The UW-EC Office of Institutional Studies annually has compiled lists of faculty projects, programs, research, and publications. The first three editions*, 1968, 1969, and 1970, are separately bound and on file in the Office of Institutional Studies and in many departments and offices. Subsequent annual reports are filed in this factbook. This year the Current Projects, Programs and Research report was not continued. The pages of Faculty Publications are numbered 58579.QQ in which each QQ is a page number between 50 and 99.

Each report is an attempt by the Office of Institutional Studies to communicate the extent to which UW-EC faculty participate in research and related activities. Information for the compilation is provided by faculty members through the department chairman to the Office of Institutional Studies. This cooperation is appreciated; continuing success of the project is dependent upon it. Suggestions for improvement and notification of errors are solicited.

*These editions do not contain listings of faculty publications. See the appropriate volume of WSU's Publication Abstracts. The 1970 edition is the last of that series.
This paper develops a goal programming model for achieving racial balance in segregated public schools. The model is illustrated and offered as an improvement upon linear programming, a model previously applied in the literature which allows a single objective function only and, in comparison with goal programming, requires more variables and constraints. Goal programming, a member of the general multiple objective linear programming (MOLP) model, improves upon these among other disadvantages thereby emerging as a more efficient tool for student assignment problems.


Canine heartworm disease, caused by the mosquito-transmitted nematode, _Dirofilaria immitis_, has been anaeptic in the coastal areas of southeastern United States for at least half century. Survey of dogs for positive _Dirofilaria_ in north central United States during the past 15 years have revealed 30 to 43% increase of positive cases. Concerned people have sought why this rapid northern movement and offer two explanations: (1) increase in canine travel and (2) reduction of pesticide usage. The mosquito carriers of this parasite are _Aedes canadensis_, _Aedes simulans_ and _Aedes excurcians_. These are all found throughout Wisconsin.


Human cases of arbovirus infections range from mild to very severe illness which may permanently damage the central nervous system and, in some instances are fatal. Wisconsin, according to H.E.W. Center for Disease Control, is considered to be an endemic area for three of the five major types of arboviral encephalitic infections. The three types periodically found in Wisconsin are California (subtype La Crosse), St. Louis and Western. La Crosse subtype of virus has been recorded in Wisconsin since 1963 and is carried by the tree-hole mosquito, _Aedes triseriatus_. To date, this mosquito has been found in 20 Wisconsin counties. St. Louis encephalitis is carried by _Culex pipiens complex_ and is found in all the counties of Wisconsin. Western Equine Encephalitis is found throughout the United States. _Culex tarsalis_ and _Aedes dorsalis_ are the most important vectors of this virus. The mosquitoes have been found in 19 counties. More study is needed for a complete survey.


A program for controlling mosquitoes, whether for public health purposes or for public comfort, should be preceded by a basic survey and accompanied by an operational survey. At the time of collection, a record should be made including the date, accurate location, size of pool, source of water, the number per dip, and the instar of the arval survey should be compiled and appropriate graphs made. Information obtained in this manner can be directly responsible for increased efficiency and effectiveness of a mosquito control program, such as the type of control needed, when to apply the control, and the effectiveness of the control implemented.


Mosquitoes cause great suffering and economic loss because of their blood sucking habit and nuisance factor. They are vectors of malaria, yellow fever, the development of industrial areas, urban sites, agricultural losses, and closed down resort areas. We do have some idea of the mosquito vectors but we are not sure where they are located, their emergence dates, or their habitats. What is the economic impact of these mosquitoes in Wisconsin?


One hundred-fifty questionnaires were distributed to gather specific information about the causes of stress in the hospital-employed medical technologist (MT). Sixty-four percent were returned. The results were analyzed using Friedman's two-way analysis of variance by ranks. Although the causes of stress to the medical laboratorian are many and they are affected by variables within the worker, certain items are more significant causes of stress than others. Physicians, states, the need for accuracy, lack of communication, errors, and overwork are major causes of stress. These are the stressors that must be controlled or modified to reduce stress to the MT employed in a hospital laboratory.


The author describes torn paper activities appropriate for primary age children. Torn paper is "no-fail" so can be a springboard to more ambitious projects.

A national juried show on exhibit throughout the midwest during 1981.

Schminke, Karin, "National Print and Drawing Exhibition," Art Teacher, Volume 10, Number 3, Fall 1980, pp. 4-8.

The author discovered, in a year of teaching art to children at Canadian Academy, an International School in Kobe, Japan, that the theory of Viktor Lowenfeld, who felt that art in the school could help in the development of the "whole child" still holds true. Citing examples of specific children in her school whose behavior and sense of well-being improved through art, the author calls art teachers, when dealing with classroom teachers and children, to remember that art can provide help in encouraging children to express authentic feelings, both visually and orally, which in turn can aid in building the child's self concept.


The exhibit consisted of 20 recent drawings and prints.


The Design Invitational Exhibit was a three person exhibition of design-related work.


The Watercolor Exhibition was a juried show of works submitted by artists from seven midwestern states.

Schminke, Karin, "National Print and Drawing Exhibition," Art Teacher, Volume 10, Number 3, Fall 1980, pp. 4-8.

A national juried show on exhibit throughout the midwest during 1981.


The life cycle pattern of Alloclossidium corti is similar to that of most plagiorchids. The life cycles of other members of the genus are modified by progenesis and the elimination of the metacercaria. Acting in conjunction, these two processes cause an abbreviation of the life cycle which, in several instances, has resulted in the origin of species that are independent of a vertebrate definitive host. A phylogenetic scheme for Alloclossidium and its allies is proposed.


