Newsletter for the Employees of the Ames Laboratory • Volume 1 Number 6 • June 1990

AMES LAB INSIDER

OSHA EXAMINATION - See Page 8.

A Thing Of Beauty Or One Man's Hobby

From night 19?? - probably the last time you seriously considered buying an orchid, debating over its expense yet marveling at its beauty. However, there is among us Ames Labites, someone who enjoys their beauty daily. Lewis Oswood, more affectionately known to all of us as Oz, cares for some 200 orchid plants growing under lights in his basement. Oz spends 20 to 25 hours per week watering, feeding, debugging and repotting his orchid plants, but his involvement does not stop there. He belongs to both the Central Iowa Orchid Society and the American Orchid Society. Oz recently participated in an A.O.S. sanctioned show held March 31 and April 1 at Merle Hay Mall, a long way down the yellow brick road from where it all began.

In 1958, when Oz was still in the Navy and living in San Diego, a friend gave him an orchid plant for Christmas. His interest was sparked; he started doing some research on different species and attending orchid society meetings. Before long, Oz had two greenhouses and a lathhouse, homes for 400 to 500 plants in different stages of growth.

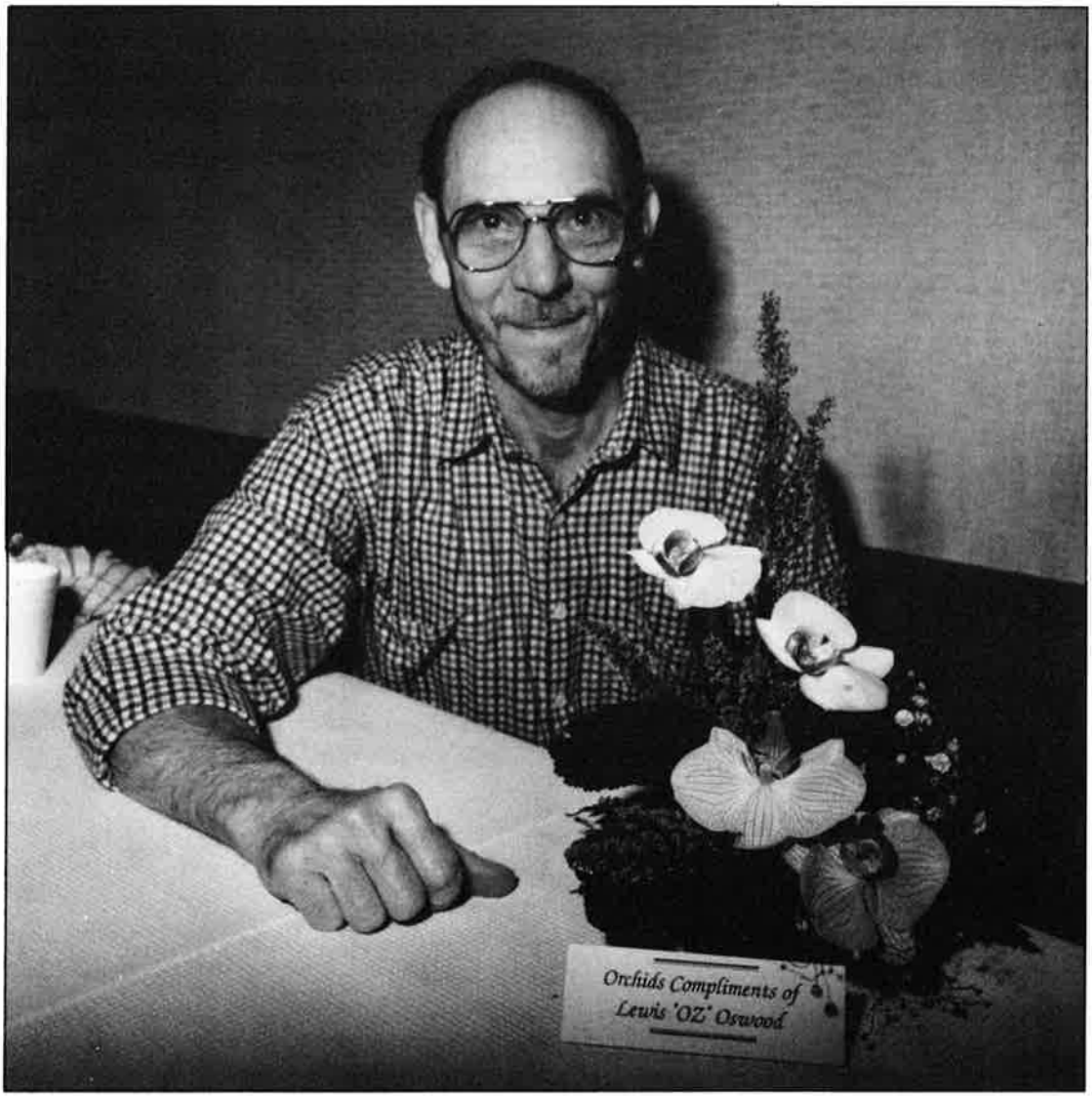
In 1967, Oz sold all of his orchids and moved to Iowa. It was a long time before he got back to the plants that had so fascinated him in California. He grew African violets for a while but, in 1984, as Oz puts it, he got tired of that and of watching T.V. and decided to try orchids again. Oz specializes in the cooler growing species, the Miltonia and the Paphiopedilum, because his basement stays cool. Oz explained that there are over 30,000 different species of orchids. Some plants are so small that you need a microscope to see them and others grow to be up to 18 feet tall.

