Labs Scientists Isolate Elusive Spores

Separating micro-organisms from soil samples, a problem that has troubled microbiologists for years, has been achieved through a relatively simple new technique developed in the Planetary Quarantine Applied Science Division at Sandia Laboratories.

The new technique involves washing a soil sample with Freon which, because of its high specific gravity, can be used to float spores and other soil organisms to the surface of the Freon-soil mixture. Freon has a specific gravity of 1.55, compared to less than 1.0 for ethanol, a solution commonly used as a separation medium. The particular spores separated with the Freon have a specific gravity of approximately 1.30.

In addition to being quite heavy, Freon is inert to micro-organisms and has a low viscosity, thus is easy to filter. Freon is used extensively for cleaning purposes, but has apparently not previously been used as a separating medium.

Use of Freon resulted from Sandia's effort to isolate a particularly heat resistant spherical spore found in soil samples at Cape Kennedy. It appeared that soil particles might (Continued on Page Two)

Generalized Circuit Device
Invented by Dave Skogmo
Is Patented by AEC

A patent has been granted to the AEC for a generalized integrated circuit invented by Dave Skogmo of Semiconductor Circuits Division 1932. The circuit can be used to perform virtually any digital function. The tiny device is roughly the size of the eagle's head on a quarter.

Integrated circuit chips are generally manufactured to perform a specific function such as that of logic gate. By contrast Dave's circuit is a multi-purpose component which is made to function for a specific purpose simply by furnishing the appropriate pattern of connecting resistors and conductors on the substrate.

The device includes nine diodes, three transistors and two resistors, and it measures only 60x40 mils. Output/input is furnished by a 16 x 5 mil beam leads which connect directly with leads on the printed circuit board. Four additional beams serve two cross-over conductors, and seven beams are left blank for use with cross-under conductors.

Because of its versatility, the device readily lends itself to changes in circuit design; simplicity of production is also a feature.

Dave has been involved in integrated circuit development since joining Sandia in 1962 after earning a BS in EE at Kentucky University. He completed MS work at UNM in 1964 under the old Technical Development Program.
Events Calendar

March 3-5 — Rodcy Season presents "Major Barbara," Keller Hall, 8:15 p.m. For reservations, 277-4402 or 277-4522.

March 3-5 — "America Hurrah," Old Town Studio's Back Door Theatre, 8 p.m. For reservations, 277-4402 or 277-4522.

March 3-7 — March 3-5 - Rodey Season presents "March 5 - N.M. Mt. Club, Exploratory Town Studio's Back Door Theatre, 8 p.m. For reservations, 277-4402 or 277-4522.

March 3-5 - Motorcross motorcycle races, 243-9461, ext. 242.

March 11-12 — N.M. Ski Touring Club, 28 miles N of Albuquerque off 1-25, noon. For reservations, 242-4602.


March 16 — Audubon Wildlife Film Series, "Tribute of East Africa," 7:30 p.m., Popejoy Hall.

March 17 — University of Albuquerque Choral Society, Community Concert Series, Popejoy Hall, 8:15 p.m.

March 19 — Murray Louis Dance Theater, Keller Hall, 8:15 p.m.

March 20 — The Stockholm University Chorus, Community Concert Series, Popejoy Hall, 8:15 p.m.

March 21 — Albuquerque Symphony Orchestra, Popejoy Hall, 8:15 p.m.


March 23 — University of Albuquerque Choral Society, Community Concert Series, Popejoy Hall, 8:15 p.m.

March 24 — Murray Louis Dance Theater, Keller Hall, 8:15 p.m.

March 25 — University of Albuquerque Choral Society, Community Concert Series, Popejoy Hall, 8:15 p.m.

March 26 — Murray Louis Dance Theater, Keller Hall, 8:15 p.m.

March 27 — University of Albuquerque Choral Society, Community Concert Series, Popejoy Hall, 8:15 p.m.

March 28 — Murray Louis Dance Theater, Keller Hall, 8:15 p.m.

March 29 — University of Albuquerque Choral Society, Community Concert Series, Popejoy Hall, 8:15 p.m.

