription would cause other nations to regard us with suspicion, particularly our Latin-American neighbors who would resent this obvious threat of interference in their affairs.

A powerful military machine, to military and political leaders, is ever a source of temptation. It could lead, even in the United States, to overaggressiveness in international affairs and perhaps even to imperialistic ambitions.

## Trained Reserve Needed For Postwar Service

**For:**  
FOR several years after this war ends, the responsibility which the United States will have in policing various regions will require a large military force.

Because of the unrest and uncertainty which are sure to follow World War II, the United States should have a trained reserve ready for any emergency.

**Against:**  
Although the size of the military force needed after war ends cannot be accurately determined now, every probable need can be met with those trained under the present Selective Service System.

The seven to ten million veterans and trainees who will return to civilian life at the close of this war will constitute a reserve adequate for any emergency for a period of at least 10 years.

## Preparedness Prevents Needless Casualties

**For:**  
UNPREPAREDNESS at the outbreak of the war always results in hasty, partial training, which in turn results in a large number of needless casualties.

In order to train a large reserve army the United States would necessarily have at all times, a considerable stock of military equipment and supplies. In the absence of such a program, the tendency is to allow these stocks to dwindle.

Universal military training would give our reservists an esprit de corps which is never developed in a hastily-assembled civilian army. If called to combat duty the reservists would be a professional, not an amateur.

Compulsory military training would develop physical fitness, generally, and build the toughness and stamina which are essential to effective military service.

After we are engaged in war there is not sufficient time to give a conscript army the training the men should have in basic military facts and skills.

**Against:**  
Training given when needed is up-to-date, not out-of-date. Without extensive retraining, a reserve army, too, would be subject to the "casualties of ignorance."

Existence of standard equipment and supplies may be a handicap rather than a help, leading to the use of obsolete materials. Without a large stock pile our armies must be equipped with new materials produced to latest specifications.

Much of the success of our armies in all wars is attributed, by some military authorities, to the fact that they have been composed of civilian rather than professional soldiers—men who were fighting to defend their homes or their ideals rather than disinterested, well-disciplined regulars.

Most of the reservists, if away from training a year or more, would require essentially the same toughening up schedule as if they had never been in service. Military training would do nothing for those rejected because of defects.

Physical fitness, not specific military instruction and drill, has been the outstanding training problem both in the present war and in World War I.

## After War Starts It's Too Late to Prepare

**For:**  
PREPARATION after war begins must necessarily result in extravagant outlays for the necessary military equipment and supplies. The step is too great in changing over from peacetime to wartime production.

Manufacture of the equipment and supplies used in the training program would provide employment for thousands of people and thus add a substantial amount to our annual national income.

The boys in training would be off the labor market, out of competition with older men, and the total number of gainfully employed persons would be permanently reduced by narrowing the age range of employment 1 year.

**Against:**  
A continuous program of military training at an estimated annual cost of two to four billion dollars would, in the long run, be less economical than periodic preparation which admittedly involves a certain amount of waste. In addition to the actual cash outlay,

peacetime conscription would keep about a million men out of productive pursuits at all times.

Production for military purposes is economically unsound, since the output is focused on destruction. Economically, from every point of view, extensive military training represents the choice of guns rather than butter.

Because of the pool of unemployed persons which regularly exists, a system of compulsory military training would have little influence on the labor market except for the first year. About the same number of new workers would be seeking jobs each year, whether at age 18 or 19.

## Military Training Promotes Public Health

**For:**  
THROUGH induction procedures health defects would be discovered, and, in many cases, would be corrected. Thus the whole level of health would be materially lifted in the United States.

Military training establishes good health habits and teaches personal health care. These are valuable assets in civilian life.

Military training develops acquaintance with outdoor living and independence in taking care of one's self under whatever circumstances arise.

**Vocational Education**  
The proposed year of military training would include not only basic military instruction and drill but also, in a large per cent of cases, a valuable program of vocational education.

Military training is a valuable experience in citizenship. If universally required, it would increase patriotism and give each trainee a feeling of personal investment in the country's welfare. It would teach the responsibilities as well as the rights of citizenship.

Military training affords valuable lessons in co-operation, efficient teamwork, assumption of personal responsibility, and so on.

In their military training, many boys would find vocational interests and aptitudes and lay the foundation for their peacetime careers.

**Self-Reliance Engendered**  
In military camps, many would be removed from a too-sheltered home life, would overcome homesickness, and gain that degree of personal self-reliance necessary to their own success.

Military training would often bring out qualities of leadership and administrative ability which had not been discovered and developed in civilian life.

