



TORREYANA

*A monthly newsletter for
Torrey Pines State Reserve*

Issue No. 235

December 1995

DOCENT SOCIETY HOLIDAY PARTY

Saturday, December 16, at 10 A.M.

The December meeting will be the docents' traditional holiday party, with fabulous food, awards, and fellowship. This is potluck, with members requested to bring a food item for the serving tables. In keeping with another tradition, members of this year's trainee group will handle the Lodge decorations, coordinated by John Burton. The decoration project, which usually turns into a small party for the participants, is scheduled for Saturday, December 2, at 9 A.M. A reminder to docents who may wish to bring decoration material later: no decorations with berries or other edibles (the mice are already well fed), and no greenery that readily loses leaves or needles.

President's Message

I look forward to seeing most of you at our holiday party on December 16. You will notice that your president is taller and has a deeper voice. Diana Gordon will be shivering in Wales while we celebrate in sunny California. She left office to pursue other interests, such as being a mother.

We face the challenge of maintaining the interest of the California public in their great state park system. We have amended our by-laws to permit us to do a small amount of lobbying to directly influence issues affecting the Reserve. Our interactions with visitors can help at least as much as lobbying to generate public support for the state parks and Torrey Pines State Reserve in particular. I hope we'll all do our best to infect visitors with our love for this place.

Don Grine

NORTH BEACH LOT CLOSURE

Effective November 27, the entrance to the North Beach parking lot will be closed to vehicle use for up to four months while the entrance area is renovated. A pedestrian walkway will be open on the left side except for a few days when road work may require it to be blocked. The restrooms will remain open.



HOLIDAY GREETINGS



Docent Doings

Docent of the Month - Although Claudia Clay just joined the Docent Society this year, she has been making substantial contributions that earned her recognition as the November Docent of the Month. If you have looked at the Lodge animal exhibits recently, you've noticed that they are acquiring professional appearing acrylic labels, thanks to Claudia. She has also participated in the children's walks and helped on the Reserve's reptile survey. This Indiana native moved to San Diego when young and has resided here since. She brings a diverse and unusual background to the Reserve: several years of work on bridge construction, four years at the Children's Zoo in the San Diego Zoo, cabinet maker, and current study in interior design at Mesa College. Eventually she would like to apply her interests in design and nature to museum exhibits in natural settings. The Society owes her membership to Ranger Chris Platis. She stopped by the ranger office to inquire about park aide positions, and when he learned of her interests, he suggested she join the docent group.

New By-Law Approved - At the November meeting a new by-law for limited political lobbying was approved by a three-to-one margin. The by-law was as given in the last issue with one change: in section 3, line 4, the word "telephone" was changed to "teleconference." This was necessary to conform with California Corporation Law. President Don Grine emphasized that Society lobbying would be limited to those issues having a direct impact on the Reserve or the Society. A summary of lobbying guidelines is posted on the bulletin board in the docent room. Docents are reminded that only Society-authorized lobbying will be done and that members on scheduled Society activities must refrain from all lobbying activity with visitors. Members as individuals may, of course, engage in political activities as they choose.

School Program a Hit - Barbara Wallach reports that the docent school program is off to a great start this year, with 278 children attending sessions in October and 428 in November. Six schools have been designated to receive grants for transportation costs, and one of these schools has already visited the Reserve. Barbara thanks the following docents for their work with the children's program: Margaret Bardwick, John and Myrna Burton, Ann Campbell, Jim Cassell, Pamela Drechsel, Wes Farmer, Susan Ferguson, Vida Fruebis, Ruth Ganeless, Ann Henrichs, Shirley Musser, Joan Nimick, Diane Sachs, Theo Tanalski, and Cindy Wollaeger. Thanks also to the docents on Lodge duty during the school visits.

Walks for Docents - Wes Farmer has scheduled two walks in December: Meet at the kiosk at 3 P.M. on Saturday, December 9, for an ebb tide stroll along the beach; and join Wes at 10 A.M. on Sunday, December 17, at the Lodge for a walk along the Fleming Trail to watch for whales.

NOTICE TO ALL DOCENTS: It is time to pay membership dues for 1996, \$10 for full members and \$25 for supporting members. Please send checks, made out to Torrey Pines Docent Society, to: TPDS, ATT. Shirley Musser, PO Box 2414, Del Mar, CA 92014, or leave a check in the Lodge cash drawer in an envelope marked "TPDS Dues." PLEASE, NO CASH.