March 30 — Murray Louis Dance Theater, Keller Hall, 8:15 p.m.

March 31 — University of Albuquerque Choral Society, Community Concert Series, Popejoy Hall, 8:15 p.m.

SPORES

be providing some insulation from the dry heat used to sterilize the samples, and it thus became necessary to isolate the spores from the soil.

When Sandia scientists first used Freon as a means of floating the spores, the washing attempts were not completely successful — because moisture in the soil prevented complete penetration of the Freon. To solve this problem, soil samples were first heated in an evacuated oven and the oven was then back-filled with dry nitrogen.

Next, the sample container was tightly sealed, removed from the oven, cooled to room temperature, and Freon added. The mixture was subjected to ultrasonic vibration and then allowed to settle. Surface fluid containing the spores was then drawn into a sterile beaker.

Development of this technique permitted studies of very hard native spores which, in turn, prompted a re-evaluation of spacecraft sterilization requirements.

Participants in the study, a part of the work Sandia is conducting for NASA to insure that spacecraft do not carry contaminants to other planets, were Willis Whiffend, Dan Garst and Kermitt Lindell, all of Planetary Quarantine Applied Science Division 1742.

SPORES

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Continued from Page One

CONFERENCES

President Hornbeck will give the opening address at the Physical Electronics meet and will present the Nottingham Prize for the best student paper. Invited speakers include D.E. Eastman, IBM Watson Research Center; Erik Bøgh, Institute of Physics, University of Aarhus, Denmark; John Lambie, Scientific Laboratory, Ford Motor Company; Gerhard Ertl, Technische Universitat, Hannover, Germany; and N.D. Lang, IBM Watson Research Center. The program includes tours of Sandia Laboratories.

Opening remarks at the AVS conference will be made by M.H. Francombe, Westinghouse R&D Center, and president-elect of AVS. Invited papers on the theory and application of quadrupole mass filters will be presented by W. Brubaker, Analog Technology Corp.; N.R. Whetten, GE; G. Bynard, Utie Technology International; M. Story, Finnegan Corp.; P.H. Dawson, Cité Universitaire, Quebec; and W.L. File, Extracellular Laboratories.

Continued from Page One

LAB NEWS

Published every other Friday

SANDIA LABORATORIES

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Bill Laskar is the Photographer.

In Livermore, Lorena Schneider Does IT All

VISITORS to the Labs recently were AEC Commissioner Clarence Larson, at left, and Senator Howard Baker (Tenn.), shown here talking with President Hornbeck. The Senator is a member of the Joint Committee on Atomic Energy.
**Dave Pierce Awarded Master’s Degree**

Dave Pierce (8131) received an MA degree in industrial design recently from San Francisco State College. His thesis was entitled, "A Study of the Temperature and Power in the Radiant Spectrum of an Exploding Wire.

Dave joined Sandia/Livermore in 1961 after receiving his AA degree in electronics engineering technology from San Francisco City College. For eight years he was assigned as a staff assistant technical in the electrical sub-systems organization, and subsequently transferred to his present position in the Preliminary Design Division.

His graduate work, as well as his BA degree also in industrial design from San Francisco State College, were completed out of hours under Sandia's Educational Aids Program (EAP).

**Supervisory Appointment**

WALTER BAUER to supervisor, Physical Research Division II, 8334, effective Feb. 16.

Since joining Sandia/Livermore in July 1969, Walt has worked in the Physical Research Division where he has studied helium migration in metals, surface characteristics using X-rays and more recently, hydriding phenomena in selected materials. Before Sandia, he was employed by Atomics International, doing materials research for the reactor program.

Walt received his BS degree in physics from the University of California at Berkeley in 1957 and his MS and PhD degrees in physics from the University of Illinois in 1959 and 1962 respectively. He is a member of the American Physical Society and Phi Beta Kappa.

Walt, his wife Suzanne, and their son and daughter live at 911 Via Del Paz, Livermore.

**Sympathy**

To Bill Campbell (8161) for the death of his father-in-law in Anaconda, Mont., Jan. 26.