Oz has done a lot of research on his favorite plant, noting that although orchids come primarily from the tropics, they have been found throughout the world. They were so plentiful in South America and the Philippines that they were used as packing material. This is how the flower originally reached England.

According to Oz, his hobby probably cost him around $300 to get started. This covers the cost of plants, lights, a timer and fertilizer. After that, there is little cost involved. As the plants grow, they can be split and the divisions can be sold or traded to other orchid growers.

Asked about his future plans, Oz said when he retires he wants to travel to different orchid shows all over the United States. He may enter his own plants or he may just enjoy the pleasure he finds in seeing so many beautiful orchids on display in one place. Oz has found himself quite a unique hobby, and why not? He's quite a unique person, that wonderful wizard, "our" Oz! ❑

Saren Johnston



Lewis "Oz" Oswood seated next to orchids that he donated for a recent retirement reception.

Outstanding Achievement Award Given

The Ames Laboratory recently received an Outstanding Achievement Award for our participation in project Galileo. Bernard Beaudry presented the award to Thomas Barton, director of Ames Laboratory, on behalf of James Turi, director of the Office of Special Applications of the Department of Energy. Ames Laboratory received the award for our participation on a national team that designed, developed, tested and produced the general purpose heat source radioisotope thermoelectric generators and the radioisotope heater units aboard the Galileo spacecraft mission that will explore Jupiter and its moons.

The spacecraft Galileo began its seven year mission in October, 1989. The Galileo cannot use solar power because Jupiter is five times further from the sun than is the Earth and too far for effective use of solar energy. Galileo must be able to generate its own electricity and heat.

Two radioisotope thermoelectric generators (RTGs) will power Galileo's instruments and systems. These generators convert heat from the natural radioactive decay of plutonium directly into electrical energy.

The cold vacuum of outer space requires that the sensitive instruments aboard Galileo must be protected against damage from temperatures that can reach 400 degrees below zero (Fahrenheit). Light weight Radioisotope Heater Units (RHUs), about the size and shape of a pencil eraser, provide the local heating necessary for the instruments on board. Each of the 120 units produces one watt of heat which is about as much as a miniature Christmas tree bulb, and enough to protect the instrument from the cold of outer space.

Ames Laboratory is continuing to work with several other Department of Energy laboratories and industrial companies to develop improved thermoelectric devices for future space flights. ❑

Bernard Beaudry presents the Outstanding Achievement Award to Ames Laboratory Director Thomas Barton.

Origin Information

Scientists are particularly interested in studying Jupiter because unlike the Earth and other planets, it still contains much of its original chemical composition. It is believed that Jupiter and its moons have undergone fewer modifications than Earth since the solar system came into being. They could give us important information about the origin of our solar system and the Earth's place in it. Studies such as these may give us a better understanding of what influences our environment.

I.S.U. Honors Fritz

James S. Fritz, a senior chemist with the Ames Laboratory and a professor of chemistry, has been conferred the title of Distinguished Professor of Sciences and Humanities by ISU.

