



Hunt Institute for Botanical Documentation
5th Floor, Hunt Library
Carnegie Mellon University
4909 Frew Street
Pittsburgh, PA 15213-3890
Telephone: 412-268-2434
Email: huntinst@andrew.cmu.edu
Web site: www.huntbotanical.org

The Hunt Institute is committed to making its collections accessible for research. We are pleased to offer this digitized item.

Usage guidelines

We have provided this low-resolution, digitized version for research purposes. To inquire about publishing any images from this item, please contact the Institute.

Statement on harmful and offensive content

The Hunt Institute Archives contains hundreds of thousands of pages of historical content, writing and images, created by thousands of individuals connected to the botanical sciences. Due to the wide range of time and social context in which these materials were created, some of the collections contain material that reflect outdated, biased, offensive and possibly violent views, opinions and actions. The Hunt Institute for Botanical Documentation does not endorse the views expressed in these materials, which are inconsistent with our dedication to creating an inclusive, accessible and anti-discriminatory research environment. Archival records are historical documents, and the Hunt Institute keeps such records unaltered to maintain their integrity and to foster accountability for the actions and views of the collections' creators.

Many of the historical collections in the Hunt Institute Archives contain personal correspondence, notes, recollections and opinions, which may contain language, ideas or stereotypes that are offensive or harmful to others. These collections are maintained as records of the individuals involved and do not reflect the views or values of the Hunt Institute for Botanical Documentation or those of Carnegie Mellon University.

About the Institute

The Hunt Institute for Botanical Documentation, a research division of Carnegie Mellon University, specializes in the history of botany and all aspects of plant science and serves the international scientific community through research and documentation. To this end, the Institute acquires and maintains authoritative collections of books, plant images, manuscripts, portraits and data files, and provides publications and other modes of information service. The Institute meets the reference needs of botanists, biologists, historians, conservationists, librarians, bibliographers and the public at large, especially those concerned with any aspect of the North American flora.

Hunt Institute was dedicated in 1961 as the Rachel McMasters Miller Hunt Botanical Library, an international center for bibliographical research and service in the interests of botany and horticulture, as well as a center for the study of all aspects of the history of the plant sciences. By 1971 the Library's activities had so diversified that the name was changed to Hunt Institute for Botanical Documentation. Growth in collections and research projects led to the establishment of four programmatic departments: Archives, Art, Bibliography and the Library.