To Bob Humphrey (8178) for the death of his mother-in-law in Concord, Calif., Jan. 20.


To Jerry Starr (8257) for the death of his mother-in-law in Okemah, Okla., Jan. 18.

To John (8421) and Betty Barnhouse (8433) for the death of his mother in Kansas City, Mo., Feb. 6.

To John Brown (8353) for the death of his father in Oklahoma City, Okla., Feb. 1.

To Emily Whiteport (8227) for the death of his mother in Philadelphia, Pa., Feb. 6.

To Gordon Knihy (8421) for the death of his mother in Walnut Creek, Feb. 15.

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**LIVERMORE NEWS**

**VOL. 24, NO. 5**

**LIVERMORE LABORATORIES**

**MARCH 3, 1972**

for Livermore/Amador Valley

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**1972 Bi-Centennial Year**

As an eight-generation Californian, Herbert Hagemann is descended from the old Spanish families of Bernal and Castro. The family home on Olive Avenue in Livermore, where he resides, was once part of the Bernal's Rancho El Valle de San Jose. Herb has maintained a strong interest in Valley and California history, writing articles for the University of the Pacific's periodical, THE PACIFIC HISTORIAN, as well as delivering lectures in the Bay Area. Much of his historical material is obtained from family documents.

This is his first of a series on the early history of the Livermore/Amador Valley.

Today's Livermore/Amador Valley was once the home of a few thousand aborigines who lived along its arroyos, lakes and swamps, in a primitive fashion, feeding on the products of the land and forests. Their food consisted of acorns from the abundant oaks on the Valley floor and adjacent hills, the wild rice of the swamp lands, and native game such as deer, antelope, bear and ground squirrels. To supplement their diet, the lakes, arroyos and swamps provided waterfowl and shell fish such as clams and shrimps. Early hunters and explorers reported that herds of antelope fed on the Valley floor. To make better pasture for the native game, the Indians burned the northern hills to clear the brush and trees, which probably accounts for the bareness of that area today.

Not only was food abundant, but the native villages were also on the trade routes leading from the interior to the coast. Local produce - acorns, wild rice, the feathers of native birds - was traded for obsidian for arrow heads, feathers of exotic birds, and the like. Exactly when these people lived here is not precisely known, but it is clear that the local aborigines dwelt in the Valley for thousands of years.

The year 1972 marks the bi-centennial year commemorating the first discovery and exploration of our Valley by Europeans. In 1772, expeditions were sent out by the Royal Spanish Government to explore the reaches of San Francisco Bay and the interior east of the mountains. On April 2 of that year, Captain Fages and Father Crespi led a party of soldiers, carrying the banners of Don Carlos III of Spain, across the western end of the Valley floor, traveling from north to the south. Father Crespi wrote in his diary, "This day we covered two leagues, and by the same valley, all level land, covered with grass and trees - and with numerous villages of very gentle heathen, many of them of fair complexion." He noted that wild game of all types was abundant and that there was good forage, mainly wild oats and a special clover bearing a sticky buff which seemed to be most palatable to horses. He also noted a good site for a mission. The clover referred to was the native California Burr Clover which still abounds.

The appearance of the Valley was different then, and the Spaniards observed that the flat land was largely covered by the willow swamps that encompassed two lakes, a larger one to the west and a small lagoon at the end of the Las Positas and Tasagera Arroyos. Creeks flowing through the flat areas were bordered by white oaks and sycamores, and scattered oaks dotted the floor of the Valley. Early pioneers noted that it was possible to walk from Livermore to Pleasanton without being exposed to the sun, if you walked at night.

In the same year a second expedition carrying the banner of the Spanish king and led by Captain De Arigo first entered the Valley from the eastern end, coming from the interior by way of what is now called Patterson Pass. Thinking they had lost their way, they pursued a straight line course over the mountains to a southerly point directly on the road to Monterey, their destination. The group labored past Crane Ridge and Cedar Mountain, through a long narrow mountain valley which they named for San Antonio, past Mount Hamilton, and then dropped down into the Santa Clara Valley.
Credit Union Reporter

By Bill Bristol, General Manager

At its February meeting, your Board of Directors approved several changes to Credit Union operating policy in order to expand and improve services. These changes, effective March 1, include:

1. Increasing life insurance loan coverage from $5,000 to $10,000. This coverage is applied to the combined total of all loans to a member. The Credit Union is also checking into providing optional coverage for those amounts in excess of $10,000, with the premium paid by the member.