PERIODICAL INFORMATION

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SUMMARIES OF RECENT MEETINGS ATTENDED BY DOCENTS

Coastal Sage Scrub - A Seminar on a Vanishing Habitat

Wes Farmer

Quail Botanical Gardens was host to an all-day series of seminars and discussions on the coastal sage scrub plant community, with speakers covering its past history, status, and actions underway to protect the remaining areas.

John O'Leary, Professor of Geography at San Diego State University, presented grim estimates on the loss of sage scrub in Southern California. In Orange County 66% had been removed by 1979, and he estimated that 85% had been lost by this year. In San Diego County much of the sage scrub areas has been lost through conversion of the land to agricultural uses. The remaining sage scrub is found in fragmented and isolated areas. It also is adversely affected, along with plants in general, by the increases in ozone in the air, which experiments have shown interfere with healthy plant growth.

Scott McMillan, a graduate student in biology at San Diego State University, discussed the relationship between vernal pools and sage scrub and the need to consider these pools in any protection plans for the sage scrub. He noted that the San Diego mesa mint, a vernal pool dweller, was the first plant species to be selected for the endangered species list. Miramar Air Station has most of the remaining vernal pools in the County.

Jim Dice, Plant Ecologist for the California Department of Fish and Game, reviewed threatened and endangered plants in Southern California's sage scrub community. Some of these plants are here in the Reserve: *Agave shawii*, *Coreopsis maritima*, and *Dudleya blochmaniae* ssp. *brevifolia*.

There are efforts underway to restore areas that were part of the coastal sage scrub. Mike Evans, Tree of Life Nursery in San Juan Capistrano, is growing species in containers and using in landscaping. Ronilee Clark, Senior Resource Ecologist in the California State Park System, described work to restore areas in the parks and discussed machine reseeding at Crystal Cove State Park in areas hard packed by vehicles.

This was a very informative seminar; thanks to Julian Duval, Executive Director of Quail Botanical Gardens, for hosting this program.

Docent League Meeting

Georgette Camporini

The Docent League of San Diego County's annual meeting was held on the Berkeley (the Maritime Museum moored next to the Star of India) on October 16, 1995. The theme "Showcasing San Diego" featured gala displays of brochures, pictures, plants, and information from almost forty organizations. Susan Mason, of the San Diego International Visitor Information Center at Horton Plaza, and Yvonne Kuhn, Coronado Visitor and Recreation Bureau, were also present.

A list of San Diego County "Points of Interest," compiled by the Docent League of San Diego County, is on the bulletin board in our docent room.

Know Your Counselors - Sally Spiess by Opal Trueblood



The woman who states that her major life achievement was "raising five children" has just been named "Champion Award Recipient" by San Diego's Citizen Coordinate for Century Three in their Annual Awards, which include Lucy Killea and Jonathan Segal among others. Sally Spiess, nee Sarah Scott Whitton, is very modest about her contributions to the Torrey Pines Association. She became a member of the Association in the early 1960s, now serves as Vice-Chair of the Board of Counselors, and has been in the past Secretary as well as Chairperson.

A third generation Californian, born in Oakland, Sally came to La Jolla with her family in 1952. Her father, Charles Abel Whitton, before coming to La Jolla was Head of Architecture and Engineering of the Oakland Public Schools. Sally was educated at the University of Oregon, the home state of her mother. She has two sisters: Ann W. Giedt, a former micropaleontologist now an interior decorator, and Carroll W. Notthoff, who now heads the Menlo Park Chamber of Commerce. But her children and eight grandchildren - Kathy, a high school math teacher with one son; MaryLiz, a manager for Pacific Bell with two children; Morgan, a musician in Oregon; Helen, a district PTA president with three children; and Peggy, an artist with two children - are her special pride.

With all of these birthdays and anniversaries to remember, Sally is founder of a new holiday called National Son-In-Law Day, celebrated on June 16. Each of her sons-in-law receives a present on that special day.

Sally is married to Fred Noel Spiess, Professor Emeritus of Scripps Institution of Oceanography. For many years he was Director of the Marine Physical laboratory at Scripps. One of her special memories is of her christening of FLIP, one of the vessels of the Scripps fleet.