Encysted metacercariae were found on the visceral epithelium of adult specimens grown on the chorioallantoic membranes of chick embryos. They were identified as Alloclossidium Suwensense Shima. This species is known previously only from specimens in Sinotaka quadretta in Japan.


The interactions of cellular and humoral factors of hemolymph of the American oyster, Crassostrea virginica, and several species of marine cercariae were studied. Attraction of hemocytes to dead but not to living cercariae was observed. Dead cercariae were encapsulated in vitro by oyster hemocytes. The plasma of C. virginica was apparently not toxic to the species of cercariae tested.


Scanning electron microscopy revealed that the tegument of Leucochloridioidea Constantiae metacercariae was marked with interconnected longitudinal and transverse ridges. Alteration of the ridges began within one hour after implantation into the chick eel. Ridges were completely lost by the fourth hour, leaving a smooth tegument. Body shape altered from that of a tapered metacercaria to a plump, rounded adult within three days, and was accompanied by doubling of the acetaldehyde diameter. Papillae, present in both the metacercaria and adult, were located on the suckers, genital orifice, and body surface. The microtopography of the tegument consisted of knoblike protuberances that gave the surface a cobblestonelike appearance. Tegmental knobs in the vicinity of the genital pore contained minute, rounded inclusions.

The issue of incorporating the good alleles from two homoyogous populations of a cross-fertilizing species into a single improved population was investigated assuming independent assortment, no epistasis, and either complete dominance (of the favourable or the unfavourable alleles) or additive genes. The selection limit in the foundation stock is a function of the effective population size (N), the proportion (x) contributed by the better source population (P1), the difference in relative fitness between single locus homozygotes and the proportion of loci (that will segregate in the foundation stock) fixed favourably in P1. In real life the last two of these are never known. We therefore focused on the response limits given x = 0.5, 0.75, 0.875 or the optimum value of x (which is a function of the other three parameters). Our general finding was that in situations where N is large enough so that a major portion of the potential can be achieved, the F2 population should be used as the foundation stock when the two source populations do not differ greatly in performance; but when one population performs considerably better than the other, the first backcross (but not second backcross) would be the choice.


Mutations arising in dysgenic hybrids of Urosaphila melagonaster were collected from the zeste-white region of the X chromosome. A preponderance of the mutations affected the zwi locus; many of these were associated with structural abnormalities including inversions, deficiencies, and insertions in bands 344 and 346 of the polytene chromosome map. The extreme sensitivity of the zwi locus to the mutator activity of dysgenic hybrids contrasted with the apparent insensitivity of the zwi locus. Other loci in the zeste-white region were weakly sensitive to the mutator activity. Insertions of two and six bands were seen between bands 344 and 346 in the chromosomes of one of the zwi mutant stocks examined. Another insertion was detected at position 2F4-5 in a different stock. Many of the mutant chromosomes were evidently unstable, as judged by secondary breakage in other parts of the X chromosome. The cytogenetic data are consistent with the idea that mutations arising in dysgenic hybrids are caused by transposable elements which insert preferentially at certain sites on the chromosomes.

* University of Minnesota, senior author.


The unstable chromosomes of Lim (Lim, 1979, Genetics 93:661-701) are capable of generating structural abnormalities of the chromosomes in a rapid succession. A number of features associated with the progressive changes in the structure of the chromosomes are consistent with the notion that the structural changes in the unstable chromosomes are caused by a transposable genetic element inserted at 6F1-2 doublet on the X chromosome. The conclusion was based on the following features: (1) initiation of chromosome restructuring at the 6F1-2 doublet, (2) step-wise progression from simple to complex forms of rearrangements, (3) non-random distribution of the chromosome breakpoints, and (4) confining the restructuring activities to the X chromosome.


In an introductory botany course, especially if it is required of all biology majors, there often appears to be a bias toward animals on the part of the students. This seems to be due, in part, to the misconception that plants are static while animals can move. For this reason I have tried to incorporate exercises in the dynamics of plant growth and movement into my syllabi. One such exercise is a study of plant biorhythms involving sleep movements of leaves. Sleep movements (Nyctinasty) have been recorded in some plants since the time of Alexander the Great. These movements, are especially pronounced in members of the pea family (Fabaceae). During the day, leaflet pairs are spread open, exposing the lamina surface to the light. At night, however, the leaflet pairs close together due to changes in turgor pressure in the specialized cells of the pulvin. It is now known that these nyctinastic movements are not due to the light-dark cycling of the environment, but rather they are the manifestation of an endogenous circadian biorhythm. A simple laboratory procedure is presented which demonstrates the endogenous nature of the biorhythm and which implicates phytochrome as a pigment responsible for synchronizing this rhythm to the environment. Typical class data will be presented along with data from additional modifications of the exercise. Detailed procedures will be available.

DEPARTMENT OF BUSINESS ADMINISTRATION
DR. THOMAS J. BERGMANN, ACTING CHAIRMAN

In Psychological Reports, 1979, Volume 44, the authors provided data pertaining to dogmatism and attained educational levels of 445 managers in an agri-product industry. The report included mean scores on a 20-item dogmatism scale for groups with educational levels of high school or less, some college, college graduate, and master's degree and above. The 1980 publication reports the items, means, and standard deviations for the above-mentioned scale.


This paper seeks to determine common influences which lead academicians to enter the administrative career path. Factor analytic findings provide partial empirical support for the general theoretical model which suggests career aspiration, career opportunity, and ability to perform are the predominant variables accounting for movement into administrative careers. The data further indicate the nature of the motives leading individuals into administration.


Increasing numbers of young people are considering careers in personnel and industrial relations. A key concern of these would-be managers is how they can qualify for entry-level positions. A survey conducted among personnel professionals who do the hiring identified what educational background and experience they look for when choosing individuals to join their ranks.