He was honored with this award at the Spring Convocation and Awards Ceremony of the University on May 9. Fritz was recognized for being a very effective researcher and teacher at ISU both at the undergraduate and graduate levels. A prolific writer, his textbooks are considered as authoritative resources on quantitative analytical chemistry and ion chromatography and have been translated into several foreign languages. Fritz has to his credit 200 research manuscripts in journals and over 100 lectures at various world forums.

James Fritz

The latest among the awards he has won was the First International Chromatography Forum Award in 1988. Fritz joined the Ames Laboratory in 1951. ❑

Schrader Recognized

Glenn L. Schrader, a senior chemical engineer with the Ames Laboratory and a professor of chemical engineering, has been conferred the Iowa State University Foundation Award for outstanding performance in research.

Schrader was honored with this award at the Spring Convocation and Awards Ceremony of ISU on May 9. Schrader was recognized not only for his outstanding contribution to research, but for using his expertise in developing several courses in catalysis and related areas.

Internationally known for his work in characterization of catalyst activity using Raman spectroscopy, Schrader has authored over 60 publications and is a widely sought consultant and lecturer in the United States, Europe and Australia. He received the College of Engineering's Professional Progress Award in 1989. Schrader joined the Ames Laboratory in 1980. ❑

Glenn Schrader

Disabled In Body, Not In Spirit

A crippling disease has confined him to a wheelchair. But the artist in him carries him to soaring heights.

The artist, Edward Gurganus worked 300 hours to paint the 7 by 12 feet mural which now decorates the wall outside the renovated Spedding Hall conference room on the third floor. The mural was originally located at the entrance to the nuclear reactor facility of the Ames Laboratory before the reactor's decomissioning in 1978.

The work of art vividly portrays the reactor core in a ten-sided prism, fuel elements, control room, personnel working in different departments and labs, and other aspects of the research reactor. It also shows the overhead water tank, utility and safety system, and practical aspects of nuclear research in the form of irradiated seeds for farming. The mural was completed in 1967.

"In the beginning, during the erection, the site was just concrete, nuts, bolts and pipes. However, as the work progressed, more and more people became involved and the reactor became a supersystem throbbing with life and identity. What is true for a ship (the crew determines the value of a ship), is also true for an integrated system like a research reactor," says Gurganus who has a knack of giving an artistic turn to science.

"Being involved in training personnel for the reactor erection, I had glimpses of how people interacted with the system. I tried to integrate the human element with the hardware without sacrificing scientific details," recalls Gurganus, musing over the past with nostalgia.

"I set out in a systematic way. To begin with I made a cartoon (line drawing) depicting the rough idea of the mural. Then I prepared separate pictures depicting the scenes in and outside the reactor."

Edward Gurganus

Undeterred by multiple sclerosis, which restricts him to the wheelchair, the 59-year-old artist continues to help his blind son in higher study. "I

Vary Honored

James P. Vary, associate scientist, Ames Laboratory and professor of physics at Iowa State University, has been honored by the American Physical Society for his contributions to the advancement of physics by independent, original research. He has been elected a Fellow of the Society.

The citation on Vary's certificate reads: "For outstanding contributions to the microscopic theory of nuclear structure and nuclear reactions, especially the development of the Quark Cluster Model of high energy lepton and hardon induced nuclear reactions".

Vary's research is a study of the make up of matter at the microscopic level. It falls into two branches: nuclear physics and high energy physics. The research in this area has accelerated during the last three years, and there have been very exciting developments in the last six months, according to Vary. The fundamental research aimed at studying the basic principles of nature may open new avenues in generation, storage and use of nuclear energy through fusion, and harnessing non-traditional sources of energy.