MEXICO
MEXICO CITY

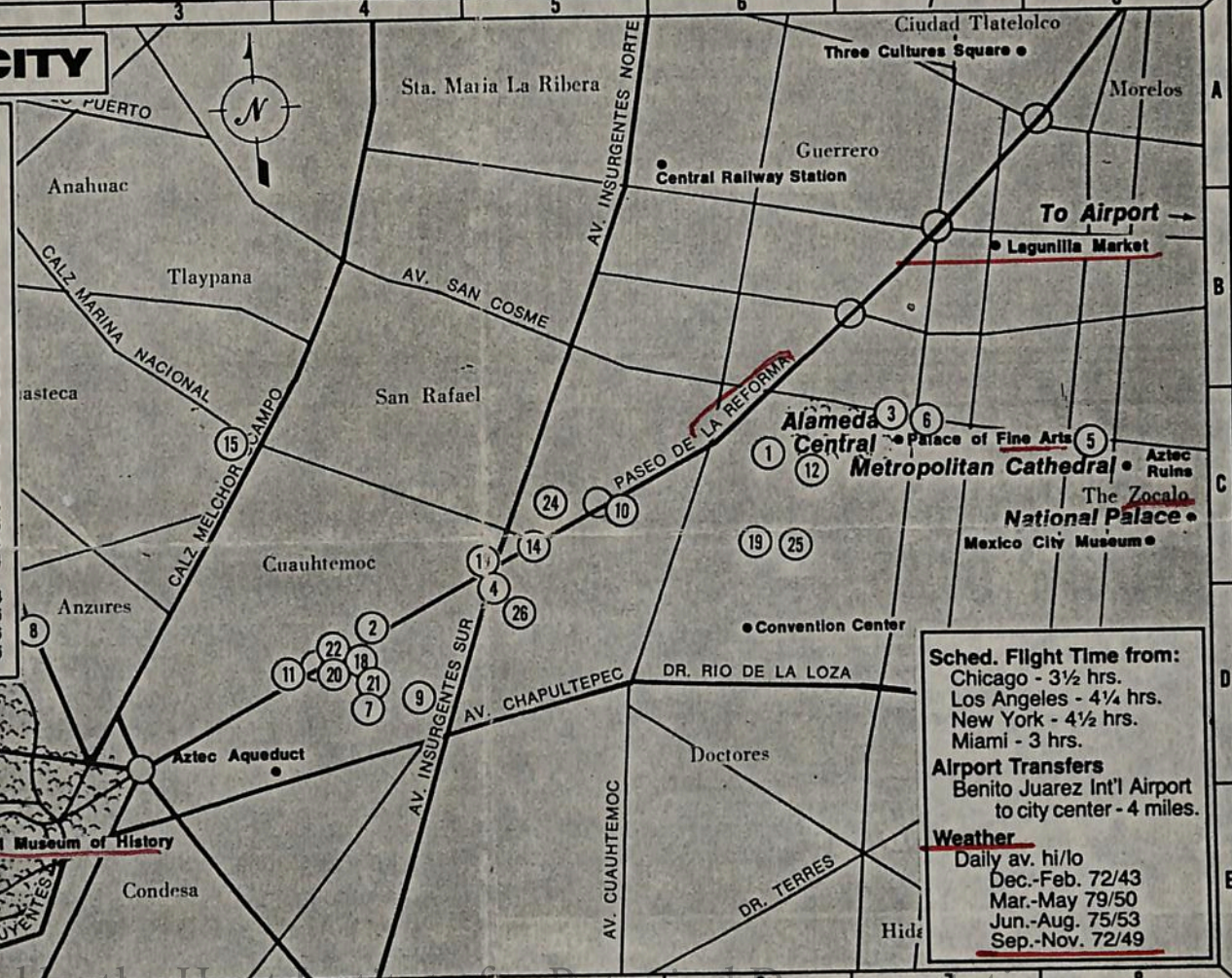
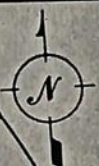
MEXICO CITY

Hotel Location Map Area

1 Alameda	C6
2 Aristos Hotel	D4
3 Best Western De Cortez	C7
4 Best Western Hotel Continental	C5
5 Best Western Majestic	C8
6 Best Western Hotel Ritz	C7
7 Calinda Quality Geneva	D4
8 Camino Real	D2
9 Hotel Century	D4
10 Crown Plaza Holiday Inn	C5
11 Hotel Del Angel	D4
12 Del Prado	C6
13 Hotel Doral	C5
14 Hotel El Ejecutivo	C5
15 El Presidente Internacional	C3
17 Hotel El Presidente Chapultepec	D1
18 El Presidente Zona Rosa	D4
19 Hotel Guadalupe	C6
20 Galeria Plaza	D4
21 Hoteles Krystal	D4
22 Maria Isabel Sberaton Hotel	D4
24 Hotel Reforma	C5
25 Hotel San Francisco	C6
26 Hotel Vasca De Quiroga	D5

Anthropology Museum

National Auditorium
Zoological Park
Chapultepec Park
National Museum of History
Condesa
Presidential Residence
AV. CONSTITUYENTES



Sched. Flight Time from:
Chicago - 3½ hrs.
Los Angeles - 4¼ hrs.
New York - 4½ hrs.
Miami - 3 hrs.