2. Eliminating the collateral requirements on loans to retired members. Retired members now qualify for all types of loans. In the past certain loans were available only to active employee members.

3. Increasing the loan value on new automobiles, trucks, motor homes, travel trailers, boats, campers and mobile homes from 2/3 to 3/4 of list (sticker) price. The difference can be financed by use of other collateral, including signature, to provide 100 percent financing in most cases.

With permission of the National Credit Union Administration, the Board also approved the payment of dividends at the close of business on the last day of the dividend period (each calendar quarter) rather than the first day of the following quarter. (Any withdrawal of paid up shares on that day would result in the loss of the earned dividend.) This places dividend payment on the same basis as that of other financial institutions and should eliminate a lot of confusion. Statements for the first quarter of 1972 will be mailed to Jan covering the final quarter of 1971 and one on March 31 covering the first quarter of 1972.

Consumer Help

Let's Buy Well & Wisely - We've received an interesting booklet "Consumer Product Information" which lists in its 15 pages over 200 publications, available from the Federal government, that relate to products of interest to consumers. Sample titles: "Selecting Auto Safety Restraints for Small Children - 10c; Managing Your Money - 15c; Mushroom Growing - 10c; Selecting and Finishing a Home - 15c; Family Food Budgeting - 15c; and sure-to-be-a-best-seller, Nuts in Family Meals - 10c. This is a good listing for consumers, and the booklet is available for free by writing Consumer Product Information Distribution Center, Washington, D.C. 20047. We have a copy in the LAB NEWS office if you want a look-see.

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CU Bulletin Board

Sales Tax Deductions - According to a release from IRS, the amount you can deduct for sales tax on Federal tax returns now appears in tables contained within the 1040 tax instructions. Sales tax on automobiles, boats, trailers, and airplanes is not included in the table. Taxpayers who bought these items in 1971 may add deductible sales taxes paid on them to the amount shown in the table.

Electrostatic Recording Device Invented by Phil LaPoint

The AEC has been granted a patent for an electrostatic recording system invented by Phil LaPoint of Facilities/Test Equipment Design and Development Division 9344.

Incorporated into a test monitoring system, the electrostatic recorder permits monitoring and recording of data from any number of channels. Programmed to print deviations from normal on a paper graph, the system has speeded up and simplified component testing.

A simple and versatile system, the recorder requires no "erase" function. Data are recorded at a rate of 1000 samples per second on the thin revolving drums of the recorder in combined digital and analog form. The instrument records in volts (rather than millivolts as in tape systems), providing substantially improved signal-to-noise ratio. Playback of the recorded data can be at any desired speed with no compensation required. Playback at 1/100 of recorded speed is entirely feasible.

Phil believes that such systems could be used in other applications besides component testing. For instance, in a medical application, it could continuously monitor a patient's heart beat, sound an alarm if the situation changed, and immediately print a graph for use by the doctor in diagnosis of the condition.

Phil has been at Sandia almost 15 years and holds three patents for devices invented before he came to Sandia.

Speakers


New Librarian Brings Many Talents to Job

Pat Newman is soft-spoken, knowledgeable, charming and very busy. She is wife to Wallace (1411); mother to John, age 10; Karen, 9; Jim, 5, and Mark, 2; daughter of Mr. and Mrs. John Tolmie (John works in Org. 1614 and Mrs. Tolmie is a former Sundan); she is an engineer with a BS in EE; she is a translator with a BA in modern languages (major in German, minor in Russian plus a working knowledge of French and Spanish); and she now works at the Labs as a reference librarian and translator.