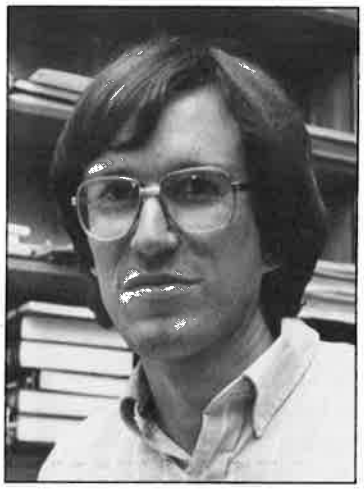
Vary has 110 publications to his credit. ❑

James Vary

Whisnant Gets SSC Fellowship

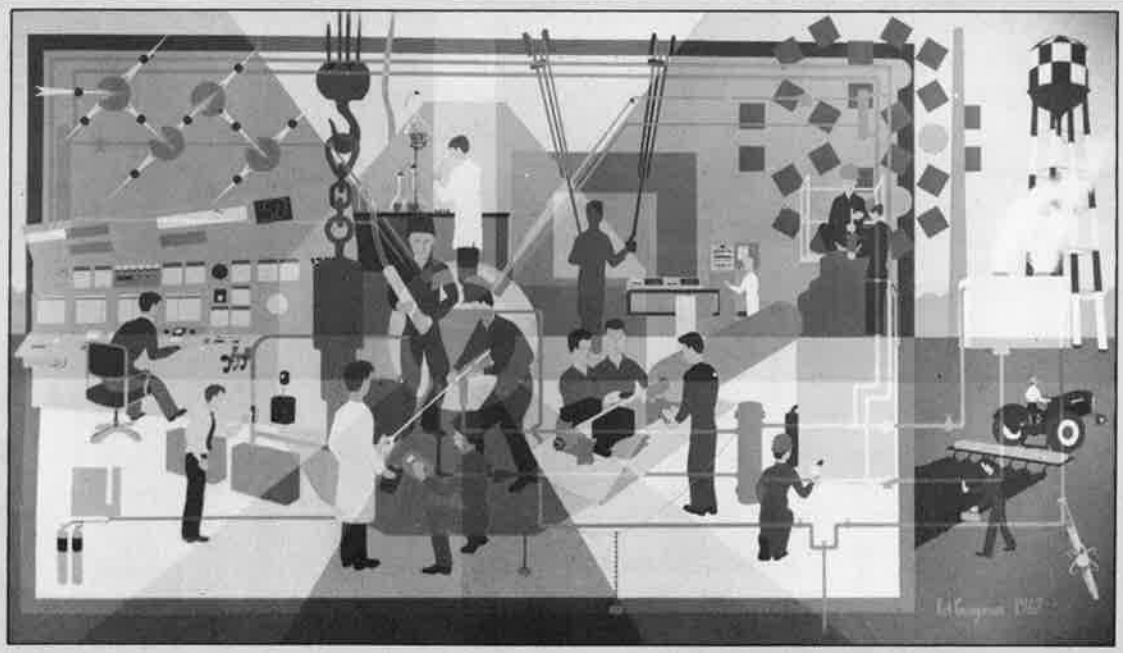
Kerry Whisnant, associate scientist, High Energy Theory Group, has been selected for a Superconducting Super Collider (SSC) National Fellowship. Whisnant is among the 10 junior faculty selected from all over the United States for the first fellowships sponsored by the SSC Laboratory, Dallas, Texas.

Funds for the fellowship program are provided by the Texas National Research



Kerry Whisnant

AWARD/ *Continued on Page 7* ⇨



The reactor and facilities within the building are on the left. The right side shows the scene outside the building, overhead water tank, cooling tower and the use of nuclear research in agriculture.

go over his scripts. Having graduated recently in business, he is studying speech communication now."

Explaining the beginning of his own afflictions, Gurganus says, "The disease started sometime in 1965. I had a little problem with my hands and could not stand on my legs for long periods to work on the mural. Hence, I took more time to complete it then originally planned. I retired in 1974, and since 1977 I have been confined to this chair. Many friends from the Lab drop out to my house for coffee periodicadly to share new and interesting developments." ❑

Avinash Pancholi

BULLETIN BOARD

Pesticides will be sprayed in Ames Laboratory buildings on Friday, July 20 from 5:30 to 9:30 PM. Please vacate the premises during this time. Contact your project leaders if this interferes with any experiments in progress.

INSIDER editors are considering a story on . . . "How I spent my summer vacation". Please submit pictures or just tell us about your unusual or typical vacation.

On June 21, 1990 Phase I and II of the Wilhelm Window Renovation Project (North side of building) was completed. Phase III which will be the renovation of windows on the south side of Wilhelm Hall is scheduled to begin during the last weeks of September, 1990 and be completed by November 16, 1990. Please call Mark Nelson at 4-7889 if you have any questions regarding this project.