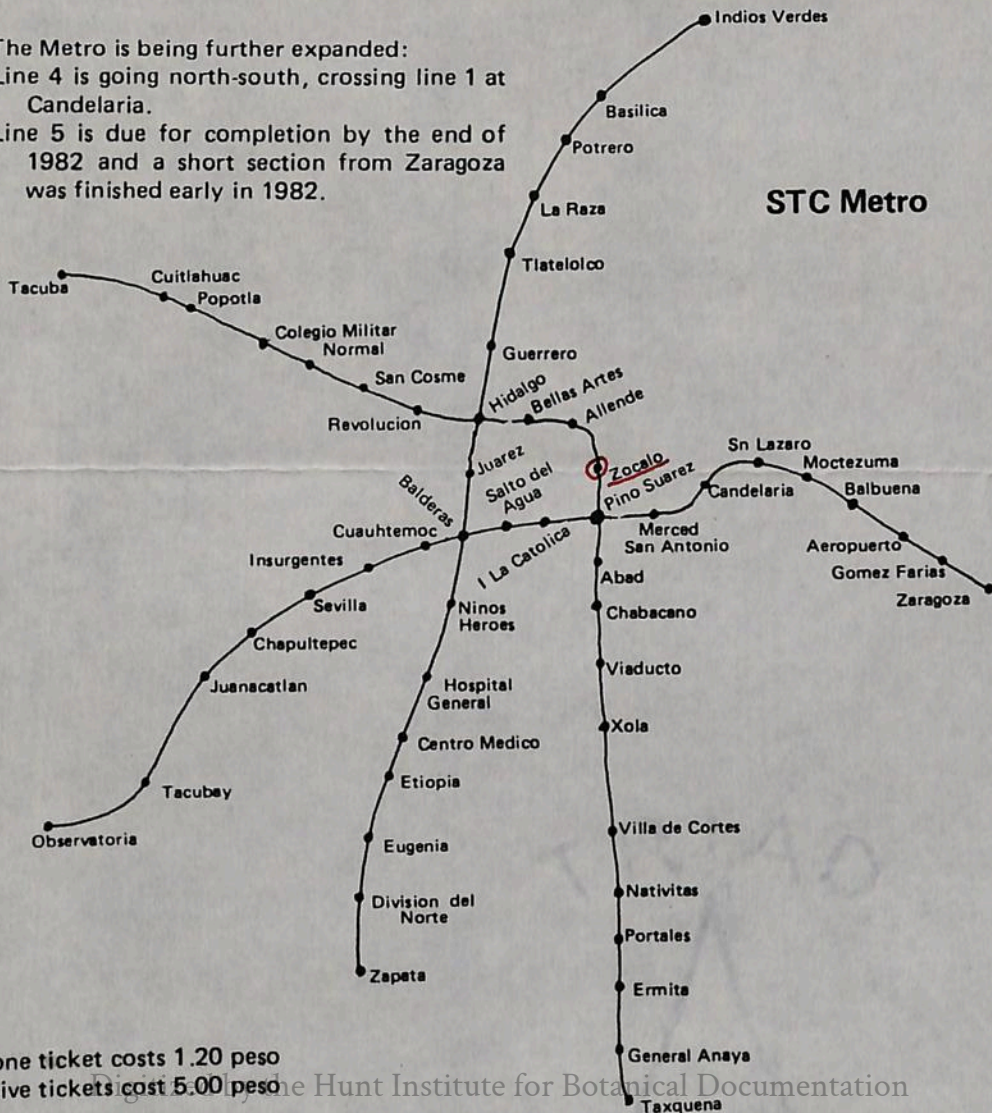
Airport Transfers
Benito Juarez Int'l Airport
to city center - 4 miles.

Weather
Daily av. hi/lo
Dec.-Feb. 72/43
Mar.-May 79/50
Jun.-Aug. 75/53
Sep.-Nov. 72/49

The Metro is being further expanded:

Line 4 is going north-south, crossing line 1 at Candelaria.