Since coming to La Jolla Sally has had a long association with Torrey Pines. The family lived near the Flemings, and Sally remembers Mrs. Fleming washing her hair in rainwater and drying it outside in the sunshine. Other memories include her involvement in the "Save Your Pennies" campaign for schoolchildren in the effort to acquire the Extension as part of the Reserve. She also remembers the many parties she managed, such as the dedication of the Guy Fleming Trail and Bulletin Board, birthday parties for Peggy Fleming, numerous Reserve anniversary celebrations, and the book signing party that launched Bill Evarts's *TORREY PINES Landscape and Legacy*.

Among other activities, she served as Co-Chair of the La Jolla Height Limitation Committee, which brought the 50-foot limitation on the height of buildings constructed in La Jolla, and was Chair of the San Diego SWAP (Small Wilderness Area Preserves) group that raised the funds for the acquisition by the County of the Wilderness Garden Preserve in Pauma Valley.

In Sally's vision for the future of the Torrey Pines Association is the hope that the group will become more alert to issues which threaten the Reserve, the encouragement of more interaction with neighbors on the plateau and near the Lagoon so as to educate them about the needs of the Reserve, and bringing new, younger members onto the Board of Counselors to ensure its future.

Dolphins Know Stress, Too.

Contemporary living presents us with many problems and challenges, sometimes with resultant stresses that may be so severe that medical treatment is required. The effects of stress are not limited to humans, for as we are beginning to understand, our interactions with members of the animal world can generate sufficient stress in them to cause serious consequences. Docents at the November meeting welcomed back guest speaker Dr. Al Myrick, Southwest Fisheries Science Center on La Jolla Shores Drive, who brought us up to date on his research on stress effects in dolphins. At the July 92 meeting he described his investigations of stress in dolphins caused by commercial tuna fishing. His work since then makes a convincing case for stress-caused mortality of dolphins brought about by commercial tuna fishing practices.

The dolphins' problems arise from their superior skills in locating fish for their food. Tuna have learned about this, so they follow the dolphins, depending on them to locate schools of fish. Commercial fishermen use speedboats and helicopters to chase and eventually round up groups of tuna, collecting many of the dolphins at the same time. Although the Marine Mammal Protection Act has reduced the number of dolphin deaths by requiring netting methods that make escape easier for dolphins, many thousands still die each year.

Based on his investigations, Dr. Myrick offered the following explanation of stress effects in dolphins. Situations that can cause stress include pain, perceived danger, starvation, confinement, and exhaustive exercise. The last two factors are obviously present during the chase and round up of the tuna and dolphins. A stress situation causes the adrenal gland to secrete cortisol (this steroid hormone stimulates the change of amino acids into glucose for quick energy), which causes a decrease of calcium in the blood. In response to this loss, the parathyroid gland secretes a hormone that causes calcium to be transferred from bone, tooth, and muscle to the blood system. The loss of muscle action, caused by the calcium depletion, appears to be a critical factor in the death of many dolphins. The speaker showed photographs of dolphins inside capture nets after they had been chased (along with the tuna) by fishermen. The dolphins displayed little movement, appearing to be in a state of narcosis. Many of these dolphins die from asphyxiation, brought about by muscle paralysis caused by calcium depletion from stress. Dolphins that are able to avoid being caught in the nets may also display the symptoms of stress with similar results.

For members interested in further information, Dr. Myrick left a copy of an article he and an associate have submitted to *Pathophysiology*, "Adrenocortical color darkness and correlates as indicators of continuous acute pre-mortem stress in chase and purse-seined captured male dolphins," which is in the docent library file of reports.

[Note: Dr. Myrick had planned on giving this talk at the January 96 meeting. The scheduled speaker for the November meeting had to cancel because he had to be at a Caltrans site, so his talk on fossils has been rescheduled for the meeting next January. The Society thanks Dr. Myrick for graciously changing his own schedule so that he could be with us for this meeting.]

IN MEMORIAM: BETTY STEPHAN

The Society recently learned of the death of docent Betty Stephan last August. Betty grew up in northern Wisconsin and developed an early interest in nature, including a life-long commitment to birding. She received a college degree in biology and taught science, English, and social studies at Palm Springs High School. After working as a medical technologist and industrial hygienist, she attended graduate school in library science and eventually ended her work career in the library of the Southwest Fisheries Science Center in La Jolla, where she was a good friend of Dr. Al Myrick (see above).

In 1991 Betty joined the Torrey Pines Docent Society to pursue her nature interests and "to help visitors learn about and enjoy this lovely place." Betty helped Kathy Watson with meeting refreshments when Kathy had that position, and she took on the job of compiling the *Torreyana* index.