T-shirt reminder: This is to remind you that the deadline for ordering T-shirts, sweatshirts and caps is Friday, July 6. Prices are:

T-shirts	$6.00
Sweatshirts	$10.50
Caps	$4.50

Several colors and all sizes are available. Order forms are available from Cheryl Jacobson, Office of Information, 201 Spedding.

Ames Lab jackets can be ordered also. They are $19.60 and are available in many colors and sizes. Please call Cheryl at 4-9557 if interested; they are not listed on the order form.

The university has changed its mail schedule. Effective immediately, each department's morning mail will be picked up and delivered 10 minutes earlier than before. A new mail schedule is being prepared and will be posted by each mail box.

Ames Laboratory group photos (8"x10" glossy print) may be ordered for $1.50 each from Donna Millang, Office of Information, 4-1856. Please specify whether you want the scientific or administrative photo.

COMPUTER SECURITY

Last month we discussed the importance of making backups as a protection against various threats. A common excuse is that it takes too much time to do a backup. Think of how much time it would take to recreate the data, even if you are able to. Some users feel that because they are very careful about what they run on their PC they should not get a virus. The DOE Computer Incident Advisory Capability (CIAC) has estimated that even very careful PC users have a 4% probability of acquiring a virus or other harmful intrusion.

Regular backup of data is the single most important element in recovering lost information. Many of today's backup methods use floppy disks for data storage. Realistically, this is only practical for smaller amounts of data. Backing up a 40 megabyte hard drive would require 112 low density 5-1/4" floppies. Even if you use 1.44 megabyte floppies, you would still need 28 disks.

Other backup systems make use of removable hard disks, tape cartridges, even videotape as storage media. An area with several PCs may wish to purchase a device that could be shared by all the users in that area. This makes the cost per user low and still permits the necessary backups.

Another strategy is to make a complete backup initially, then only backup the changed or new files. This is called an incremental backup. You will use less floppies, however if you ever have to restore the entire hard disk you have to restore from more floppies.

Your backup should be stored in a safe place. A desk drawer under your PC is not a safe place. If there is a fire in your office you will lose both the original and backup data. A better method for non-sensitive data is to make an arrangement with another PC user, in a different building, where they store your backup and you store their backup.

You should also keep several generations of backup data. In the case of a virus, it may have been doing its malicious work dong before it is discovered. If you only have a backup from last week and the virus or other intrusive code erased a file a month ago the backup does little good.

Do not take the attitude that since you are zealous about doing backups you can forget about practicing SAFE COMPUTING. Even with adequate backups, recovering from an attack is not a simple matter. Also you may spread the attacking mechanism to co-workers who are not as diligent as you. CIAC estimates that high risk users have a 40% chance of being infected.

Next month we will start a discussion about the proper care and handling of disks. ❑

➪ **AWARD**/*Continued from Page 5*

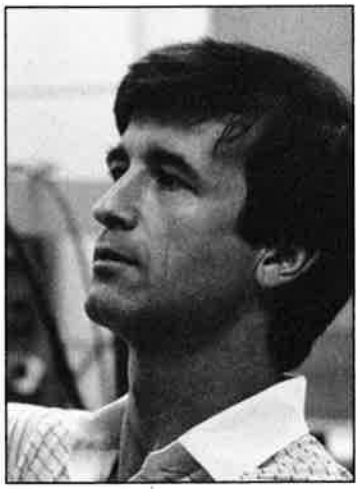
Laboratory Commission for supporting young scientists in areas related to the SSC. Ten postdoctoral research associates were also selected.

Whisnant, who is also an assistant professor of physics at ISU, is working on a project to analyze the processes that might be used to discover particles called Higgs bosons. These were hypothesized two decades ago, but have yet to be discovered. Whisnant's elementary particle research on the SSC is aimed at casting more light on the Higgs particle. His previous work in this area has been on Higgs boson production at the Fermilab TEVATRON. ❑

Shelton Named To Top Research Post

Robert N. Shelton, a former Ames Laboratory scientist, has been named vice chancellor for research at the University of California, Davis. A senior physicist at the Lab from 1978 to 1987, he was also a professor of physics at Iowa State University.