The discipline imposed during military service would be a valuable asset to the individual all through life. Everyone needs a wholesome respect for duly constituted authority and the habit of prompt obedience to it.

Military training would afford opportunities for boys to travel about over the United States, become acquainted with the different regions, and to experience something of the frontier adventure once available but now virtually gone.

**Against:**  
Induction age is too late to check up on health defects. This should be done through an adequate school-health program beginning with the first grade and extending through the entire period of school attendance.

**Health at Lower Cost**  
The health improvement claimed for military training could be achieved at lower cost and with better results through adequate school- and public-health programs.

The same degree of self-reliance in outdoor living which military training gives can be acquired in nonmilitary activities, notably in well-planned camps for older children and youth.

Vocational training, the same as education of other types, should be the function of the schools rather than the Army.

Citizenship in a democracy can be taught more effectively in schools and in civilian pursuits than in an army camp. Even a period of national service, if that were deemed advisable, might be required without resort to military training.

Effective teamwork and group loyalty can be developed—are being developed—by schools, camps, and many other nonmilitary agencies.

**Interrupts Education**  
Compulsory military service would necessarily interrupt either the educational or occupational plans of young men and tend to postpone the time when they could marry and establish homes.

The moral atmosphere of military camps usually is not the most

wholesome. Probably the dangers from this quarter are fully as great as that of an excessive amount of "apron-string" control.

Those who would "find themselves" through military training must be balanced against those who, because of the delay, would not go on to college and whose vocational plans would be revised downward.

Enforced obedience, as exacted in military discipline, is not the conduct pattern needed in a democracy. Military life makes a small contribution to self-discipline and to harmony in personal relationships.

Due to improvements in travel facilities we are well on the way toward the elimination of provincialism. Travel is neither an adventure nor a novel experience for a substantial number of American youth.

## Extemp. Topics

IN ADDITION to the topics already assigned, are several more on the atomic bomb which still commands the leading position of current subjects in the news. A number of other general headings appear in the list on account of the vast amount of space they are occupying in periodical literature. New general subjects follow: Merger of Armed Forces, Health Insurance, Housing Problem, Wage Controversy.

Under each of these subjects, topics are selected for assignment as follows:

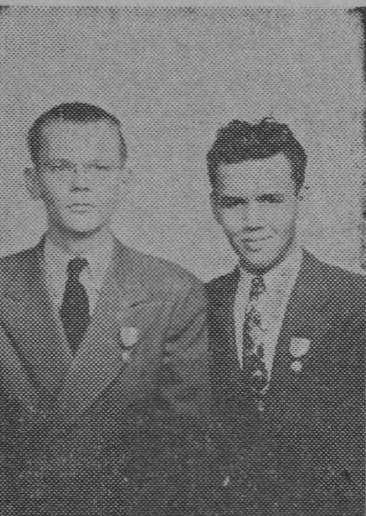
- The Atomic Bomb**
  - Development and Use Against Japan
  - Shall England, America, and Canada keep or Share this Secret?
  - Peacetime Uses of Atomic Energy
  - Truman - Atlee - King Agreement on the Control of the Atomic Bomb
  - Should the United Nations Security Council Control the Atomic Bomb?
  - What the Atomic Scientists say About Keeping the Secret
  - World Government or World Destruction
  - Atomic Bomb and Future Wars
  - Effect of the Atomic Bomb on Plans for National Defense
  - Ethical Aspects of the Atomic Bomb: Is Its Use Justified?
  - Atomic Research
  - Atoms: What Do We Know About Them?
- The United Nations**
  - The Charter
  - The Postdam Agreement
  - Conference of Foreign Ministers
- Discharged Service Men**
  - Charges of Unnecessary Delay in Demobilization
  - Adjustment of Discharged Service Men to Peacetime Employment
  - Continuation of Education
  - Rehabilitation of Disabled Veterans
- Full Employment**
  - Provisions of Full Employment Bill
  - Argument for the Bill
  - Case Against the Bill
- The Truman Administration**
- Merger of Armed Forces**
  - Why Army, Navy, and Air Force Must Combine at the Top
  - Why the Navy Opposes the Merger
- Health Insurance**
  - Will Federal Health Insurance Provide the Best Medical Care?
  - Provisions of the Wagner-Murray-Dingell Bill in Regard to Health
  - Pros and Cons of Socialized Medicine
  - Medical Insurance Plans
- Housing Problem**
  - Housing Outlook
  - Should the Federal Government Support Public Housing Projects?
- Wage Controversy**
  - Should Industry Grant Labor's Demands for a Thirty Per Cent Wage Increase?
  - Would Increased Wages Mean Increased Prices?
  - How Can a Basis Be Found for Industrial Peace?
  - Should Minimum Wages Be Guaranteed?
  - What Should the National Labor Policy Be?
  - Arbitration and Conciliation of Industrial Disputes

\*For rules and regulations governing the content in Extemporaneous Speech, see pp. 36-40, Bulletin No. 4527. Contestants should keep scrapbooks on this topic, clipped especially from daily papers.