This book sets out to define, analyze, and make practical strategic suggestions regarding implementation of systems selling, a marketing technique used by industrial wholesalers. The object is to create a contractual relationship with industrial buyers in which buyers pre-select a sole source of supply for their various commodity line supplies needs. So doing reduces ordering costs as the preselected supplier is the sole source. He also contractually agrees to always carry inventory and deliver in 24-48 hours, thus reducing buyer's in-plant inventory requirements. End result is savings in inventory acquisition and possession costs, and manpower/paperwork savings, plus greater productivity and profitability for both.


The task of the marketer is to facilitate the exchange with consumers. This exchange process can be inhibited if consumers face constraints to the purchase. The focus of the marketer should be not only product attributes but also any constraining factors in the purchase environment. The above model provides a framework to identify and discuss these purchase constraints. The constraints facing the consumer could be: marketing, cultural, social, personal, or structural constraints. In addition to the traditional dichotomy of controllable and uncontrollable constraints, it is suggested there are constraints that may not be uncontrollable but may be semicontrollable. A purchase constraint matrix is constructed to outline the constraints and is followed by the implications to marketing managers and researchers.


This presentation is a comment on coping. The source of coping behavior appears to be change. Change is natural, inevitable, but the character of change has changed from the natural forces of nature to the unnatural forces of man. We seem to have lost control of our own unnatural forces. Coping, both individual and societal, is a normal result of the stress this rapid, uncontrollable change brings. Learning to cope is not the answer to our problems. Coping can be restrictive for a society and pathological for an individual. We must change our perspective to gain a new perspective of our world, end our war on nature, quit fighting, and begin to solve big problems which must be solved if we are to have any future beyond coping.


The entire course of human experience is technological. There is an inextricable link between human and technology. Technology can be used as a perspective from which to view man. All human abstractions, whether philosophical, social, or physical ranging from ideas to institutions, are technologies. Man's use of technology has created his world apart from the natural ecology. Study of the course of technological development leads to profound changes in the definition of humanity. As a forcing factor, technology has already radically altered natural evolution. It appears that mankind is on the threshold of a transition to a higher order existence, a higher intelligence. We tend to think of the consequences of being more intelligent, but no other means but highly intelligent action seem to be in order to face the immense problems of our own making which close in on us. Since natural evolution has been disrupted by technological man, technology appears to be the best approach to a revolutionary shift to higher intelligence. Areas of potential breakthrough include technical interventions, such as brain enhancement, genetic engineering, genetic planning, artificial intelligence and attempted contact with extraterrestrials. The consequences of becoming more intelligent appear to be entirely positive and as a result, technological transformation of human intelligence should be accepted and allowed to proceed.

continued

Three alkyl imidazole carboxamides Cn propyl, isobutyryl, n-butyryl, were evaluated as Tithiophiles of porcine pancreatic elastase. The results were consistent with irreversible inhibition in which the inhibitor decomposed at active to generate the isocyanate and imidazole. The isocyanate thus generated reacted rapidly with a nucleophile at the active site to deactivate the enzyme.


AF59Co NMR linewidth measurements are reported which show that hexacyanocobaltate (III) ion may be used as a sensitive probe of protein interactions with anions in aqueous solutions. Applications demonstrated to bovine serum albumin where the probe/complex binding is monitored as a function of pH and is displaced from the protein sites by hexacyanoferrate (III) ion. The general utility of complex metal ions is suggested as a generally approach to the analysis of ion-macromolecule interactions.


Various methods have been developed for representing simple organic molecules in three dimensions, including the Newman, Fischer, sawhorse, and doped line-wedge drawings. However, these methods have been used to represent only bonds in back or, in, and in front of a plane. There remains to be developed a universal method for drawing orbitals in three dimensions and for recognizing orbitals easily as in back of, in, or in front of a plane. We have recently developed a very easily understood analogous method of drawing orbitals in a plane using doted orbitals, plain orbitals, or filled orbitals.


Solvolysis studies on exo- and endo-tricyclo(3.2.1.02,4)octyl-1-carbinyl tosylates 1 and 2 have detected some slight but unusual anionic assistance by the exo cyclopropane ring in this geometrically constrained homocyclopropylcarbiny system compared to the similar solvolysis for the endo isomer. Product studies for the exo tosylate 1 have shown > 95 percent ring expansion via cyclopropane bridge migration, whereas endo tosylate 2 solvolyses by > 99 percent methanol bridge expansion, further reinforcing the concept of cyclopropyl assistance. It is suggested that the back lobe of the 2.4 bond is in an excellent position to stabilize a developing positive charge on the primary carbon through "corner" or "edge-on" participation in this exo system instead of the usual "edge" participation by cyclopropane. A similar type of overlap for the endo isomer is impossible. Corner participation has been observed only rarely for cyclopropanes.

continued

This article discusses some basic chemistry of importance to potters. For example, potters should know about the origin and composition of clay and what changes occur on firing. Also of great interest should be glaze preparation, especially the use of toxic substances such as lead, cadmium and barium. Other items included are redox chemistry (oxidation vs. reduction firing) and salt glazing. The need for potters to have a fundamental chemical background is stressed.


Analytic expressions for integrals of the moments of the optical rotary power and circular dichroism were found. The use of such relationships for testing experimental data is discussed.


The connection between electron correlation and the correlation coefficient was examined for a solvable model of two particles bound by a harmonic potential.


New local scaled relations were derived connecting the wavefunction, the potential and the kinetic energy operator. The standard virial relations were shown to follow as special cases of the local equations.


