

FILE

ASSOCIATION FOR WOMEN IN MATHEMATICS  
NEWSLETTER

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REPORT FROM THE PRESIDENT

Congratulations to the following women Putnam Contestants who placed in the top 500 in the December 1974 Contest.

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#### REPORT FROM THE SOUTH

The Association for Women in Mathematics in this region is well represented in the Louisiana-Mississippi Section of the Mathematical Association of America. The chairman of this section is Dr. Carol B. Ottinger, Chairman of the Department of Mathematics and Professor of Mathematics, Mississippi University for Women, Columbus, Mississippi. Among those who have served as chairman of this section of the Mathematical Association of America, previously, are Dr. Virginia Carlton, Chairman of the Department of Mathematics and Professor of Mathematics, Centenary College, Shreveport, Louisiana, and Dr. Eleanor B. Walters, Chairman of the Department of Mathematics and Professor of Mathematics, Delta State University, Cleveland, Mississippi.

There will be a special session of the AWM at the Louisiana-Mississippi MAA Section meeting, Saturday, February 14, at 9:00 a.m., in the Buena Vista Hotel, Biloxi, Mississippi. All members in the surrounding states are urged to join us if possible for a discussion on employment of women to be moderated by Dr. Kathleen A. Drude, Professor of Mathematics, Northeast Louisiana University, Monroe, Louisiana.

It would be appreciated if AWM members in the other sections of MAA in the South will send information regarding their activities to me in order that we have complete news coverage for our region.

News regarding grants from endowment funds is being assembled and is to be available at the San Antonio meeting on January 23. So far our investigation for research funds has been centered in three groups: 1. on the private agencies - namely, the Rockefeller, Ford, and Carnegie Foundations; 2. on corporations such as Exxon, Shell, and Chevron; and 3. on those of the federal government, e.g., NSF, NEH, NIH, and DOD. No volunteers have responded to the call for assistance with this project.

Christine B. Stokes, Univ. of Mississippi

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#### REPORT FROM THE MIDWEST

The following two programs at the University of Michigan at Ann Arbor may be of interest to AWM members:

The Michigan Women in Science, a University group established to promote the interests of women students and faculty in the sciences, obtained a grant from the Robert Sterling Clark Foundation (in New York) to help fund the expenses of women seminar and colloquium speakers in science. The grant amounts to about \$8700, spread out over the three academic years from 1974 to 1977. With this money, the Michigan Women in Science help sponsor about fifteen women speakers a year. The aim of the program is to increase the number of women invited to speak in the various science departments at the University by reducing, by about half, the department's expenses for the visit. To obtain these funds, a department submits the name and curriculum vitae of the proposed speaker to the Michigan Women in Science. If the speaker is chosen to be sponsored, then, in return, the department must advertise the talk well and provide ample opportunity for women students to talk to the speaker about her specific field and/or the difficulties, pleasures, etc., of her life as a woman scientist.

The program seems to be very successful: seminar and colloquium organizers are suddenly remembering to invite qualified women (not just men), and women students are noticing that, finally, some of the speakers are actually women.

The Center for Continuing Education of Women, which the University started in 1964, provides a math tutorial series designed for women who have been out of school for several years and now wish to apply to graduate school and therefore take the Graduate Record Exam, LSAT (law exam), etc. The tutorial series consists of a few nights of free tutoring (open, really, to anyone, not just women) in the basic math which would appear on the quantitative part of the above exams. The tutoring is done by volunteers, mainly advanced students in math education.

Evelyn Boorman, University of Michigan (Ann Arbor)

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REPORT FROM THE WEST: LOS ANGELES

The second Southern California meeting of the AWM was held on Tuesday, January 13, at Lorraine Foster's home.

Lorraine reported that she attended the Occidental College Field Day on November 22, and gave a brief talk about the AWM. (The event, sponsored by the Actuarial Society, is a competition for high school students). She reported that the actuaries were rather hostile to the idea of women in math; this was corroborated by Janet Palmquist. Any other negative experiences with actuaries by AWM members?

Janet attended a meeting sponsored by the "Relations with Schools" group at U. C. Irvine, and was moderator of a workshop on motivating high school students. She raised two interesting points: 1) There was agreement among the high school teachers themselves that counselors were not effective, so we should concentrate our efforts on the teachers. 2) One sympathetic male teacher said that when he advised a mother that her daughter was doing badly in his math class, she replied that it didn't matter, because she had never been good in science either.

We had a general discussion about how to get high school teachers involved in AWM, if this is possible (or even desirable). Presently, the AWM is directed towards Ph.D. women, and there is very often nothing in the Newsletter to interest high school teachers. Since our group feels strongly that we must try to get girls to take more mathematics in high school, relations with high school teachers should be cultivated. Any comments or suggestions from the membership?

The next meeting is tentatively scheduled for Saturday, April 3, at Ruth Afflack's home in Long Beach (1770 E. 2nd St.; phone (213) 432-4954). Hopefully, we can get a number of high school teachers to come. The agenda will be to plan a panel discussion on women in mathematics, which has been scheduled for November at the Southern California meeting of high school math teachers. The meeting would be from 2 to 4, with an optional potluck supper afterwards. If you plan to stay for dinner, call Ruth or Sheila Foster (also at Long Beach) to plan what to bring.