Line 5 is due for completion by the end of 1982 and a short section from Zaragoza was finished early in 1982.



inédito

CONSIDERACIONES ECOLOGICAS Y MICOLOGICAS EN AMAZONIA

Uno de los problemas graves de nuestro hemisferio de importancia mundial es el rápido destrozo de las selvas tropicales. Las zonas más vulnerables se extienden desde el sur de México hasta Brasil^e incluyen específicamente, las florestas de Chiapas con la selva Lacandona, las selvas de América Central - la parte que sobrevive todavía - y la región enorme de Amazonas.

En Chiapas, a pesar de que se han creado varias reservas para proteger la selva, la región, originalmente tan rica en su vegetación tropical, está transformándose con rapidez en un verdadero desierto. Las reservas de El Triunfo, el Parque Nacional de Montebello, El Ocote y Las Encrucijadas existen todavía, pero cada año ocurren múltiples incursiones ilegales, no solo en las reservas mismas, sino también en partes de la selva no protegidas, con el propósito de sacar maderas para el uso comercial. En 1985 había cerca de 5 millones cabezas de ganado en la región, y el número sigue creciendo. Otro factor importante en la transformación de estas tierras ha sido la llegada de miles de refugiados de varias partes de la América Central.

Creo que es nuestra responsabilidad no solo como biólogos y micólogos, sino como ciudadanos de nuestro fragil planeta, darnos cuenta de este problema grave mientras probamos de evaluar los daños ya infligidos a estos recursos únicos y no renovables, y considerar maneras de frenar, si fuera posible, su aceleración.

Si consideramos el asunto desde el punto de vista histórico, al comienzo de la era Cristana, hubiera habido aproximadamente 2.5 billioes hectareas de selvas tropicales por todo el mundo. Esta región impresionante ha desminuido hoy día a la mitad, así que del total que existe todavía, América Latina goza de 57%. Aunque se encuentran selvas lluviosas en 37 países del mundo, 50%

*Talk given at II Congreso Nacional de Micología in Oaxtepec, México, March.
Copy given to Dr. Teófilo Herrera for forwarding to Dra. Conchita Tronella
for publication. 27-XI-1986.*

del area total está distribuido entre 3 países, Brasil, Zaire e Indonesia, mientras que la selva Amazónica de Brasil solo, representa 35%.

Entre los ecosistemas naturales que conocemos, las selvas lluviosas están desminuyendo con más rapidez que los restantes. Según la Academia de Ciencias de los EEUU, más de 5 millones de hectareas se han perdido mundialmente cada año desde 1980. En 1981 la organización internacional de FAO llamó la atención al hecho de que 20% de todas las selvas tropicales desaparecerán o empeorarán al fines de este siglo. Durante el mismo período, Nigeria, y la Costa de Marfil perderán toda su selva, mientras que Madagascar sufrirá la pérdida de la tercera parte de su selva original, y Ghana, la cuarta parte de la suya. También concluyeron, después de su estudio, que en el caso de que la reducción de las selvas siga de esta manera, Costa Rica perderá hasta 80% de la selva lluviosa que tenía en 1980, Honduras, Nicaragua y Ecuador sufrirán la pérdida de 50%, y México, Guatemala y Colombia hasta 35% en quince años más.

Los países que ya han perdido prácticamente toda su selva primaria son Haití, Bangladesh, India y Sri Lanka, mientras en Tailandia, Malasia, la Filipinas, Panamá, y Sierra Leone, existe todavía solo una selva primaria minúscula. Concluye este estudio con el pronóstico que las selvas lluviosas más grandes que perdurarán hasta fines del siglo serán las de Brasil y Zaire, a condición de que estos países no sigan más con la construcción de nuevos caminos selváticos, y si impiden el ingreso de miles de colonos, mineros y especuladores. En cuanto a la selva Amazónica, si Brasil continúa no obstante, cortando su selva en la misma manera que en la actualidad, perderá cerca de 8% de su selva en 15 años más, un area que llega aproximadamente a 30

millioesⁿ de hectareas.