A sensitive, inexpensively constructed pH stat-autotitrator is described. In the pH stat mode of operation a digitally controlled buret adds titrant to a reaction mixture at a rate proportional to the differences between the solution pH and the stat pH. The digital buret employs inexpensive Hamilton glass syringes (250 ul - 2.5 ml) to deliver titrant at rates ranging from approx. 100ul/min. to approx. 1.5 ml/min. Both the volume of titrant and the pH are displayed digitally and are available as an analog signal for use by an external chart recorder. An equation relating reaction parameters (reaction volume, titrant normality, buffer capacity, and kinetic constraints) to tracking accuracy is derived. The predictions of the derived relationship are of general importance to all pH-based kinetic analyses.


Circular dichroism (CD) has played an important role in our studies on the modification of enzymes and hormones with Co(III). The objective of these studies has been to incorporate selectively substitution inert metal ions at specifically modified sites in proteins as probes of biological function. Significant information concerning the catalytic mechanism of carboxypeptidase A (CPA) has been obtained from a site specific modification of tyrosine 248 with Co(III). The method developed for CPA has been extended to other enzymes and hormones in order to develop an improved method for incorporating stable radioisotopes (57-Co) into proteins. The substitution-inertness of Co(III) provides the necessary stability in these derivatives.


Step by step procedural outline of determining natural and habitual pitches with an instrument called "VISI-PITCH" (Kay Eletrics).


An experimental study comparing vocal parameters and laryngeal appearance of non-smokers, cigarette smokers, and marijuana smokers. Although the subject groups did not differ perceptually, alteration in the appearance of the vocal cords of the marijuana smokers were noted.


A behavioral program designed to reduce and eliminate vocal abuse and laryngeal tension. The written part ofVRT provides background information and the physiological rationale for the treatment procedures, case application information, voice evaluation procedures, and an example of interprofessional communication. This is followed by a step-by-step outline of the procedures. In addition, a detailed clients' vocal exercise program and an appendix containing information on vocal hygiene, directions for parents, and frequently asked questions are provided. The audio part of VRT demonstrates typical voice characteristics, case samples, and therapy procedures. VRT is viewed as a complete auto-tutorial program that can be used effectively by speech-language clinicians and their clients.

continued

Proposal of the term "intermittent abductory dysphonia" to describe irregularity of unvoicing that occurs in some patients.

Peters, Theodore J. and Barry Guitar, Stuttering: An Integration of Contemporary Therapies. Speech Foundation of America, Memphis Tennessee, 1980. 79 pgs.

There has been considerable disagreement over the years about stuttering therapy. In recent years most disagreement has boiled down to a preference for one of two major approaches. Some clinicians have preferred to help stutterers learn not to avoid stuttering, but to "approach it and learn to stutter in simpler and easier ways. This is called stuttering modification therapy. Other clinicians have preferred to teach stutterers to speak in a fluent pattern that can be gradually shaped to normal sounding speech in all situations. This is referred to as fluency shaping therapy. This book shows how it is possible and desirable to integrate and coordinate these two most commonly used therapy approaches in order to retain the advantages of both methods so as to obtain even more satisfactory results.


This text is intended for use in a one-quarter or one semester undergraduate course in international economics. The text's basic material reflects what is currently standard theory found in professional literature. However, the text is not a rehash of other texts in the field of international economics. It represents an attempt to present theoretical material in conjunction with current applications and cases. Based on my teaching experience, I have found that the most effective way to motivate students to learn a subject is to demonstrate how it is used in practice. The text is issue oriented and contains a substantial amount of institutional material. Being intended for students who are studying international economics for the first time, the text attempts to stress clarity of presentation and organization. I have approached most subject areas from the ground level, first restating what is generally taught at the principles level and then introducing more advanced material.


The student unrest that pervaded the nation's campuses in the late 1960's triggered strong pressures for academics to inquire into their teaching effectiveness. As a result of this movement, student evaluations of teachers in many colleges and universities have become a very important factor in making decisions concerning faculty retention, promotion, and tenure. Such evaluations have to be analyzed with considerable care and deliberation since a number of complexities arise in regard to their interpretation. Leniency in grading is one of the most powerful methods used by some teachers to raise their evaluation scores. With formalized student evaluations of faculty now standard practice, teachers may be tempted to use easy grading as a way to buy high student evaluations. Since leniency in grading may distort faculty evaluations, the purpose of this paper is to develop a way to standardize raw faculty evaluation scores for the grading system. Although a number of studies have attempted to investigate the relationship between grade inflation and faculty evaluations, no consensus has been reached. While some studies have concluded that a strong positive relationship exists, others have suggested the relationship is weak at best. A major reason for this confusion is that the problem has not been conceptualized adequately and thus there is little theoretical guidance for the development of empirical studies.

DEPARTMENT OF ECONOMICS
DR. DONALD L. ELICKSON, CHAIRMAN


In late 1977 the Carter administration announced the establishment of a reference (trigger) price system for steel imports. The objective was to halt the dumping of steel in U.S. markets by foreign steelmakers. This protection is based on a schedule of reference prices designed to limit foreign price cutting in the United States. This paper discusses the nature and operation of reference prices relative to alternative protective measures-tariffs, import quotas, voluntary export quotas, and subsidies. It evaluates the current impact and possible future consequences of reference prices on the U.S. economy.

The current vehicle for most federal "employment and training" (formerly manpower) activities in the United States is the Comprehensive Employment and Training Act of 1973, as amended (CETA). This paper examines the relationship between evaluation/assessment within the CETA system and its performance of that system. The paper proposes an assessment system which is directly linked to the achievement of the quantifiable objectives of CETA. It is hoped that assessment can be used to insure that these Federal-State programs are moving the society toward the achievement of the legislatively objectives.