Sunsan Montgomery

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LETTER FROM WASHINGTON AND POINTS EAST

First of all I want to thank everyone who voted for me for vice president of the AMS. I shall do the best I can to justify your confidence. If you have ideas about what the Society should be doing, please let me know.

Attorney-General Levy's remarks on busing are indicative of the climate in Washington with respect to enforcing anti-discrimination legislation. The Federal government is attempting to mask its reluctance to guarantee equal opportunity under the guise of laissez faire economics and anti-big government philosophy. HEW Secretary Matthews met in December with representatives of groups interested in equal opportunity for women in education; he had previously refused to schedule such a meeting. I was unable to be there but Carol Polowy represented AAUP; not much happened. Committee W of AAUP is continuing to work on the equal pension benefits issue, as well as other matters of concern to women in academe. However, I feel that some large scale effort will have to be mounted if we are not to lose the few gains we have made in the past few years. Universities are citing economic pressures as reasons for cutting out affirmative action programs, whereas in fact they have never been really committed, philosophically or otherwise, to them. There is a dangerous American Council on Education report circulating on the high cost of Federal employment legislation compliance to universities. It has been headlined in such a way as to imply that it is affirmative action and Title IX about which they are talking, but looking at the details reveals that the major costs are Social Security, unemployment insurance and minimum wage compliance.

Certainly your Congressmen and Senators should be lobbied on issues of importance, but much effort also needs to be put into the state level. Just to cite one example—

you may be able to get through a state law specifically requiring state institutions to have retirement plans with equal monthly benefits, thus circumventing at least in the public sector the controversy over conflicting Federal agency interpretations. This is in the works in Maryland. Moreover, it seems to me that first priority needs to go to getting the ERA through in the remaining states. While theoretically it might not be needed because of existing legislation, it would clear up a lot of the cloudy areas. The problem is that sex is still not treated by the courts as an automatically suspect category as is race. Also, now is the time to become involved on the local and state level in Presidential primary campaigns; each candidate needs to be pinned down on issues of concern to women—asked what he has done, whether there are women in key positions in his campaign, and not let off with vague assurances that he is for equal opportunity. Pension benefits and income tax provisions which discriminate against women employed outside the home are two fairly technical issues on which candidates can be quizzed as indicators of real involvement and commitment.

It is always a joy to observe the number of women professors of mathematics in Paris. The street sign on the street next to the one on which we are living has been crossed out and a new one put up. The old one read "Rue Pierre Curie"; the new one reads "Rue Pierre and Marie Curie." Maybe eventually it will be Marie and Pierre or even just Marie.

The main noticeable result of the new anti-discrimination law in Great Britain is that newspapers have had to abandon the traditional listings of jobs for girls and jobs for men. Also, firms now ask for "tea trolley assistants" instead of "tea ladies." However, it is still impossible to convince stores, airlines, car rental agencies, etc. in London that they really do not need to write Mrs. or Miss before each woman's name. Nonetheless, I had a lovely few days in London and am enjoying myself in Paris.

I am speaking at the New York AAUP conference meeting in New York City on 14 February; I hope to see some of you there.

Paris, 7 January 1976

Mary Gray

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#### REPORT FROM THE PAST PRESIDENT

At last summer's meeting of the Executive Committee in Kalamazoo it was decided that I should write a short report for the Newsletter on the cases of discrimination against women mathematicians brought to the attention of the Executive Committee in the past year. The idea of publishing such a report is to give an idea of the range and nature of actual discriminations encountered by some AWM members in that period. It so happens that all of these occurred in academic institutions. This report is written so that no individual case is described in detail and so that no case can be recognized except by the actual participants in that case. Some of these cases have already been resolved (satisfactorily or otherwise), while others are in various stages of discussion among the participants.

There were cases reminiscent of the Berkeley ones (See the Sept. '74, November '74, and January, April and May-June '75 issues of the Newsletter). Files of women being considered for appointment or promotion or tenure were presented in incomplete form to the committees making these decisions. In some instances this was done by the chairman of the mathematics department and in others by the chairman of the group in the department charged with collecting information on candidates. In some cases this consisted of omitting good letters of recommendation on file, or of soliciting letters of recommendation only from individuals who would be known to write letters against the candidate, or of soliciting letters from individuals not in the candidates's field and none from people in the candidate's field.

There were cases of non reappointment with no reasons given by the chairman and/or administrators of the institution and with refusal to give reasons when they were requested. In some cases non reappointment at an institution came after a period of over 10 years service at that institution. In one case the reason given for non reappointment of an individual was that student evaluations of her teaching were poor, but when the individual asked to see them she was refused.