During the half day reserved for her translation work, the recently-hired librarian/translator gives first priority to providing translation services that cannot be readily acquired through outside agencies. For example, Pat can give an immediate oral translation of portions of an article. She can also dictate translations onto tape for playback and transcription at the requester's convenience. Pat translates from Russian and German into English and vice versa (which is much harder). She can thus convert abstracts from English into Russian or German. Following a French brush-up, Pat will add that language to her repertoire.

Formal translations of complete articles are provided by outside translation agencies. Hazel Edmonds (ext. 7746) is the contact for arranging for this type of translation work. "I thoroughly enjoy languages," Pat says, "and I especially like discussions with the requester. I learn a tremendous amount and between us we can usually turn out an excellent translation."

Pat met her husband when she was a summer hire at Sandia and a junior UNM engineering student in 1958. They were married the following year. "I worked while Wally worked on his Master's degree," Pat said, "and then became a housewife and mother. One evening Wally brought home an ad from a technical journal. It told all about the advantages of the technical translation field. For inspiration I posted that ad in a prominent spot and enrolled in a French course during the summer session. That fall I enrolled in beginning German and Russian."

"That's the way I learned languages for a long time everything came out scrambled in four languages."

Before joining Sandia, Pat taught Russian and German courses at UNM and did translations for Consultants Bureaus, a firm that publishes cover-to-cover translations of Russian scientific and technical journals.

Pat's office is in room 5 of bldg. 804 and she can be reached on ext. 7746 if you need a quick translation.

Retarded Now Face Brighter Futures

When a normal young couple has a retarded child, what happens?

Jim Kennedy (5131) can answer that question because he and his wife Joan have a mongoloid son, age 9. And they also have a daughter who is quite normal — "getting straight A's in fact," says Jim.

"Facing up to the fact that your child is indeed retarded is perhaps the most soul shaking moment. Some parents never do, and this is bad for both the parents and the child. Because most retarded children can, with proper training, lead reasonably happy and productive lives," Jim adds.

The Kennedys faced that moment early and have since become deeply involved in the cause for retarded children — and a cause it is. They've had the satisfaction of seeing their own son as well as many other retarded children make nice progress in this world.

Some perspective is useful. The number of retarded is larger than most would expect — about three percent of the population. "Retarded" by one definition means having less than a 75 IQ. Within the retardation category are the "educable," with IQ's from 55 to 75, and the "trainable," with IQ's from 35 to 55. The educable can generally handle abstract concepts and thus can learn arithmetic, reading, and the like. The trainable are given more instruction in manual tasks such as dressing themselves and the use of implements such as dining silverware and simple hand tools.

The Albuquerque Association for Retarded Children (ARC) is the local focus of activities relating to the retarded. "Actually, 'children' is something of a misnomer," notes Jim in talking about ARC, "because the Association is concerned about retarded persons of all ages. In our sheltered workshop, for example, most of the retarded workers are in their late teens and twenties. The workshop is sheltered in the sense that the tasks performed are carefully devised to be fairly simple yet productive. One task that Jim describes involves the making of barbecue aprons. When we visited the workshop, the trainees were also making sewing boxes.

A current project of the Association's is to develop a system of foster homes in the community for retarded children. The homes would replace institutional care. "You know," Jim says, "it costs about $5000 a year to maintain a retarded child in a place like the institution at Los Lunas. If the same child lived in a foster home where he or she would have day to day contacts with normal kids, he'd develop at a much better rate. It'd be less expensive too. And a normal child gains a deeper insight into the nature of life through everyday contact with a retarded child."

One element of association with a retarded child is the child's greater emotional dependence. Parents of normal children accept the growing independence of their offspring, and overt displays of affection get to be pretty rare by the time adolescence is reached. Not so with the retarded, Jim observes. "Perhaps because of their diminished intellectual world, the retarded quickly respond to and desire affection. For a parent, having such a loving child is gratifying — though not without its problems."

March is membership month for the Association, and Jim urges people to join ARC even if they have no retarded children of their own. Although funded by UCF, the Association is always in need of members willing to contribute a little of their time and money. Other Sandians who work with ARC include: Art Brown (1341), President; Pat Liguori (7651), Barry Butler (5313), Nick Magnani (5531), Larry Bertholf (5162), Gordon Pike (5155), Mrs. Bob Stromberg (wife of Bob Stromberg in 1212), George Konniak (5332) and Larry Bilmur (9255).