DEPARTMENT OF ENGLISH
MR. DOUGLAS A. PEARSON JR., CHAIRMAN


The article deals with a canoe trip down the Chippewa River from Caryville to Meriden with a great deal of angling and beer drinking in-between.


The article deals with the author's cross country ski trip along a portion of Wisconsin's Ice Age Trail. Included is an elementary discussion of the region's glacial morphology.


A collection of poems by Richard Kirkwood.


The purpose of this article is to examine the use of so-called "cinematic effects" in narrative fiction, using as prime examples John Dos Passos' U.S.A. trilogy and Thomas Pynchon's Gravity's Rainbow. Dos Passos' work can be seen as an attempt to reproduce cinematic effects in verbal form, particularly when his work is examined in light of the montage theories of Sergei Eisenstein. Dos Passos' approach, though, is not completely successful, partly due to the slower and linear nature of print and partly due to U.S. Passos' lack of the same degree of intellectual freedom and political commitment as Eisenstein. The "cinematic" nature of Gravity's Rainbow is quite different. Although some critics claim that the novel can be read as though it were a movie, Pynchon's attitude towards and use of the cinema is much more ambiguous than that of U.S. Passos. The cinema in Gravity's Rainbow is continually associated with death, decadence and the control of human beings. If anything, as Pynchon's use of narrative voice demonstrates, the novel is anti-cinematic, with the express purpose of making the readers confront reality itself and change their lives.


Howard Hawks' first western, Red River, demonstrates the relationships between men in a primarily economic situation—the delivery and marketing of cattle. As in other films by Hawks, the place of woman is of special importance and the heroine of the film is given a status nearly equal to that of men in the film. This statement is misleading, though, because women in Red River function in a completely different world from that of the men. In fact, they reverse the values of good and bad associated with various settings for the men (for example, night is a time of weakness and danger for men but a positive time for women, since it is associated with their sexuality). Hawks seems to say that men and women are incomplete without each other and are necessary to each other for social stability. While this position is attractive and even progressive for a Hollywood director, it still ultimately traps men and women within their respective socially conditioned roles, not allowing them to change places or incorporate the values of both sexes within one.


This study analyzes concepts and practices of tragedy in such widely differing dramas as Aeschylus' Agamemnon, Sophocles' Oedipus Rex, Euripides' Bacchae, Shakespeare's Romeo and Juliet, Hamlet, King Lear, and Macbeth, and Shaw's Saint Joan. Divine order or fate usually brings dis- order mysteriously to man in Greek tragedy. The concept of man's tragic flaw is crucial to understanding Shakespeare's tragic vision (except in the cases of Romeo and Juliet) in which man destroys himself by what is false within. In Shaw's Saint Joan tragedy results neither from fate nor human weakness but from a clash between two forces which are good. Therefore, as these diverse dramas seem to illustrate, tragedy seems not to be geared to any particular view of the universe or ultimate reality, but rather to change with changing world views. But whatever philosophy the individual may use as a backdrop for a given play, the function of tragedy is to dramatize human suffering and the acute awareness that men and women achieve through that suffering.
characteristics include the birth and death rates, rate of natural increase, age structure, and sex composition and the relation of these demographic characteristics to labor availability. The third theme looks at the spatial distribution of the Soviet population, with the fourth briefly surveying the growth of urbanization and the distribution of large cities.

The chapter "The USSR: Economic Activity," begins with a brief introduction to the concept of Soviet planned development. The bulk of the chapter, however, deals with the more specific examination of Soviet agricultural policy and the collective development of the economy. First the industrial resource base of the country is explored with particular emphasis placed on Soviet energy resources, their similarities of the country's total energy production and the most important areas of their development and exploitation. Following a discussion of fundamental Soviet attitudes regarding industrial development (including the geographical distribution of industry), the six major industrial regions are examined in relation to their types of industrial activities and their locational advantages. Soviet agricultural development and the subsequent success experienced by industry. The reasons for this condition stem from the higher priority placed on heavy industry, the tight control of agriculture, and physical environmental handicaps. The discussion of Soviet agriculture examines (1) the relative weakness of this sector of the economy, (2) the reasons for the establishment of the collectivized system of Soviet agriculture, (3) the organization of agriculture into, sovkhoz, kolkhoz and private plot operations and (4) recent attempts to improve agricultural production. The Soviet Union is then divided into zones of agricultural production; each zone is briefly discussed in terms of its environmental conditions and its principal agricultural products.


Following World War II, the Soviet Union established control over East Europe; however, Yugoslavia and Albania have since defected from the Soviet camp. Poland, East Germany, Czechoslovakia, Romania, and Bulgaria have remained closely linked to the Soviet Union, although even these countries have displayed varying signs of independence. In spite of the similarity of economic and political systems, the East European countries display considerable environmental and economic diversity. The topography of the region varies from the Great European Plain in the north to the mountainous terrain of the Balkans. The mild Mediterranean climate of the south contrasts sharply with the cold winters and cool summers of Poland. Linguistically, the region encompasses peoples speaking numerous Slavic tongues as well as Germans, Hungarians, Romanians, Albanians and others. Religious traditions include Roman Catholicism, Protestantism, Eastern Orthodoxy as well as Islam. Concepts of the "shatter belt" is useful in studying the cultural diversity of Eastern Europe. During the last 35 years, the highest priority has been placed on industrialization, with noticeable but varying success. Overall the region is relatively poor in industrial resources and highly dependent on Soviet aid. The region is generally more dependent on agriculture than the countries of northwest Europe; however, recent years have witnessed great changes in the agricultural economy particularly in the establishment of state and collective farms.

continued
Hansen, David Ford, As I See It, Spectator, Volume 58, Number 2, October 23, 1980, pp. 18-19.