Many of the women involved in these cases not only contacted AWM but contacted other groups concerned with discrimination as well: AMS' CAFTES (Committee on Academic Freedom, Tenure, and Employment Security), AAUP, EEOC. In some cases AWM had suggested to the individual that she contact one or more of these groups on the theory that in her case the services they offer were especially appropriate. AWM has cooperated with these groups wherever and whenever appropriate and possible. In many instances this has proved particularly helpful to the individual. Some of the women have hired lawyers and it is possible that some of the cases may eventually be taken to the courts. Expenses in these cases can be extremely high. AWM would like to help with the expenses in selected cases when it seems feasible and for this AWM needs a Legal Defense Fund.

Alice Schafer

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REPORT FROM THE EAST: BOSTON AWM MEETING

The Boston AWM sponsored a panel discussion during the MAA meeting on November 29, 1975 at Simmons College. The topic of the discussion was of current interest in view of the goal of expanding the membership of AWM. The panel addressed the problems of women teaching in junior colleges and high schools. Bhama Srinivasan made the introductory remarks to the effect that it is by historical accident that the membership of AWM is composed mostly of university level instructors. Sharon Turley spoke on her situation of part-time teaching in junior colleges, Nancy Myers spoke on full-time teaching at the junior college level and Lucy Simon Rakov spoke on full-time high school teaching.

Sharon, currently doing graduate work and teaching part time, pointed out the following problems as the most troublesome in her part-time teaching: poor pay, lack of benefits and security, short-term last minute contracts, the lack of contact with other faculty members, her frustrations with the diverse student knowledge and backgrounds in one class and the lack of control over size of enrollment. She felt that many of the problems she encounters are not unique to the schools in which she teaches but exist in many part-time teaching positions. Lucy, married and mother of three young children, previously taught part time for four years at a junior college where she was the only mathematician. Her position was terminated as a result of declining enrollment. She is now teaching full time at the high school level and discussed problems resulting from lack of clear procedure regarding maternity leave and the tenure process, the paucity of women in high school administration, the lack of female representation in the teaching of advanced placement courses and authorship of articles in high school mathematics journals. Lucy feels fortunate in her current appointment because of the composition of the department and her teaching assignments. Nancy, who teaches full time at a community college, spoke of problems encountered in a previous teaching position, such as the hostility and lack of support and cooperation of colleagues while developing materials and writing a textbook. Her present situation is exceptional in that the women outnumber the men in her department, the chair is a woman, and unlike her previous position, there is active support of her creative endeavors.

In the ensuing discussion, questions were addressed to the panelists and one of the women attending the meeting who is currently employed in industry mentioned similar problems she had encountered in her position.

Nancy Myers, Bunker Hill Community College  
Lucy Simon Rakov, North Newton High School  
Sharon Turley, graduate student, Clark University

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LADY LOVELACE AND THE ANALYTICAL ENGINE (Continued from January Newsletter)  
by Dana Angluin

(The following is the second of two installments treating the life and work of Augusta Ada Lovelace. The first two dealt with Ada's childhood and the Calculating Engines of Charles Babbage; this last concerns the collaboration of Babbage and Lovelace, and the sequel.)

The Collaboration and the Sequel

After the birth of her third child, Lady Lovelace was becoming impatient to pursue her mathematical education again. In one of her notes to Babbage she asked him to propose a tutor for her; he knew of none. She gradually came to the idea of helping Babbage in his work on the Analytical Engine. In one of her many invitations to Babbage to come and stay with her and her husband, she advises him to bring skates if he wishes, as skating was then very much the rage and she had quite taken to it, and goes on to propose: "It strikes me that at some future time (it might be even within 3 or 4 years, or it might be many years hence), my head may be made by you subservient to some of your purposes and plans....You have always been a kind and real and most invaluable friend to me; and I would that I could in any way repay it, tho' I scarcely dare so exalt myself as to hope, however humbly, that I can ever be intellectually worthy to attempt serving you."

She began studying the method of finite differences, as she knew that it was related to his work. She wrote again expressing her anticipation of being of use to Babbage in his work, saying: "I intend to make such arrangements in Town as will secure me a couple of hours daily (with very few exceptions) for my studies."

Even that "couple of hours daily" was probably difficult for the mother of three small children to arrange. From the wife of her younger son, Mary, Countess of Lovelace, we have this account: "To these (her) children she was always a very dear and sacred memory, and in their hearts a halo of romance forever hung about her name. She was reputed to have been a neglectful mother, but little Annabella and Ralph King clearly found nothing wanting. If she concerned herself little with matters of tuition and discipline, leaving these mainly to their father and grandmother, she must have known how to inspire love and -- when she chose -- express it. But she led a curiously detached existence, caring little for ordinary society, or even for the more satisfying pleasures and duties of country life. She was always absorbed in study."

By the end of June of 1843, well ahead of her timetable of "3 or 4 years", her studies had progressed to the point where she had translated the "Sketch of the Analytical Engine Invented by Charles Babbage" of Li F. Menabrea into English and had begun annotating it. Numerous letters passed between Lady Lovelace and Charles Babbage regarding revisions and corrections of her commentary, which came to be called "the Notes" and grew to be longer than Menabrea's original memoir. Parts of this correspondence are quoted in Maboth Moseley's life of Babbage.