## The Speech Arts in Texas Schools

THIS column belongs to Texas Speech Teachers for discussion of speech problems and news concerning speech activities in Texas high schools. Communications should be sent to Mrs. Mae Ashworth, Box H, University Station, Austin, Texas, who is editor of this column.

### Risher and Reed Win AA Debate for Reagan



Franklin Reed, Jack Risher John H. Reagan (Houston)

HIGHEST HONORS for 1945 in Conference AA Debate went to Franklin Reed and Jack Risher, June graduates of John H. Reagan High School. Jack served as reporter of Social Relations during the fall of 1944, and won several debate honors before participating in the State Contest.

Upon his return from Austin, he found orders awaiting him from the Marine Corps, in which he had enlisted in February. He had to report for immediate service, but was awarded his high-school diploma in absentia. His first training station was Parris Island, S. C. and he is now at Camp Pendleton, Calif. Following discharge Jack plans to enroll in college, likely The University of Texas, for a degree in Law. He plans ultimately to engage in politics, in which he is greatly interested. He is the son of J. A. Risher, 502 Pecore Street, Houston.

Franklin was editor of the school paper, "Statesman," during the past year. He was a member of the National Honor Society and graduated with honors.

In July he entered The University of Texas to work towards a B.A. degree in Business Administration. Later he plans to obtain a degree in Law. He was recently invited by the Scholastic Magazine of New York to take the affirmative in the current debate question on the American Forum of the Air program, which was broadcast from Washington, D.C., on November 20. This is an honor that is extended to only four students of the nation each year. He states that the debate was a great success as far as he was concerned. He gained some very valuable experience and thoroughly enjoyed the trip and program. He considers debating of the greatest importance as preparation for college. Since college is intended to teach a person to think, he says debating is the ideal subject to give the required discipline of mind.

He is active in the Wesley Foundation in Austin and recently led a successful campaign selling subscriptions to a Foundation publication. His father is Ira F. Reed, 215 West Eighteenth Street, Houston.

**MAJOR** Thomas Rousse has returned to the University from military leave to resume his duties as Professor of Speech. Shortly before the war, he was elected President of the Texas Association of Teachers of Speech, a position he still holds since there has been no meeting of that Association since. As President of the Association, therefore, he has promised to contribute each month editorial comment to this column. This feature will begin next month.

**News Notes**  
A course in Radio will be offered to Tyler High School students with the beginning of the next semester with I. L. Freedman as instructor. Mr. Freedman was formerly Radio instructor for Wight Field Cadets in San Antonio and at The University of Texas. The course will include radio repair, servicing, fundamentals of electricity, and radio communication.

A musical comedy entitled "The Purple Towers" is scheduled for production at Corpus Christi High during the first week in December.

A new speech teacher in the Canyon High School this year is Mrs. Polly Merchant who formerly served as superintendent of schools at Channing, Texas.

"Every Family Has One" was presented to large crowds by the Red Dragons of Austin High School, November 8 and 9. Miss Naomi E. Davis directed the production.

Zackary Scott, Hollywood actor, who was formerly very active in the Red Dragons and in the Curtain Club of The University of Texas, visited the schools and his former teachers while in Austin early in November.

The production of "The Mad Hatters" by Harlandale High School (San Antonio) proved so successful that three performances were necessary.

A dramatic club has been organized at Quana High School with Miss Pearson as sponsor. A committee has been appointed to select plays for production during the season.

## The Speech Arts in Texas Schools

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**Student Speaker's Bureau**  
Mrs. Frances Dement of the Speech Department of Austin High School (Houston) is doing her share to reawaken interest in the various forms of Speech. Sixteen of the Speech students were members of the Student's Speaking Bureau for the War Chest of Houston this year. The Department wrote the script, and produced the salute to the Navy on Navy Day for the Houston Chamber of Commerce. A student debater of Mrs. Dement's department, R. C. Thompson, is guest announcer for the program "Young Idea" heard every Saturday morning over KPRC.

A two-day Speech Meet for the Houston area is being planned for early in February, to include competition in all Speech activities except One-act Play.

The Dramatic Club at Leverett's Chapel (Overton) is preparing a group of one-act plays for early production. Students will assist in the direction of the shows.