Five black and white photographs published in the "As I See It" section of the UW-Eau Claire Spectator. Subjects included pine needles in snow, curtain in window, chain on stump, contrasty basketball net and street break with calculator.


Two black and white photos were used to illustrate an interview concerning the role of art in photography. One of these was a photo of a boy jumping to catch a bubble and the other was a portrait of a potter.


A full color photograph of Marsh Marigolds used as a weather feature photograph in the Country Today, western Wisconsin area rural newspaper published weekly.

Hansen, David Ford, Photograph, Milwaukee Sentinel, March 6, 1980.

Feature photograph of boy splashing through puddle on State News page of Milwaukee Sentinel.

Hansen, David Ford, Photograph, Milwaukee Sentinel, February 26, 1980, p. 5.

This was a feature photograph published on the Wisconsin State News page of the Milwaukee Sentinel. The subject was boy sliding down icy hill.

Polk, Leslie D., Editor of Issues, Wisconsin Dialogue, Volume 1, Number 1, Fall 1980, 120 pgs.

DEPARTMENT OF LIBRARY SCIENCE AND MEDIA EDUCATION
DR. GLENN J. THOMPSON, CHAIRMAN


This research on children's periodicals published in America during the nineteenth century has a three-fold purpose: (1) to draw attention to the extent and value of the magazine holdings in the Children's Literature Research Collections at the University of Minnesota; (2) to outline a research process for this specific project; (3) to identify and describe some of the classic literature for children that was serialized in periodicals before being published in book form. Set in the historical and social perspective of a rapidly growing America are such titles as To a Prized Gentian, Barefoot Boy, Ragsa Dick, The Story of a Boy, Jack and Jill, the Owl and the Pussy-Cat stories by Hans Christian Anderson. Tyler Tyler ... Little Lord Fauntleroy, and Kipling's Just So Stories. Approximately 30 titles are described in this study, which is condensed from a larger research project that included photographic slides of the classics.


This article describes the reorganization and revitalization of the church library program at Our Saviors Lutheran Church in Menomonie, Wisconsin.

DEPARTMENT OF MATHEMATICS
DR. MARSHALL WICK, CHAIRMAN


The biological action of a compound is intimately related to its conformational behavior in different "bio-solvent" media. Intuitively, we assign this structure-activity dependence to two major events: (1) the transport of the compound from the application site to the receptor (action) site, and (2) specific engagement of the compound with the receptor site. The transport step primarily involves diffusion through pseudo-aqueous and pseudo-hydrocarbon (lipid) media; a reasonable modeling procedure is to consider water and a hydrocarbon-like fluid as representative of the biological transport media. It is assumed that the molecular descriptors are scalar additive with respect to the constituent groups composing the molecule. These additive group feature models have been termed linear free energy (LFE) theories. It seems reasonable to synthesize the good features of both the LFE and theoretical molecular solution models. That is, to accept the accurate empirical thermodynamic features from LFE calculations and combine these with the geometric features of the geometric molecular models. This is the goal of this paper. We report the refinement of our hydration shell molecular solvation model empirically calibrated, with respect to molecular energetics, on the basis of an LFE model.


This is a text designed for a first course in technical mathematics at the technical, community college, and high school levels. It begins with "arithmetic" (3 chapters) then covers an introduction to geometry, the metric system, tables and graphs, measurement applications, algebra, proportions, and triangle trigonometry.


The changes in mathematics education brought about by the calculator are discussed.

Baker, Nancy Rice; Recitals: Piano
"National Association of Teachers of Singing," Gantner Concert Hall, January 18, 1980.
"Faculty Recital," Rodney Hudson, Trombone, Gantner Concert Hall, March 16, 1980.
"Faculty Recital," Gantner Concert Hall, September 21, 1980.
"Recital," University of Minnesota, Scott Hall Auditorium, October 10, 1980.


Performance of Messiah by G. F. Handel.


Three pieces for soprano, alto flute, English horn and bass clarinet were performed.


Hohmann, Rupert. Performances:
"Faculty Piano Trio," Gantner Concert Hall, January 30, 1980.
"University Chamber Orchestra Concert," Gantner Concert Hall, March 16, 1980.
"University Oratorio Society and University Symphony Orchestra Christmas Concert," viola, University Arena, December 6 and 7, 1980.

Hohmann, Rupert. Conducting:
"Viennese Ball," Orchestra Conducting, April 12, 1980.
"University Orchestra Concert," Gantner Concert Hall, April 20, 1980.

Kosower, Paul R., Performances:
"Organ Concert," First Lutheran Church, Eau Claire, WI, April 11, 1980.
"Cello-Organ Concert," UN-Fond Du Lac, Immanuel Trinity Lutheran Church, September 17, 1980.
"Organ Concert," Our Savior's Lutheran Church, Menomonie, WI, September 26, 1980.

"Boccherini Cello Concerto and conducted University Chorus Orchestra Concert," State Music Educators Conference, Mills Concert Hall, UW-Madison, October 23, 1980.
"Organ Concert," First Lutheran Church, Eau Claire, WI, October 26, 1980.
"Cello - Organ Concert," Silver Lake College, Manitowoc, November 11, 1980.

Lunde, Ivar, Embellishments for trumpet and tuba, Opus 60, Number 1, Norsk Musikforlag a/s, Oslo, Norway, 1960, 7 pgs.

Embellishments is scored for Bb piccolo trumpet and tuba. The composition is divided into two parts, moderately fast and very fast. Both parts utilize the entire range of the instruments, and the composition is quite difficult to perform. All melodic material is derived from a twelve-tone row. The work is dedicated to Gary Albrecht and Steve Allen.