An internationally renowned scientist, Shelton has a number of research publications to his credit in leading science journals. Interdisciplinary in nature, his research is coupled strongly to applied science. His research has focused on understanding the fundamental properties of superconductors, heavy fermion compounds and permanent magnets under extreme conditions such as low temperature, high pressure and high magnetic fields.



Robert Shelton

Shelton joined the University of California in 1987 as the Chair of the Department of Physics. ❑

➪ **NEW**/*Continued from Page 8*

Jason Safly,
Maintenance Helper
(Ralph Appelgate)
Carl Schumann,
Research Helper
(Eli Rosenberg)
Janett Tillotson,
Programmer
(Bill Haas)
Pattye Volz,
Communications Specialist II (Burt Gleason)
Jianren Zhou,
Associate
(John Verhoeven)

Barton, "OSHA Inspection Really Puts The Pressure On Ames Lab"

The week of June 4-6 was filled with some apprehension as the Ames Laboratory underwent its first comprehensive investigation of safety and health conditions by an OSHA review team. At the end of the week the OSHA team reviewed their findings with the Ames Lab administration and concluded with an overall rating of EXCELLENT!

Secretary of Energy Admiral James Watkins has enlisted the aid of OSHA (Office of Safety and Health Administration) in efforts to improve and ensure safety and health conditions in DOE's national laboratories. The review team consisted of three OSHA investigators and a DOE Safety and Health investigator from the Chicago Operations Office. However the process started well before this team arrived in Ames. The Lab was notified of the impending inspection which triggered an increased awareness of safety conditions and rather heroic cleaning efforts throughout produced a seemingly endless train of stuffed Dempster Dumpsters. Then over a period of three days virtually every office, lab and shop was inspected by an internal inspection team composed of Lowell Mathison, Rollie Struss and Tom Barton.

After the inspection week had passed, Mr. Mathison received a call from the leader of the OSHA team to inform him that, after more carefully reviewing their data from Ames, they wished to change the rating from EXCELLENT to OUTSTANDING!!! "Outstanding" is the highest rating possible.

Laboratory Director Barton stated, "**I am indeed grateful to and proud of everyone in the Lab who gave of their time and energy to bring about this result.** I think we all learned a lot, I know I certainly did since my own research group sent over 600 bottles of chemicals for waste disposal! However this OSHA inspection really puts the pressure on Ames Lab since our goal must be to keep that 'outstanding' rating. Our position is akin to a team that has won the world championship - next year its stay where you are or go down in the standings. We do not intend to go down and that is going to take hard work from everyone. Fortunately we have Lowell Mathison's excellent, excuse me, outstanding staff to help us." ❑

NEW EMPLOYEES

Phillip Bazan,
Research Helper
(Rick Schmidt)

Michael Carter,
Research Helper
(John Gustafson)

Marisa Ceppi,
Typist Clerk
(Del Bluhm)

Deanna Davidson,
Custodian Helper
(Lynn Runge)

Doug Fils,
Research Helper
(Ellen Feinberg)

Brian Foster,
Research Helper
(David Hsu)

John George,
Research Helper
(Bernard Beaudry)

David Glick,
Summer Student Trainee
(Joseph Shinar)

Michael Hobart,
Graduate Assistant
(James Corones)

James Janni,
Research Helper
(James Espenson)

Amy Jerdee,
Research Helper
(Lowell Mathison)

Vicki Johnson,
Clerk Typist III
(Ed Yeung)

Mohanrao Kollipara,
Postdoctoral Fellow
(Robert Angelici)

Jennifer Loveridge,
Clerk Typist II
(Libby Bilyeu)

Nathan Martin,
Maintenance Helper
(Ralph Appelgate)

John Morris,
Graduate Assistant
(James Fritz)

Pankaj Narayan,
Graduate Assistant
(James Corones)

John Prueitt,
Lab Attendant I
(Jack Cummings)

Yanwen Qian,
Graduate Assistant
(James Fritz)

Abul Kasem Rahman,
Postdoctoral Fellow
(John Verkade)

Jesse Reynolds,
Undergraduate Assistant
(Alan Goldman)

Steven Ritchey,
Research Helper
(Rick Schmidt)

NEW / *Continued on Page 7* ⇨

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Address correction requested
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