Since the prevailing conventions rendered it "unfeminine" for any woman, least of all a countess, to sign any literary production, the question arose of how the translation and Notes were to be identified when they should be published. Lady Lovelace's husband suggested that she should at least affix her initials to the document. Babbage considered the Notes worthy of an original paper, and pressed Lady Lovelace to publish them separately, but she would not default on what she considered to be her obligation to the editor of the journal that was to publish the memoir. After some months of feverish activity, the translation and Notes were finally published, initialled only "A.A.L."

Menabrea's memoir and Lady Lovelace's Notes are a remarkable document. Therein, a century before its time, is the concept of a general-purpose digital computer, developed to an amazing degree of sophistication. It is possible to take quite a number of modern concepts from computer design or programming --

memory, central processor, switch register, program library, for-loops, indexing, comments, program trace, coder, keypuncher, analysis of algorithms -- and to quote for each a passage of the memoir or the Notes to demonstrate their grasp of the idea. Menabrea, and to a greater extent, Lovelace, wrote out some rather complex programs for the machine, and I would guess that it was that exercise which led to the development of some of the more subtle and powerful concepts, e.g., looping and indexing.

Menabrea and Lovelace understood the capabilities of the machine in quite general terms. From the memoir: "...the cards are able to reproduce all the operations which intellect performs in order to attain a determinate result, if these operations are themselves capable of being precisely defined." From the Notes: "The engine can arrange and combine its numerical quantities exactly as if they were letters or any other general symbols; and in fact it might bring out its results in algebraical notation were provisions made accordingly." Elsewhere Lovelace suggests that the Engine might be made to compose music, if the fundamental relations of pitched sounds in the science of harmony and musical composition were susceptible of sufficiently precise formulation. The two thereby establish some claim to priority in formulating "Church's Thesis", which posits a similar universality for another type of computing device.

Shortly after the publication of the memoir and Notes, when Lady Lovelace was twenty-eight, the English mathematician Augustus De Morgan (who had taught mathematics to Ada's mother, Lady Byron, when she was a girl and afterwards gave Ada much help in mathematics) wrote a confidential letter to Lady Byron regarding her daughter, saying that: "The tract about Babbage's machine is a pretty thing enough, but I think I could produce a series of extracts, out of Lady Lovelace's first queries upon new subjects, which would make a mathematician see that it was no criterion of what might be expected from her." He said that she displayed the makings of "an original mathematical investigator, perhaps of first-rate eminence." Nonetheless, he had never told Lady Lovelace his true opinion of her abilities, saying: "I always feared that it might promote an application (to mathematics) which might be injurious to a person whose bodily health is not strong."

Later in the letter De Morgan goes on to expound his idea of the connection of strength and mathematics: "All women who have published mathematics hitherto have shown knowledge, and power of getting it, but no one, except perhaps (I speak doubtfully) Maria Agnesi, has wrestled with difficulties and shown a man's strength in getting over them. The reason is obvious: the very great tension of mind which they require is beyond the strength of a woman's power of application. Lady L. has unquestionably as much power as would require all the strength of a man's constitution to bear the fatigue of thought to which it will unquestionably lead her." Hence De Morgan restrained his enthusiasm for Lady Lovelace's efforts to comments like "very good" and "quite right".

Encouraged or not, Lady Lovelace was full of ambitions and plans for the future. She wanted to see the Analytical Engine built, though by that time the English government had withdrawn all support for the Difference Engine, and was not very favourably disposed towards its inventor.

Babbage had at one time done work in probability and statistics, and it seems that he, and Lady Lovelace and her husband, developed what they thought was an infallible scheme for betting on the horses, and began trying it out. This enterprise was almost certainly undertaken with the intention of raising enough money to construct the Analytical Engine; Babbage had considered and discarded other hare-brained schemes for financing the Engine. The three began to lose heavily in their betting. The two men withdrew, but Lady Lovelace persisted without their knowledge. Twice she had to appeal to her mother to redeem her debts and keep her secret, which the older woman did.

To these difficulties was added a marked and progressive degeneration in Lady Lovelace's always precarious health. It developed that she had some kind of "internal cancer". By the summer of 1852 mattresses had to be placed on the

walls and floor of her room so that when she threw herself about in her agony she would not further injure herself. She was compelled to confess her secret betting to her husband. Bitterness arose between her mother and her husband, and she was estranged from both. She made Babbage the executor of her will. She suffered terrible remorse.

One day in November of 1852 her mother wrote: "I write in the hearing of her groans, and of the little Bullfinch singing carelessly his wonted airs. In the next room (is) one whose feelings are far from in harmony with mine (referring to Lord Lovelace, her son-in-law)", and a few hours afterward Augusta Ada Lovelace died, at the age of 36. At her express request, she was buried beside her father, Lord Byron.