Lunde, Ivar, Drawings for piccolo, flute, and clarinet, Opus 34, Norsk Musikforlag a/s, Oslo, Norway, 1980, 22 pgs.

Drawings is a short, descriptive composition for piccolo, flute, and clarinet. There are four movements: Summer day, Nocturne, Eclipse, and Dance. The work is dedicated to the composer's brother Henning Lunde.


Serenade for Woodwind Quintet was conceived in Norway and completed in the United States. The premiere was during the 1st Festival of Contemporary Arts at Atlantic Christian College, Wilson, North Carolina. The first two movements are in A-B-C form. The first movement is slow-fast-slow and the second movement is completely opposed - the joyful, circus-like melodies in the outer sections contrasted with lyrical, mournful material in the middle section. The third movement is multi-sectional. It opens with a neobaroque siciliana and moves into a fugal section. The third part of the movement combines the themes of the siciliana and the fugue. The opening theme from the first movement emerges and the coda utilizes the second theme from the first movement, ending the piece on a happy note.

Mehne, Wendy A., Performances:
"University Flute Choir," Conductor, Gantner Concert Hall, March 3, 1980.
"Untitled Poem," by Ralcy from the University Clarinet Choir concert, Gantner Concert Hall, March 26, 1980.

continued
"Faculty Recital," flute, Ganter Concert Hall, October 12, 1980.

"University Flute Choir," Conductor, Ganter Concert Hall, October 27, 1980.

SCHOOL OF NURSING
DR. E. SUZANNE VAN ORT, DEAN

McNaughton, Michael W., "Heart Rate and Blood Pressure Responses to Sexual Activity and a Stair-climbing Test," Heart and Lung, Volume 9, Number 6, December 1980, pp. 1025-1030.

Heart rate and blood pressure of nine normal males, average age forty-nine years, and six males, average fifty-three years, with coronary artery disease were monitored during stair climbing and sexual activity. Subjects were monitored while climbing twenty two steps in ten seconds. Subjects used a Holter monitor and an automatic noninvasive blood pressure instrument to monitor their own heart rate and blood pressure during sexual activity in the privacy of their own home with a partner of at least six months. Neither group showed significant differences in heart rate for the two activities. There was no significant difference in the blood pressure response to the two activities for normals. The blood pressure response of coronary artery disease patients to stair climbing was significantly (p<.01) higher than to sexual activity. The findings indicate that this stair climbing test provides a cardiovascular challenge quite similar to that of sexual activity.


An essay that elaborates on the importance of a sense of history for persons in the professions. Viewed from her own profession of nursing, the author concludes that any profession which ignores its own history within the total context of history relinquishes its future as a profession.

DEPARTMENT OF PHYSICS AND ASTRONOMY
DR. PHILIP A. CHUTE, CHAIRMAN


When complex waveforms are analyzed in undergraduate laboratory courses by examining oscillograms from simple resonant circuits, interpretation problems often occur. It is suggested that these problematic oscillograms are explainable by recognizing that typical resonant filters pass significant amounts of several harmonics adjacent to the one intended. The effect of such adjacent harmonics is computed, and the resulting Fourier partial sum compares favorably with oscillographic observation.


EPR studies of tris-(di-n-butylidithiocarbamato) Fe(III), with and without a chlorobenzene solvate, were performed from -160 degree C to room temperature. A line at an approximate g-value of 4.4 was assigned as an S=5/2 state and its temperature-dependent behavior was correlated with solid magnetic moment observations. An additional narrower line was noted in the spectrum of the solvated sample. We associate this line with a second possible high-energy site for the solvate molecule. A solvate molecule in this site appears to destroy the spin-crossover.


The scientific public and utility concern over "acid rain" is discussed. There is a description of what "acid rain" is and the possible causes of it. European studies are reviewed along with the reports of United States and Canadian research. The conclusion is drawn that the most pressing need is for long-term careful research and that much of the publication on the subject is based upon conjecture and supposition rather than upon documented research.

continued

This paper reports the results of an observational study of reading in the content areas. Six junior and senior high school teachers were audiotaped on four occasions each. Audiotapes were coded for the extent and kinds of reading activities. Data indicate that print is a frequent source of information in content classrooms, but rarely the primary source of information.


This paper reports the results of an observational study of reading in secondary school content-area classrooms. Videotapes of eight junior and senior high school classrooms were analyzed qualitatively to determine the kinds of reading activities being used. Analysis revealed six categories of print use: conventional reading, cueing, reinforcing, structuring, correcting, and coying. While print was available to students for approximately 72 percent of all class time, only 10 percent was allocated to conventional reading (reading of extended selections). Results suggested a need to reverse the "commonsense" picture of secondary school reading.


In this chapter the term diagnosis is defined in relation to reading, levels of diagnosis in reading are identified, and specific techniques are described for effecting diagnosis of reading abilities.


The author outlines common problems associated with direction following in the English classroom and recommends specific strategies for dealing with these problems.


Methods professors in the University of Wisconsin System were surveyed to determine the most frequently recommended professional journals in secondary content areas.


This classification is intended to meet four criteria for a good taxonomy so that it might serve as a guide for matching types of alcoholics with types of treatments. Steps used to develop the classification include: isolating prognostic indicators (prognostic indicators are personal characteristics of alcoholics that are shown empirically related to treatment response). Hypothesizing how 50 prognostic indicators should cluster, measuring the indicators among 60 male alcoholics from five different treatment facilities, and comparing the hypothesized clusters with clusters derived by the Johnson maximum hierarchical clustering procedure. Two hypothesized clusters, which were largely confirmed, were converted to Social Stability and Intellectual Functioning Scales. These scales were used to classify 50 original and 20 additional randomly selected alcoholics into four types. The classification awaits replication and the test of the effectiveness of type-specific treatment.