When Betty learned she had terminal cancer, she decided to fulfill some of her interests, including a six-week return visit to an ecological reserve in Venezuela. She was a very private person and did not discuss her illness even with her sisters until near the end. She continued to participate in nature activities, including local bird counts, until no longer physically able. She spent her last months attended by a sister from Oregon and lived in a trailer home in Encinitas where she had cared for her sister Elsie, who died in December 94.

Reserve Research Notes

What Does an Environmental Services Intern (ESI) Do?

Docents regularly see the Reserve's rangers and park aides and are familiar with their duties, but most members are probably not aware of the wide variety of projects that the Reserve's two ESI people support. Some of Stacie Hathaway's work was described in the October 95 *Torreyana*, and Charlie Kerns's activities are discussed here.

You won't often find Charlie in the staff office, for he is usually in the field working on projects well matched to a real "plant person." Charlie grew up in San Diego and during his first two years at UC Davis realized that plants were his interest. He transferred to the U. of Hawaii and received a degree in tropical horticulture. After returning to San Diego, he started doing volunteer work for Ranger Chris Platis and helped with the first planting of Torrey pine seeds and seedlings. He became a park aide in February 94 and later changed to an ESI position.

One of his main efforts has been restoring the areas previously occupied by Hottentot fig, which was either sprayed by docent Dave Economou or removed by docents and volunteer groups. Charlie is following developments for several conditions of these areas: sprayed and not cleared, sprayed and cleared, reseeded by Charlie, reseeded by natural processes, etc., so there are a number of variables. The areas he has reseeded use seeds he collected by hand in the Reserve during the summer of 94 and include buckwheat, deerweed, wand chickory, three spot, and goldenbush. While evaluations and further reseeded will have to continue for another year or more, there are already some preliminary observations. The cleared areas have much more plant growth than the uncleared ones. For the areas seeded by hand, a few areas did much better than others. And so far the areas hand seeded at higher densities don't appear to have denser growth than the areas covered with a "standard" density of seeds. Charlie will do more reseeded this month, and during the coming year there should be sufficient results to identify the best ways to restore these areas.

He is also monitoring the status of the Torrey pine seedlings planted in the spring of 94. Of the 512 seedlings planted in three areas, 125 are still alive. Some of the seedlings in the Fleming Trail area were watered during the summer of 94. By the fall of 94 there did not appear to be any effect of watering on survival, but by now the results show that the watered seedlings have a significantly higher survival rate. Three age groups of seedlings (4, 9, and 14 months) were planted, and initially protective screens were not used. The oldest seedlings were most successful in surviving animal browsing, presumed to be rabbits, based on the way the needles were cut.

Charlie plans to be here during the next year or so to continue working on these projects but eventually hopes to pursue academic work in phytogeography, a branch of environmental studies in which ecosystems are identified by their floral components.

A Sociology Study in the Reserve

During the last two months docents may have seen Stephanie Corbett around the Lodge and assumed she was a new park aide. Not so. She is finishing her senior year at UCSD (will receive her B.S. degree in sociology this month) and is here on an academic internship program to evaluate the children's education program. She is looking into how the backgrounds of the children influence their views of nature and affect their learning experience while in the Reserve. She has been an observer on some of the docent-led walks with the children, talked to the teachers, and visited a classroom to observe a follow-up class discussion. As part of this UCSD program, she will prepare a paper on her work here, which should be helpful to the docents on the children's program. Stephanie is enthusiastic about this docent activity and very impressed about the knowledge and commitment of the docents doing this work.

Shh! The Snake May Hear You.

Can snakes hear, you ask? A few decades ago the answer was no, for - obviously - snakes don't have external ears. And anyway, snakes don't appear to respond to loud noises. Further support for this view is found in some current zoology texts, which still report that snakes lack the sense of hearing. But research begun about 35 years ago, especially the extensive investigations over many years by E.G. Wever and associates at Princeton University, has shown that snakes have a hearing capability (at least in an electrophysiological sense) comparable to that of lizards. This should not be too surprising, for snakes and lizards share some common features and are thought to have common ancestors.

So how can a snake hear, lacking external ears? By having equivalent structures on each side of its head. The skin and muscle tissue on each side of the head cover a loosely suspended bone, called the quadrate, which undergoes small displacements in response to airborne sound. The quadrate motion is transferred by intermediate structures to the cochlea, which produces electrical signals on its hair cells that correlate with the airborne sounds (within a range of intensity and frequency determined by the ear system) and are transferred to the brain. Cochlear signals are present in functioning ears of all classes of vertebrates from fish to mammals, while animals that are congenitally deaf produce no such signals, so their presence in response to sound is taken as an indication of the hearing sense.