The Analytical Engine was never built, though Charles Babbage lived nearly another two decades. Some parts of it were assembled under the direction of his son, Henry, who wrote a paper describing some details of its construction. The Menabrea/Lovelace paper remains as almost the sole witness of the power and scope of the ideas of Babbage's Analytical Engine. I have not been able to trace the subsequent career of these ideas; it seems that they lay dormant for another century, only to be discovered again by other investigators; perhaps the whole episode of the Analytical Engine was a freak of history, and a sterile one, but to me it seems brilliant proof that the mind of man does not always limp obediently along behind the carriage in which ride Necessity and Technology. (My thanks to Lenore and Manuel Blum for their support and encouragement.)

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carved a partial description of a recursive construction starting "In the beginning everything was void..." We witness and are intended to participate in a reconstruction of John Horton Conway's "extraordinal" numbers ("surreal numbers", "enriched reals," or "reals enriched by infinitesimals and infinite numbers," as one can say if he objects, as I do, to the term "nonstandard" for what may become very standard indeed). Conway's construction has yet to be published, (except in outline in "All numbers, great and small," University of Calgary Mathematics Department Research Paper No. 149, February 1972) and Martin Gardner has opined in his February 1975 Scientific American column that this may be the first time that new mathematics has been first published embedded in fiction.

Although the dialogue is inevitably a bit forced at times, students (and faculty who recall their youth) can empathize with the pair of liberated beach-combers. In particular, women can identify with the female member of the pair who is in no way inferior to her partner, and everyone who is tired of sexism in the mathematical community can applaud the author for portraying her that way, her partner as completely comfortable living with her in equality, and both of them as sexually stimulated by their joint mathematical endeavors.

Knuth says that he intends to teach "how one might go about developing such a theory" rather than the theory itself, but the book will in fact do both in an enjoyable way. It is also a case study in heuristic, because the author has based it on his own efforts (including false turns) that relied only on "a vague memory of a lunchtime conversation" with Conway. Finally, Knuth uses it as a vehicle for suggesting "important principles, techniques, joys, passions, and philosophy of mathematics." This is explained in a postscript, which includes also some supplementary problems and a proposal that students write an essay which should be graded on expository style as well as mathematical content. He concludes: "In my opinion the two weaknesses in our present mathematics education are the lack of training in creative thinking and the lack of practice in technical writing. I hope that the use of this little book can help make up for both of these deficiencies." Right on!

But why "pure" in the subtitle and elsewhere? What is pure about this mathematics? Does "pure" refer to the autotelic (purely aesthetic) nature of the couple's endeavor, to their lack of external motivation (ignoring the heterotelic aphrodisiac effects)? If so, the adjective should be applied to them or their inclinations, not to the mathematics, which will be the same whatever the motives of its creators. Does "pure" suggest a lack of applications of the theory? If so, it is certainly out of place since the number system being constructed is undoubtedly the most widely useful intellectual tool consciously devised by man. Does "pure" indicate no possibility of venal uses? Hardly, as the young people themselves point out. Can it refer to the manner in which the theory is constructed, axiomatically and allegedly without intuition or explicit reference to experience? If so, it is misapplied, since the couple (like all mathematicians) constantly refer to experience with familiar numbers and concepts from the "new math," always trying to find analogous properties, relations, and operations. Would it not be the same mathematics if the pair were motivated by making money (instead of merely avoiding boredom) or by the desire for social usefulness or fame, if they were guided by applications and strong intuitions, and proceeded formally by experimentation, observation, and verification; and if they established their results by plausible rather than by "rigorous" proof? Yes, it certainly would be the same, and indeed that is just how they do proceed! Knuth's emphasis is on insight, observation, and heuristic rather than formalism. Indeed we get a picture of mathematics and mathematical activity -- unmodified by any objective. Leaving out "pure" throughout would simply remove a slight whiff of romantic elitism. Our young couple would have said just "mathematics" anyway, since they have not had enough university courses to have been corrupted by the philosophically indefensible pure-applied dichotomy and imagine quite correctly that there is just mathematics, any part of which may

be applied within or outside mathematics without thereby changing its mathematical character.

Kenneth L. May. University of Toronto

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#### OUR EXPERIENCE WITH SURREAL NUMBERS

By Lenore Blum

(Editors' note: Lenore heads a newly formed and active mathematics/computer science department at Mills College, a liberal arts college for women in Oakland, California.)

Last semester, several of our students read Knuth's book, Surreal Numbers, in preparation of projects for the department seminar. I was quite impressed with the enthusiasm for mathematics this book generated. One student, in particular, spent many hours anticipating further developments in Conway's system and influencing other students to do the same. And this enthusiasm and activity carried over to other courses as well.

Along with Kenneth O. May we applaud Knuth's portrayal of a budding female mathematician. This certainly adds to the book's appeal, although subtly. When I asked students to comment on the book, other features stood out. Mira Fong, a junior writes:

"The most appealing aspect of Knuth's book is the way it is set up as a novelette. Unlike traditional mathematical textbooks, this setup gives him the opportunity not just to present Conway's system, but also to communicate some of his own philosophy. Knuth communicates two feelings that I was especially influenced by. The first is that I felt he really understood the trials and traumas of being a student and how to handle the situation. From then on, you feel he is capable of making you understand, and you place a certain kind of trust in that. The other idea that is even more important is the idea of discovering mathematics and the beauty of it by yourself. This has a deeper effect because after you put Knuth's book down and pick up another book, the idea carries over."