Congratulations

Mr. and Mrs. Frank Thome (5221), a son, Vincent, on Feb. 17.

Sympathy

To Paula Schultz (7511) on the death of her mother-in-law in Miami, Fla.
To Gertrude Byrne (3232) on the death of her brother in Albuquerque. Feb. 19.
To R.S. Cox (4152) for the death of his mother-in-law Feb. 16 in Albuquerque.
Recreation Notes

FUN & GAMES

Of all the activities associated with the Coronado Club, surely one of the most popular has to be the Ski Club. According to Club President Walt Westman (7133), some 220 families, 700 skiers belong. Couple of weekends ago several hundred of this crew took over the Purgatory Ski Area near Durango, Colo. This has become an annual trip for the club. "It was spectacally successful," says Walt. "Good snow, total sunshine, no wind."

So what do these dudes do—besides ski?

"Well, there were races and we had 51 entrants—from snowplowers to hot shots. Jim Wurzt (1413), Jerry Barr (9114), and Ken Flynn (1513) were winners. Then we had a dinner party Saturday night and after dinner we had a limbo contest and Mike Michnovicz (7632) spurred the contestants on with his accordion. Then there was a polka contest and this was won by a couple in their 70's."

You can ask Walt what a limbo contest is. Lots of people caravanned up to Purgatory in their motor homes and set up a small Suzuk Village. And Paul Montoya (1517) served up Secret-Recipe Polole and Chili to passing Sandians all weekend. Then there was that wine party after skiing Sunday. Fun? Sure and it sure beats yard work.

The Sandia Labs Bowling Association announces the results of its recent singles and three-man team tournaments at Fiesta Lanes. Julie Calderon (9310) was the handicap winner with a 713, and Frank Chavez (7133) won the scratch trophy with 608.

Scratch winners in the three-man team event were Joe Browning (1611), Ruth Brooks (3132) and Gary Miller (5322) with a total of 1740. Handicap winners—Dora Montoya (1542), Harvey Brewster (3231) and Diana Perry (3232)— won their trophies with a combined score of 1870.

Manuel Cordova (9343), finishing in the third place team, bowled 30 closed frames during the tournament.

Winners of the Coronado Bowling Club's Doubles Tournament were Pauline and Gabby Gabaldon (1517). Placing second and third were Olu Meadows and Cliff Fawver (7616), and Kay and Ed Ashland (1514).

The following singles winners qualified for the Women's and Men's State Tourney Team: Edgar Williams (AEC), Neita Frich (4514), Ginger Williams (1513), Pauline Gabaldon, and Rita Sanchez (Field Command); Gabby Gabaldon, John Nakayama (1514), Bob Moore (retired military), Ed Ashland and Archie Sanchez (Field Command). The Women's State Tourney will be held in Clovis, March 24-25 and the Men's in Alamogordo, April 29-30.

Variable Annuity Unit Value

<table>
<thead>
<tr>
<th>Month</th>
<th>Value</th>
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<tr>
<td>March 1972</td>
<td>1.699</td>
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<tr>
<td>February 1972</td>
<td>1.688</td>
</tr>
<tr>
<td>Average 1971</td>
<td>1.628</td>
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</table>

Authors


W.A. Von Riesemann (5151), "Self Correcting Integral Value Formulations in Non-linear Structural Formulations," Vol. 9, No. 10 (1971), AIAA JOURNAL.

R.A. Gerber and M.A. Gensinow (both 5242), "Helium Ions at 76k: Their Transport and Formation Properties," Vol. 4, 2027 (1971), PHYSICAL REVIEW.


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N.S. Gilfo (5551), "Self-Consistent Treatment of the Frequency Spectrum of a Model Paraelectric," Vol. 84, 3971 (1971), PHYSICAL REVIEW.