Wever and co-workers [1] developed techniques to measure the hair-cell signals in lizards, snakes, and amphibians, which involved anesthetizing the specimen, inserting a very thin wire probe into contact with a hair cell, and measuring the acoustic signal level needed to produce a specified hair-cell signal (typically 0.1 microvolt). Various experiments were performed to demonstrate that the hair-cell signals were in direct response to airborne sound and not to mechanical vibrations from the medium on which the specimens were placed. Simplified frequency sensitivity responses (from ref. 1) of a common snake and lizard are shown in the graph at the bottom of the page. According to Porter [2], the auditory response of snakes in the range of 200 to 300 Hz is superior to that of cats.

Hartline and Campbell [3] investigated the transmission of airborne sound through the snake's skin and lung into the inner ear. Wever's results show that this type of transmission, called the somatic mode, is much reduced compared to that through the skin to the quadrate, which is the main mode of hearing.

How are the cochlear responses to be interpreted? Wever points out that it is often difficult to determine the role of hearing in lower forms such as reptiles. It is possible that snakes make less use of the auditory sense than other animals. He notes that the maximum sensitivity occurs in the frequency range of noise made by movements of large animals, so detection of such sounds could function as a warning to snakes to be motionless, a common defensive action with animals. (Although not discussed in the references I was able to check, there is also the question of how the cochlear signals are used in the snake brain. Is it possible that the ability to process this information has been or is being lost?)

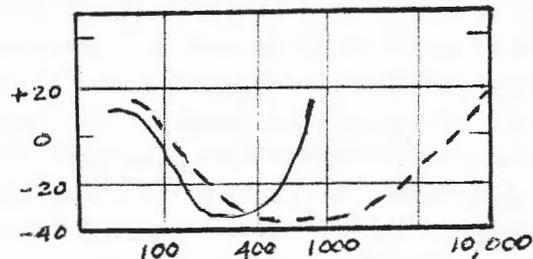
So the next time you meet a snake on the Reserve trails, be careful what you say to it, for the snake may hear more than you realize.

Acknowledgments - My thanks to R. Haase, research associate with the UCSD Biology Dept., for informative discussions and reviewing this article, and to docent Jim Cassell for the illustration below.

References -

1. Wever, E.G., *The Reptile Ear*, Princeton University Press, 1978.
2. Porter, K. R., *Herpetology*, Sanders Co., 1972.
3. Hartline, P.H. and Campbell, H.W., "Auditory and Vibratory Responses in the Midbrains of Snakes," *Science*, vol. 163, 1221, (1969).

John Carson



Frequency sensitivities for a gopher snake (solid line) and a fence lizard (dashed line). Vertical axis is minimum sound intensity in decibels (dB) for a 0.1 microvolt cochlear signal (20 dB = a factor of 100). Horizontal axis is frequency in cycles per second. Maximum sensitivity is at bottom of curves.

Who Built the Extension Gabions?

Walking up the trail into the Extension from the south entrance, one sees small dam-like structures that consist of rocks contained by what appear to be fence material. These are called gabions. (American Heritage Dictionary - gabion 1. A cylindrical wicker basket filled with earth and stones, formerly used in building fortifications. 2. A hollow metal cylinder used especially in constructing dams and foundations.; from Italian gabbia, cage.) These are actually the second structures to be built to control erosion in this area.

Prior to about 1960 the bottom of the Extension "valley" was covered with shrubs and plants. A fire in 1962, removal of brush a few years later, and then installation of water and sewer lines and a dirt access road up the center of the valley all led to serious erosion, with deep gullies formed by water runoff. About 1970 some of the local residents, with tacit approval of the rangers, started building small dirt dams to reduce erosion. These were over 6 feet high and were covered with plastic with rocks on top to hold the plastic. Over the next few years about a dozen residents, with help at times from scout groups, built a number of these dams. The photo below, courtesy of Jessie La Grange, shows one of the dams (1973).



In 1977-78 these were replaced with the present gabions, built by the Youth Conservation Corps (YCC) and the California Department of Forestry. According to Ranger Chris Platis, who worked with the YCC, about 35 gabions were built. Many of the gabions are now in need of rebuilding, and additional retaining structures appear to be needed, which shows the power of rain runoff in even a small area such as the Extension.