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#### SURVIVAL OF THE FITTEST II

By Everywoman, Ph.D.

Something's wrong. I walk onto campus and see a grey-haired tweedy-looking man with a brief case. I think "He must be a professor. That's how professors look."

In the mirror I see myself not terribly elegant, in slacks, a poncho, lots of books over my shoulder. I wonder how many like me I pass on campus. I, too, am a professor, but the few like me go unnoticed. + + +

I enter the first meeting of a committee I'm on and smile at the six men I don't know and the one woman I do. One man in friendliness introduces himself: "I'm Any Oleman of the W school". I smile and say, "I'm Everywoman" pause "of the W school." He says "Oh you're Everywoman!"

There happen to be four women and 120 men on the faculty of the W school (a subset of the university). But nonetheless I wonder why he's heard of me, or rather, what he's heard about me.

I contemplate that until I notice the seating arrangement: the men sit around the table consecutively (there are 8 now), the two women sit next to each other, and on one side of each woman is one of the two empty chairs. + + +

I get off the train and notice I'm walking next to another faculty man with whom I'm acquainted. I give the usual greeting. He replies and then asks me what I'm studying. I look at him a little peculiarly so that he becomes quite confused. I then introduce myself. He says, "Oh you're Everywoman!"

Twice in one week is a little too much. + + +

One student in the large lecture section I teach calls me by my first name. I ask him if he calls all his professors by their first names. He says

yes, but picturing the tweedy types, I just don't believe him. + + +

A faculty man I've met casually but feel is a nice guy says out of the blue, "Do you ever feel discriminated against?" At a loss I snap, "Only every other day!" It turns out he does research on solo women in peer groups. We become friends even though his papers are very depressing. + + +

A new faculty man asks me if faculty sleep with their students at this university. I notice I am late for an imaginary appointment. + + +

According to the grievance procedure of one university, "it is a grievable offense for a faculty member to sleep with a student of the opposite sex" (!). Sleeping with anyone who has power over you (or over whom you have power) becomes a political situation of more delicacy than I wish to handle. On a gut level I do not understand the stories I've heard about faculty who pair off with their students. + + +

An older than average graduate student in one of my classes asks me if I'm married. I say yes. He says, "That's too bad, you're a pretty neat chick!" I have very mixed feelings (sexism and politics aside). + + +

One of my male colleagues says he always leaves the door open when a female student comes to his office. I figure I can always open the door if the occasion demands. I was once discussing a problem with someone over my desk when he began to play kneesy. After my moving away and his moving closer I asked him if he wanted the whole desk. He said no, and I opened my office door. + + +

Sometimes the question "Would you like to see my great set of functional analysis notes?" is another version of "Would you like to see my etchings?" There is unfortunately a group of men who cannot deal with a woman on a non-flirtatious level. Most of the time I mention how crazy I am about my husband to avoid confrontations. Usually this means not seeing the functional analysis notes and writing off any mathematical discussions with that man.

You can't fight every battle, and this one's hopeless anyway. + + +

Sure, sure, we've come a long way. But it's a long and dusty road. I have no solutions; a Feiffer cartoon puts it well: once a month I hide in a closet and beat up the wall.

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#### OF POSSIBLE INTEREST

Signs: Journal of Women in Culture and Society is a new quarterly published by The University of Chicago Press. The first issue was the Autumn 1975 one and it and succeeding issues will be devoted to scholarship about women.

Wider Opportunities for Women Inc. publishes a bi-monthly Career Magazine for Women. For information write to Women's Work, Wider Opportunities for Women, 1649 K. Street, N. W., Washington, DC 20006.

The Houston Committee for International Women's Year and the Guild of the Houston Museum of Natural Science are jointly planning a major exhibit honoring Women in Science to open on February 16, 1976. They would like information on any outstanding American women scientists, past or present.

WEAL (Women's Equity Action League) in November invited gifts for women before the end of International Women's Year. AWM might suggest a gift to AWM in honor of International Women's Year just ended, the gifts to be used to start a Legal Defense Fund!      ATS

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#### COMING IN THE MARCH NEWSLETTER:

Report on the AWM meeting in San Antonio  
Report on the AMS Council Meeting in San Antonio

Report on the MAA Board of Governors meeting in San Antonio.

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JOBS

The vacancies listed below appear in alphabetical order in an alphabetical listing of states, followed by Canadian listings.

The University of Alabama, Department of Mathematics, has an opening at the assistant professor level, salary competitive. Ph.D. and research potential required. Write, with resume, to Dr. Arthur C. Segal, Chairman, Department of Mathematics, University of Alabama in Birmingham, University Station, AL 35294. The Department has a faculty of twenty-one, including five women: one associate professor, three assistant professors, and one instructor. An equal opportunity/affirmative action employer.