F.K. Bedich (1442), W.R. Gavin (5432) and G.R. Buchand (1815), "Geometric Interpretation of Admissible Linear Decision Boundaries for Two Multivariate Normal Distributions," Nov. 1971 issue of IEEE Transactions on INFORMATION THEORY.
Jim Walston
Draws Indians

A search for some Indian corn for a Thanksgiving centerpiece led Jim Walston (3155) to Cochiti Pueblo and a life-long friendship with its inhabitants. This was in 1957, shortly after Jim and his family moved to Albuquerque. The corn was given to Jim by the Governor of the Pueblo (recently deceased) and Jim and his wife La Verne returned many times to visit with the governor and his family. Jim enrolled in a drawing class at UNM in 1968, and then it occurred to him that the best subjects for his drawings were his Indian friends. "The first drawing I did was of Joe (the governor) and I still have it. My first sale was to Gordon Snidow (former Sandian and western artist)."

The first public showing of his work was during the 1969 Arts and Crafts Fair and again in 1970. His first entry in the State Fair won first place. Again in the 1971 State Fair Art Show he won first place, plus a Special Award for his "Little Jemez Girl." He has had several one-man shows Brandwine Gallery, Albuquerque; Troy's Art Gallery, Scottsdale, Ariz.; Saddleback Inn Gallery in Santa Ana, Calif.; and G. Harvey Gallery, Austin, Texas, also show his work.

"I work from photographs," Jim says, "because my subjects don't have time to sit for me. Although I like to direct, I'm really not a photographer. I've never developed a picture in my life. La Verne found she was interested in this end of the work, so she enrolled in photography and dark room courses at UNM and now has her own dark room. We spend vacations and weekends visiting the pueblos and ceremonials and Indian rodeos."

Jim and La Verne have two daughters – Patricia, a student at UNM, and Bonnie, who is married, has two boys, and lives in California.

The March issue of ARIZONA HIGHWAYS uses one of Jim's charcoal drawings in a special issue featuring "The Big Boom in Western Art." The magazine caption for the picture sums up most people's feelings about his work. "Indian Pony ... Drawing by Jim Walston. Possessing a finely developed sense of design, keen vision and a technique communicating a warm personal feeling for his subjects."
Take Note

Help! The Base Thrift Shop, now in its new and larger facility just south of the Bank of New Mexico, needs more stuff to sell. Labs employees are eligible to buy and sell merchandise at the Thrift Shop, which operates M, W & F from 10:30 to 2. Volunteers run the Shop and a small commission is charged on items sold. So go through all that junk in the garage and bring it over to the Thrift Shop and make a bundle.

Enchilada lovers, unite, there's an Enchilada Supper manana, Rio Grande High School, from 5 to 8 p.m. buck a head. Baron Brumley (1935) says the diner (that means money) Myron) will help send the school band to festival of course.


Appaloosa MARE, Marques, 242-2332.
ARIZONA, 30". 106,480, 80,460, 80,480.
APALOOSA MARQUE, Marques, 242-2332.


Camper shells, from $5 to 8 p.m., buck a head. Baron Brumley (1935) says the diner (that means money) Myron) will help send the school band to festival of course.

BY ORDER OF COURT

...*

CARS & TRUCKS

FIELD TRAFFIC Crane, 6 cyl. AC, rebuilt tranny. $675. Peetson, 444-4099.

AMERICAN AUTO. MARCH, 242-2332.

Take Note

...*

CARS & TRUCKS

FIELD TRAFFIC Crane, 6 cyl. AC, rebuilt tranny. $675. Peetson, 444-4099.

AMERICAN AUTO. MARCH, 242-2332.

 appreciated.

1. Let’s think about why this might be the case.
2. Try to understand the logic behind the acquisition.
3. Consider how similar this property might be to others in the area.
4. Discuss any potential challenges or risks associated with this investment.

MISCELLANEOUS

Refrigerator, 171.5 cu. ft. Wash ington, 50, 4 ET magnets. 14" x 3 and Goodyear tires, $125 or trade for a roll of fiberglass. Hangman, 297-6705.

Camope Shell, cab high, fits 4x4, interior light, side & back windows, 5000, Kickeisen, 344-5783 after 4.