Miss Mildred Marshall of Quana High School, replacing Myrtle Wright who resigned to be married. Miss Marshall formerly taught at Highland Park High School at Dallas.

The Granger High School produced "Let Me Grow Up," a three-act comedy, on November 23 under the direction of Mrs. Lynda Wayman.

The annual play of the Junior Class of Beaumont High School was "Best Foot Forward." Miss Dorothy Coats directed this successful show which was presented on November 16.

**Lanier Open Forum Club**  
The Open Forum Club of Lanier High School (San Antonio) held its first meeting in October with the current debate topic as the subject of discussion. The club meets every Monday to discuss timely problems facing the nation. Armando Pena is president of the group.

The Senior Class of Austin High School (El Paso) is preparing the three-act comedy "The Lovely Duckling" for production on December 7.

The Thespians of Lamesa High School are busy working on the organization of the club and planning their programs for the season. Their first one-act play is entitled "First Rehearsal."

The Footlight Players of Wichita Falls High School presented "Come Rain or Shine" on November 16 as their first major production of the season. This hit-show was directed by Miss Elizabeth Geer and sets were provided by Miss Joyce Samuels' stagecraft class.

On November 8 the Speech Department of Harlingen High School presented a program of skits, a scene from "Golden Boy" and a demonstration of telephone manners. The program was under the direction of Miss Peggy Gowan.

The Junior Class of Grand Prairie High School scored a great success with the production of "Junior Miss" early in November.

In September Howard Townsend resumed his duties as Speech instructor at The University of Texas after a year's leave spent in the Speech Department of the University of Wisconsin.

The Junior Class of Gladewater High School presented the three-act comedy "That Crazy Smith Family" on November 13 and 14 to large audiences. The production was handled by Mrs. Runelle Wright with the assistance of student director David Davidson. Make-up was handled by the Paint and Powder Club.

A series of plays will be produced in assembly by the classes

of Mrs. N. N. Whitworth of Amarillo High School during the months of November and December, including one Christmas play.

New additions to the teaching staff of the Speech Department since the November term began at The University of Texas include Miss Jym Motheral, Miss Sydney Burke, Miss Betty Jo Duncan, Mrs. John Koschak, Mr. Gale Adkins, Miss Marjorie Brau, Mike Holberg, and Martin Todaro.

**1945 Winner Busy Again**  
The Senior Play of Fort Davis High School, "Daddy Long-Legs," will be presented on December 20. The play is being directed by Supt. C. G. Matthews, whose play, "On Vengeance Height," won first place honors in the 1945 State Meet. Three members of the Senior Play cast were in the winning play last May. They are Jane McIntosh, Foster Granger, and Kimball Miller.

The Sunset High School (Dallas) is rehearsing the Senior Play, "A Little Honey," for production on December 8. Mrs. Wanda Banker is directing this domestic comedy. Added incentive was given students of Speech and Drama at Sunset when their famous ex-student, movie-actress Linda Darnell, returned to the school for a visit on November 8.

"Manana Is Another Day" was produced by Brackenridge High School (San Antonio) on October 12 by the Advance Dramatics Class. This comedy of tourists in Mexico was directed by Miss Jeston Dickey.

Shakespeare's "Comedy of Errors" was selected as the first major production of the National Thespians of Abilene High School. This play was scheduled for November 30 in costumes of the 17th century, Ernest Sublett directing.

Arnold Sundgaard, who served as critic judge of the State One-act Play Contest last spring, is one of the founders of a new drama group, Theater, Inc. in New York. While connected with the Drama Department of The University of Texas, Mr. Sundgaard produced a number of his plays, including the world premiere of "The Great Campaign." The New York project is a permanent repertory theater with its acting company headed by prominent guest stars who will perform new plays and revivals. Following the New York engagements, the shows will be sent out on nationwide tours.

**Make Algebra Talk**  
II. Is There Something Less Than Nothing?  
(By J. W. Calhoun)

THIS paper is an effort to remove some of the mystery from negative numbers. These numbers make their first appearance rather early in algebra. They sometimes seem to the student to be something unreal and mysterious.

In arithmetic all numbers are of the same kind. They are either positive nor negative numbers. They are just numbers. In arithmetic if numbers are added, subtracted, multiplied or divided the result is always a number. The only exception to this statement is that in subtraction in arithmetic a number cannot be subtracted from a number smaller than itself, i.e., 5-8 is an impossible operation in arithmetic. This means that arithmetically speaking 8 cannot be subtracted from 5. The operation is impossible.