Loyola Marymount University, Department of Mathematics may have two openings for September 1976: one Assistant Professor (permanent) and one visiting Assistant Professor (one year appointment). Only persons holding a doctorate in mathematics with no more than one year teaching experience after the doctorate will be considered. Priority will be given to individuals with a well-rounded background and a willingness to teach a broad range of undergraduate mathematics courses. For information, contact: Dr. Jacqueline Dewar, Dept. of Mathematics, Loyola Marymount University, Loyola Boulevard at West 80th Street, Los Angeles, CA 90045.

U. of California, Davis, Department of Mathematics. One year appointment, Visiting Assistant Professor for 1976-77 academic year; up to five quarter courses a year plus seminar. Applicant should be able to collaborate in research with one or more members of the department and should have an excellent publication record. Complete files should be submitted by 2-15-76. D. G. Mead, Chairman, Department of Mathematics, Univ. of California, Davis CA 95616.

California State Poly. U., Pomona, Dept. of Mathematics, two positions Assist. Prof. level, fall 1976, could lead to tenured appointments. (1) Computer Science Ph.D. Computer Science required. Overall responsibility for computer science program. (2) Statistics. Ph.D. in Statistics required. Some training in computer science desirable. Send Curriculum vita and three letters of reference to: Search Committee, Mathematics Dept., California State Polytechnic U., Pomona CA 91768. Deadline March 1, 1976.

U. of California, Santa Barbara, Department of Mathematics. (1) Postdoctoral Lectureships. One-year positions, possible renewal. \$13,000. Send vita and have four letters of reference sent to "Lecturer Committee". (2) Differential Topology or Differential Geometry. Required Ph.D., teaching and research. Send vita and have four letters of reference sent to "Geometry Committee". Department of Mathematics, U. of California, Santa Barbara, CA 93106. Deadline both 2/15/76.

Kansas State U. Dept. of Mathematics. Assistant Professor, 6-10 contact hours per week. Report, 15 August 1976. Deadline for applications 2/1/76. Require an active interest in both teaching and research. Prefer areas of physical science oriented applied mathematics or point set topology with emphasis on partially ordered structures. Applicants should have experience and interest in mathematics education. Strong consideration will be given to teaching experience and publications. Ph.D. required. Contact: John E. Maxfield, Head, Dept. of Mathematics, Cardwell Hall, Kansas State University, Manhattan, KS 66506.

U. of Maine, Orono, College of Business Administration, Instructor in Accounting for 1976-77 academic year with possibility of renewal. Requirements: Masters degree in B. A. and be a C.P.A. or C.M.A. Contact W. Stanley Devino, Dean, College of Business Administration, 8 South Stevens Hall, U. of Maine at Orono, Orono, ME 04473.

Towson State College, Assistant Professor or Instructor, start Sept. 1976. Should be qualified to teach courses in computer science and applied mathematics with emphasis in at least one of the areas of statistics, numerical sciences and/or operations research. Ph.D. and industrial experience desired. Send resume, official transcripts and at least three letters of reference to: Dr. Martha Siegel, Recruitment Committee, Mathematics Dept., Towson State C.,

Baltimore, MD 21204. Deadline March 15, 1976.

Towson State College. Assistant Professor or Instructor to teach computer science and data processing. Ph.D. in computer science or allied field desired. Send vitae, official transcripts and three letters of recommendation to: Howard Kaplon, Search Committee, Mathematics Dept., Towson State College, Baltimore, MD 21204. Deadline March 15, 1976.

U. of Michigan, Dearborn, Department of Mathematics and Statistics. Anticipate positions assistant professor level. Start Sept. 1976. Positions in Statistics, Mathematics Education and open. Teaching load 9 credit hours/term. Deadline 2/15/76. Contact: June Ounsted, Faculty Search Secretary, Dept. of Mathematics and Statistics, U. of Michigan, Dearborn, MI 48128.

Bucknell U. Presidential Search Committee invites nominations, applications, and recommendations of persons for President. Resumes or inquiries due 2/15/76. Start 7/1/76. Contact Mr. N. Gregory Doescher, Chairman, Presidential Search Committee, Bucknell University, Lewisburg, PA 17837.

U. of Texas, El Paso, Mathematics, two possible openings at Assistant Professor level. First position requires Ph.D. in Statistics. Second requires Ph.D. in Numerical Analysis or Approximation Theory with interest in Applied Mathematics or Computer Science. Start Sept. 1976. Send vita and letters of recommendation to John A. Narvarte, Chairman, Dept. of Mathematics, U. of Texas at El Paso, El Paso, TX 79968.

U. of Calgary, Div. of Statistics, Assistant Professor. Start 7/1/76. Requirements: Ph.D. in non-parametric statistics, sampling theory or statistical inference; active research; teaching experience. Division of Applied Mathematics (probably Numerical Analysis). Assistant Professor. Start Sept. 1976. Ph.D. required. Contact Richard K. Guy, Acting-Head, Department of Mathematics and Statistics, U. of Calgary, 2920 24 Ave. NW, Calgary, Canada T2N 1N4.