Two DTI-MX 230cc. Yanceys, one 175cc Yamaha Enduro, one 125cc Motobecane; refrigerators; German Shepherd puppies. Causey. 296-0246.

Jeep 401x, top. 9,000 miles. 1971, $1500. Ferry, 299-9121.

No. 250, 2-bdr.; garage, 299-6045.

LEES 15' 6x10', incl. all utilities. Kaspar, 265-8228 after 2.

111 HAMMOCK LANE, 17 x 40', fully carpeted, AC, 480-9889.

FORD 1 1/2 Ton truck, fully equipped. Wixom fairing. wj zoom, auto. setting, etc.; yrs. 1969, $2553.

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Coronado
Club
Activities

HAPPY HOURS either end your week or start your weekend depending where you draw the line. And Happy Hours are longer and livelier these days — from 5 to 10 p.m. with special prices.

Tonight the Country Express will make sagebrush shuffle music while club manager Smiling Jim Noonan wheels out an oriental buffet. This includes chicken chow mein, sweet and sour pork, egg foo yong, egg rolls, and so forth. At $1.75 for adults, $1.50 for kids, you can’t beat it anywhere. Denny Gallegos and guitar will entertain in the main lounge from 9 to midnight.

Next Friday, March 10, the Club’s famous chuckwagon roast beef will be spread for the buffet while Sol Chavez and the mighty Duke City Brass play the samba sound. Yolanda Adent will conduct a sing-along in the main lounge.

St. Patrick’s Day will be celebrated at Happy Hour March 17 with a corned-beef and cabbage-Irish-stew-type buffet, and the ol’ original Irishman himself - Tommy Kelly will join Bob Banks and the trio on the bandstand. This one may be something to write home about. Denny Gallegos will wear a green tie and Smiling Jim Noonan will become the world’s largest leprechaun. There will be leaping and cavorting about until 1 a.m.

* * *

TOMORROW NIGHT teenagers will gather for early rites of spring from 7:30 to 10:30 with something called “Backseat Bogie” plugged into the bandstand. Chuck Logan of KQEO will emcee the bash and give away a few record albums. Member parents should pick up tickets (25 cents for members, 50 cents for guests) at the Club office.

* * *

UNSAFE PRACTICES CAN BE A PAIN

Join Cyrano March 11

CYRANO DE BERGERAC was a long-nosed cat who was the fastest sword in Louie XIV’s France and also the fastest man with a rhyme — a sword fighting poet no less. If you missed the 50’s movie starring Jose Ferrer you shouldn’t miss it this time. It will be featured at the Club’s Family Vaudeville Night Saturday, March 11. The stage show, starting about 7 p.m., will spotlight the Potts Puppets followed by the movie. Admission is free to members and families. Super sandwiches will be available and Happy Hour prices will prevail.

* * *

A LOBSTER is a dear delicacy growing more expensive each year. And once upon a time William Bradford, one of the Pilgrim fathers and governor of Plymouth Colony, wrote back to England that things were so bad that there was nothing to eat but lobsters, but fortunately the beaches abounded with them. There will be no puritans at the Club’s New England Seafood Dinner March 18. Call the office (265-6791) right now for reservations and pick up your tickets on the way home. The deadline is tomorrow. Dinner will be preceded by a wine taste and followed by dancing to Bud Fischer’s orchestra.

* * *

SANADO WOMEN will view spring fashions during a dessert tea Tuesday, March 14, starting at 1:15 p.m. Betty Reuscher will be commentator. All models will be Sanado members. Reservations should be made with Mrs. D.S. Tarbox, 1305 Florida NE, by March 10.

* * *

TRAVEL DIRECTOR Bud Wheeler (3251) reports that there is a possibility of 40 open seats on a flight from Albuquerque to London and return via Brussels. Price is $275 for transportation only and the date is in June. Call the Club office if you are interested.

CORONADO CLUB MEMBERS board chartered jet for eight-day package tour of Hawaii. Bud Wheeler (3251), tour director, and wife Barbara report that the group “had a ball.” It’s not too late to sign up for the 16-day tour of Spain and Portugal in October. Deposit $100 at the Club office now.