**A New Kind of Number**  
In algebra we invent a new sort of number called the negative number. We take our old friends, the numbers of arithmetic, and tell them that hereafter they shall be called positive numbers and we call the new numbers that we now invent negative numbers. We use the same digits to indicate negative numbers that we use to represent positive numbers. But we precede each by the minus sign, thus -3 is read "minus three" with the same notation for all negative numbers. We may if we choose write the positive numbers +3, +9, +13 but when no sign appears before a number it is positive; but if a number is negative it must be preceded by the minus sign. Zero is neither positive nor negative and separates the positive from the negative numbers.

It is instructive to picture the numbers, positive and negative as points on a straight line. Some point is chosen to represent zero then all positive numbers will lie on one side of zero and all negative numbers on the opposite side, no positive number is on the negative side and no negative number is on the positive side. The Jim Crow Law operates one-hundred per

cent. It is customary to call numbers on the right-hand side of zero positive and on the left negative.

—4 —3 —2 —1 0 1 2 3 4  
In the above diagram any convenient unit of length may be taken as 1 and thus locate the points representing the positive and the negative integers. Of course, all proper fractions lie between 0 and 1, 2 1/2 lies between 2 and 3, —1/4 lies between —4 and —5 and so on.

**Adding Negative Numbers**  
We must now make a new definition of addition and subtraction, as follows:

1. To add a positive number to any number begin with the number to which something is to be added and count to the right as many numbers as are being added. To add a negative number count to the left.

2. To subtract a positive number count to the left, to subtract a negative number count to the right.

Example: Add 4 to 1. Begin on 1 on the diagram and count 4 to the right, this brings us to 5. This is our familiar arithmetic result. Now subtract 4 from 1. Begin on 1 and count 4 to the left, this brings us to —3. We then have the algebraic result 1-4=-3.

To add a negative number to a given number begin on the given number and count as many to the left as there are units in the negative numbers. To add —5 to 2 begin at 2 and count 5 to the left. This brings us to —3. Then —5 added to +2=-3. Conversely subtracting a negative number means counting to the right.

Hence: To add a positive number or to subtract a negative number, count to the right. To subtract a positive number or add a negative number count to the left.

**What Does "Zero" Mean?**  
Does zero mean "nothing?" In arithmetic the difference between 2 and 2 or 5 and 5 or any two equal numbers is zero. Since there is no difference between 2 and 2 or 5 and 5 it is not unreasonable to say that zero means nothing. But in algebra where we have positive numbers and negative numbers zero is the number that separates them. It is neither positive nor negative but does not mean "nothing." Its meaning is as real as the meaning of any other number.

We may add zero to any number, subtract zero from any number or any number from zero, multiply any number by zero or zero by any number. Zero has the following peculiarities:

1. Any number multiplied by zero gives zero for a product.  
2. Zero cannot be used for a divisor.  
3. 5x7x0x8x6x31=0  
5/0, 1/0, —3/0 are all meaningless expressions.  
If 5/0 could equal some number, say, k then 5/0=k. Clear of fractions by the usual method and we have 5=0k, but zero times k equals zero for all values of k. Hence we have 5=0. This is an absurd contradiction. Algebra will not tolerate contradictions and so will not tolerate division by zero.

**Apply to Thermometer**  
On an ordinary Fahrenheit thermometer the freezing point is marked 32, below that point is the mark zero. This does not mean that at that point there is no temperature. The temperature at zero is as definite a quantity as at any other point. When the temperature is ten degrees above zero we say the thermometer reads 10. When it is ten below zero the reading is 10 but not the same 10 as above. We distinguish by calling ten below minus ten, that is —10. In speaking then of temperature if it is warmer than zero it is called plus, if colder, minus. That is a number indicating a temperature warmer than zero is a positive number, one indicating a temperature colder than zero is a negative number. There is nothing more unreal or mysterious about temperatures lower than zero than temperatures that are higher.

**Apply to Bank Account**  
If a man has \$100.00 in a bank that is called his balance and the amount is written in black ink. If he cashes a check for \$200.00 he now has an overdraft of \$100.00 and his balance is now written in red ink. Black ink balances are what the bank owes to depositors, red ink balances are what depositors owe the bank. Zero is the division point between black and red balances. When a balance is zero the bank does not owe the depositor and the depositor does not owe the bank.

If time since the birth of Christ is called positive then time B.C. would be called negative. Time at the birth of Christ would be zero time. A.D. 100=+100. B.C. 500=—500. Columbus discovered America +1492, Julius Caesar was assassinated in —31. If a gain of \$500.00 is plus, a loss of \$500.00 is minus. This idea can be carried to East vs. West, North vs. South, up vs. down, fever vs. chills and so on ad lib. The next article of this series will deal with the equation.