The fee for each regular advertisement to appear in the Newsletter is \$5 per issue. With our low dues structure and the high cost of publication, this is the minimum fee we can charge in order to break even. On the other hand, if a college, university or organization cannot afford the fee, then we will publish the advertisement without charge.

Advertisements to appear in the Newsletter should be sent to:

Editors, AWM Newsletter  
c/o Department of Mathematics  
Wellesley College  
Wellesley, MA 02181

Due Dates for ads for the Newsletter:

January Newsletter	copy by December 15
February Newsletter	copy by January 15
March Newsletter	copy by February 15
April Newsletter	copy by March 15
May-June Newsletter	copy by May 15
July-August Newsletter	copy by July 15
Sept.-Oct. Newsletter	copy by September 15
Nov.-Dec. Newsletter	copy by November 15

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The AWM job register is changing its method of operation. The job announcements we will now be sending out are those that will eventually appear in the Newsletter. However they will be mailed first class by the page rather than in a bulk mailing every month or so as the Newsletter comes out.

In order to receive these listings, please send several stamped self-addressed envelopes to:

AWM Job Register  
Department of Mathematics  
Wellesley College  
Wellesley, MA 02181

Address any question about the register to:

Judy Green  
Department of Mathematics  
Rutgers University  
Camden, NJ 08102

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LETTER FROM THE CO-TREASURERS AND CO-EDITORS

We wish to thank all of you who have sent contributions to AWM. They are much appreciated and much needed (Contributions are tax deductible, of course). Mentioned elsewhere in this Newsletter, as it has been in other Newsletters, is our desire to start a Legal Defense Fund. We would also like to have sufficient funds to allow AWM to help with the travel expenses of speakers at our Annual and Summer meetings, particularly for those speakers who cannot obtain travel funds from other sources.

Many of you have given memberships in AWM to your friends and relatives. Some of you have suggested that AWM have an appropriate card to be sent to these people telling them of your gifts. By the next holiday season we certainly hope to have such a card. Thanks for the suggestion.

Some of you have suggested that we make a note on the labels on the Newsletters reminding you if your dues are not yet paid. The note in the November-December Newsletter saying that the January Newsletter would not be mailed to people whose dues payments were not up to date was on each Newsletter and, of course, only applied to those people whose dues had not been paid. To date AWM has not had funds sufficient to allow us to have a continuous billing service. However, we are now in the process of sending a reminder (card) to everyone whose dues have not been paid for the October 1, 1975 to October 1, 1976 period. This should bring our records up to date. Then all any of us needs to remember in the future is that dues are payable each October first.

We thank all of you who have sent in articles and news items for the Newsletter. Keep them coming! They help the editors and make the Newsletter a more interesting publication.

JR & ATS

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MEETINGS OF INTEREST

AWM Sectional Meeting: Saturday, February 14, 9 a.m., Buena Vista Hotel, Biloxi, MS. Held in conjunction with the Louisiana-Mississippi MAA section meeting at the time.

1976 Annual Meeting of the American Association for the Advancement of Science, Boston, MA on February 18-24. On Wednesday, February 18, AWM member Lynn H. Fox will chair a session on Women and Mathematics. Participants in that session will be AWM members John Ernest, Edith H. Luchins and Carolyn MacDonald. Also participating in the session will be Elizabeth Fennema, Lucy Sells and Ravenna Helson. (Time: 3 p.m.; Place: Sheraton-Boston, Independence East) Also on Wednesday, February 18, at 3 p.m. (Hynes Auditorium, Room 202) there is a program American Mathematics: Retrospect and Prospect, sponsored by AAAS Section A, MAA, NCTM and SIAM. (It is unfortunate that the people plan-

ning the AAAS program scheduled both of these events for the same time.)

National Council of Teachers of Mathematics (NCTM) Annual Meeting in Atlanta in April. Shirley Hill, a member of the Program Committee, has arranged three sessions on "women and mathematics". One of the speakers will be AWM member Maita Levine, speaking on Reasons Why Qualified Women Avoid Mathematics. Patricia Casserly will speak on Young Women in Mathematics and the Physical Sciences: How the Schools Can Help. The third speaker will be William Nibberlink, his topic Sex Discrimination in the Mathematics Curriculum.

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NEWS NOTES

Judy Green and Eleanor Palais have written letters to the women who have received their Ph.D. degree in mathematics within the past year telling them about AWM and inviting them to join.

At the sectional meeting of NCTM in New York in December Nancy Myers distributed information about AWM and its aims and goals and an invitation to NCTM members to join AWM.

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ASSOCIATION FOR WOMEN IN MATHEMATICS  
MEMBERSHIP APPLICATION

Name and  
Address

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Institutional affiliation, if any \_\_\_\_\_

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Wellesley College  
Wellesley, MA 02181

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Individual  
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Oct. 1, 1976.)

Retired, Student,  
or Unemployed  
(\$2, Oct. 1, 1975-  
Oct. 1, 1976.)

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Contributions are tax  
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and needed.

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February - 1976

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