The problem of child abuse in rural areas experiencing rapid growth due to energy impact has not been extensively examined in the literature to date. While documentation exists that the incidence of child abuse and neglect increases in growth-impacted communities, little attention has yet been given to the causes of this increase. The authors review the problem of child abuse and neglect in boom towns from several perspectives in an attempt to better understand the aspects of rapid growth that may contribute to its increased incidence. A discussion of intervention strategies now employed in rural, boom town settings, barriers to their success and alternative approaches to be tried will follow. Finally, implications for further research are discussed.


Salmon (1978) has discussed the role of systems theory and systems explanation in archaeology. Her article raises several salient points, such as the difficulties inherent in applying general systems theory to solve all archaeological problems. We would argue, however, that her conclusion, to wit, that general systems theory and mathematical systems theory are of no relevance to archaeologists, is overdrawn and that systems explanations offer archaeologists a valuable means of explaining complex cultural phenomena.
Flora, George K., "Can Merely Attending a Professional Meeting be Done with Creative Imagination?" Wisconsin Sociologist, Volume 17, Fall 1980, pp. 113-114.

This commentary argues that attending a professional meeting can be done creatively without giving a paper, or writing a session, leading to a roundtable discussion. A strategy for participating is described.


The book is reviewed as a book with a distinctive style of scholarship—a craftsmanship that makes something intellectually satisfying and useful out of vast stores of information from everyday life.


The academic newsletter has the potential of being a voluntary enterprise itself that gives intellectual satisfactions to editors. Six opportunities for coming out ahead are enumerated. These can be found where an over-professionalism prevents adequate support. News generally must be actively sought and the editors need to be among the best informed people in the academic association. References are to scholarship in sociology.


The paper explores the concept of spirit as it is employed throughout the philosophy of the Akwamu Akan of southern Ghana. Spirit is shown to be the central, unifying theme which integrates the various domains of Akwamu Akan thought. The paper concludes with the assertion that the universe in traditional Akwamu Akan thought is not divided into separate spiritual and material worlds but is most accurately regarded as one inspired universe.


This is a chapter which introduces social theory to introductory sociology students. It appears in a widely circulated introductory text. There is a discussion of the three major sociological theoretical frameworks that developed as a response to the social conditions of the 19th Century. The chapter continues by describing modern social theory and concludes with a chart which summarizes and integrates the major theoretical paradigms in sociology.

DEPARTMENT OF SPEECH

Dr. W. Robert Sampson, Chairman


To Pass by the Dragon was an Interpreters Theatre presentation compiled from the writings of Flannery O'Connor. It focused on O'Connor as seen through her non-fiction (letters, essays, etc.) and selected short stories.


The Bell Jar was a Chamber Theatre presentation of Sylvia Plath's semi-autobiographic novel. Three Esther Greenon's (narrator's) were employed to present the story, which is based upon incidents (including attempted suicide) spanning six months in Plath's life.

NON-DEPARTMENTAL


continued

The purpose of this paper is to demonstrate the ease with which a well-designed nonstandard arithmetic package may be interfaced with the AUGMENT precompiler for Fortran (6,7). We outline an interface and user instructions to enable one to use the Fortran multiple precision arithmetic package MP (1-4) in conjunction with AUGMENT. This makes the use of MP far more natural and convenient than its use without AUGMENT. With the aid of AUGMENT, the user declares multiple precision variables as type MULTIPLE, and then, for the most part, simply writes the program as though MULTIPLE were a standard Fortran data type.


The requirement for rigorous bounds in interval arithmetic leads inevitably to the consideration of what should be done when floating point exceptions occur. We discussed this question for the case when the numbers involved in the computation are all expected to be conventional machine-representable floating point numbers. In that case, it is sufficient to detect all floating point exceptions and notify the user when they occur. That procedure also sets default values for the results of the faulty operation. For certain applications, however, the default values may not be acceptable, and conventional schemes may not preserve enough information to enable the user to select appropriate alternative values. It therefore seems appropriate to consider an extension of the collection of standard machine representable numbers to allow for the representation of numbers which are known to be very large or very small, when more precise information about them is not really required. In this paper, we propose a scheme for floating point exception handling which seems to fall about midway between the two extremes.


In the Fall of 1976 the Department of Business Administration implemented a major alteration in all majors within the department. This article reports the change, compares it with changes that have been suggested and tried in other places, and reports survey data indicating that alumni are very favorable about the change as an improvement in the preparation of undergraduate business students.


In the Fall of 1979 the Catholic Church, Diocese of LaCrosse, Wisconsin initiated a "Listening Process" to determine laity thinking regarding the functioning of the Church. St. Olaf's, Eau Claire, was the pilot parish and its members were invited to provide input to the listening panel in January, 1980. Two problems ensued. How could the information be given meaningful, and value be derived from it for the parish? A decision followed to survey the parishioners to determine parish feelings about the listening process statement and to establish parish goals. The author designed a Likert scale based on the listening process transcript. It was administered to 827 parishioners at all masses on a February, 1980 weekend. The information was organized and analyzed on the basis of eight parishioner groupings. A formal report was furnished the parish council and a summary provided to all parishioners. Thirty-four possible goals based on scale analysis and council input were stated in a second scale to determine council priorities. Results were used for 1980-1981 goal-setting. The procedure has been adopted as a model for use in all parishes in the LaCrosse diocese.


This is an annotated bibliography of guides to graduate programs. The annotations tell what is contained in each book and give indication of its value to students. It is a useful guide for librarians and counselors.