My thanks to Jessie and Lee LaGrange and Ranger Chris Platis for information on this part of the Extension history.

Torreyana Anniversary

Last March we celebrated the 20th anniversary of the Docent Society, and this month is also special, for the first issue of the *Torreyana* appeared in December 1975. How did the name *Torreyana* come about? According to an article in the April 81 issue, it was suggested by Helen Witham (Chamlee), who played an active part in the organization and first training of the docents (see p. 8 of the June 95 issue). Early issues were 8-1/2 by 14 inches, with various colored paper used. The first few issues were written by a committee, with an editor taking over in 1976. Past editors were: Sunny Rankin, 76 -78; Judy Schulman, 78 - 80; Millie Horger, 80 - 84; Isabel Buechler, 84 - 88; Marion Dixon, 88 - 94; and Wes Farmer, 94. It is interesting to note that a number of past officers are no longer members, but all the past editors except the first one are still with the Society, which may say something about the commitment (or endurance ?) of editorial people.

Report From the Ranger

Reserve parking - With 70 or more members now attending meetings, there is very little parking space left for visitors on meeting days. Supervising Ranger Bob Wohl requests that members ride pool or park in the lot by the kiosk, especially during those times of the year when the Reserve has large crowds.

Trail Maintenance - Ranger Chris Platis announces the formation of a group, the TPSR Trail Maintenance Volunteers, to help with trail work throughout the Reserve. The group will meet the second Saturday of the month at 8 A.M. at the Lodge for a short meeting to review the projects for the day and then proceed to work on the trails for the rest of the morning. Typical projects include cutting back overgrowth, building water diversion bars, putting in new posts and cables, etc. One objective is to bring together various service groups, scouts, individuals, and docents into a coordinated activity for maximum effectiveness of volunteer efforts. See Chris for further information.

Editor's Notes

- 1. Corrections** - In the last paragraph on p. 5 of the Sept. 95 issue, "diving turbot" should be "diamond turbot." In the Acknowledgments paragraph on p. 7 of the Nov. 95 issue, "Bynam" should be "Bynum."
- 2. January 96 *Torreyana* Deadline** - Because I have to report for jury duty on Dec. 26, all inputs for the January 96 issue will have to be available by Tuesday, Dec. 19.
- 3. *Torreyana* Delivery Problems** - If you have not received recent issues, call Elizabeth Nicoloff.

TPDS Board

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Editor: John Carson
Staff: Elizabeth Nicoloff, Glenn Dunham,
Del Roberts, Walt Desmond

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DECEMBER DUTY CALENDAR

| SUNDAY | MONDAY | TUESDAY | WEDNESDAY | THURSDAY | FRIDAY | SATURDAY |
|---|--|----------------------------------|---------------------------------|--------------------------------|----------------------------------|---|
| 31 L Marley W P. Bardwick | DUTY COORDINATOR: Elaine Sacks 551-0708 HOURS: Lodge Daily 10-1; 1-4 Walks Sat/Sun/Hol 11 & 1 If you cannot do your duty, please arrange your own substitute. | | | | 1 L R. Miller L Farmer | 2 L Francis Ferguson L Murthy Stiegler |
| 3 L Weller W Cassell L Stone W Dixon | 4 L R. Miller L Amanns | 5 L D. Miller L Brickelm'r | 6 L Margulies L Musser | 7 L McDonald L Marshall | 8 L Clay L Gittelsohn | 9 L Philips Brav L Murthy Stone |
| 10 L Schulman W D. Miller L Schulman W P. Roberts | 11 L Cooper L Huber | 12 L Talberts L Shaw | 13 L Burtons L Musser | 14 L McDonald L Marshall | 15 L Campbell L Gittelsohn | XMAS PARTY 16 L Parnell W Brav L Parnell W D. Miller |
| 17 L Heller W Cassell L P. Roberts W Ferguson | 18 L Watson L Huber | 19 L Talberts L Shaw | 20 L M. Bardwick L Oswalt | 21 L Clark L | 22 L Clay L Marine | 23 L Watson W Dixon L W D. Roberts |
| 24 L P. Bardwick W L W | 25 CHRISTMAS L Cooper W D. Roberts L E. Sacks W Stiegler | 26 L L | 27 L Marine L Oswalt | 28 L Clark L Oswalt | 29 L L | 30 L Ganeless W Nimick L W Stein |

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