Es necesario, pues, preguntar cuales son los motivos para talar la selva. Aunque es un asunto bastante complejo, con muchos factores económicos y políticos, se puede notar que el motivo principalⁿ en Amazonia, por lo menos durante los últimos 20 años, ha sido el establecimiento de una superabundancia de fazendas con el propósito de criar ganado. Se calcula que entre los años 1966-75, en la formación de fazendas Amazónicas, se gastó 38% del total de la selva cortada, 31% se utilizó en establecer nuevas colonias (como están haciendo actualmente en Rondonia y Roraima), y 27% se perdió en la construcción de presas hidroeléctricas como las de Itaipu con la colaboración de Argentina y Paraguay, y de Tucurui en el río Tocantins. Al terminarlas, estas presas se contarán entre las más grandes del mundo.

Uno de los motivos fundamentales para toda esta actividad económica y social en la selva, según fuentes gobernantes de Brasil, es el gran incremento anual de población, notablemente en el nordeste del país. Entre paréntesis, hay que acordarse de que en muchos países de América Latina el nivel de la natalidad llega a 3% o más anualmente.

Otro asunto fundamental es la distribución nacional de las tierras cultivables. Según las estadísticas de 1985, llama la atención de que 4.5% de los propietarios sean dueños de 81% de todas las tierras cultivables. En otras partes de América Latina existe una situación similar. Por ejemplo, en El Salvador, con una población de aproximadamente 5 millioes de habitantes, solo 14 familias son dueñas de 60% de las tierras cultivables. En el Perú, 1% de la población cultiva 80% de las tierras que pertenecen a dueños por la mayor parte ausentes. Para citar otro ejemplo subrayando la importancia

del problema, sabemos que la familia Somoza de Nicaragua era dueña de 25% de todas las tierras cultivables de la nación, y los excesos de la familia Marcos en las Filipinas han sido recientemente documentados.

Pasamos, pues, a otros aspectos del problema. En América Central la destrucción de la selva sigue, debido por lo menos en parte, al apetito singular y prácticamente insaciable del consumidor norteamericano por su comida predilecta: el "hamburger." Citando otra vez las estadísticas, en 1979 EEUU importó 100,000 toneladas de carne de América Central. La razón obvia es que cuesta 50% menos importar la carne de Guatemala que comprar la misma cantidad en los EEUU. Porque la industria frigorífica en los EEUU es políticamente poderosa, en 1978-79 tuvo éxito en aumentar la cuota de importación de carne por un 13%. El efecto total de este plan de acción fué la reducción del precio de un "hamburger" en 5¢ norteamericanos. La famosa cadena McDonald alardea que vende cerca de 3 billiones de "hamburgers" anualmente. Se calcula que para proveer esta cantidad de carne, se necesita 300,000 cabezas de ganado. Y aquí se nota la conexión selvática. Por cada 70,000 kilos de carne exportado de América Central, se gasta 35,000 hectareas de selva! En consecuencia, se refiere a esta cadena de circunstancias con la expresión: la "hamburgerización" de la selva tropical Americana.

Con la quemadura de la selva se encuentran otras consecuencias más profundas. Cuando se quema la selva, miles de plantas, animales y hongos perecen, resultando finalmente en la destrucción total del ecosistema. A la vez, un número desconocido de especies desaparece aun antes que los taxónomos hayan tenido la oportunidad de estudiarlos o clasificarlos. Según

la opinion de Dr. Terry Erwin, entomólogo de la Institución Smithsonian de Washington, dentro de 25 años más el mundo podría perder hasta 20% de todas las especies de animales que existen hoy. Resulta que pierde para siempre la enorme potencial genética de los ecosistemas Amazónicos. Normalmente la selva tropical es una fuente dinámica de gran potencia genética y evolutiva. Para sobrevivir en los ecosistemas de estas selvas, gran número de plantas, animales y hongos viven simbióticamente. Cuando se cambia el balance delicado que existe entre ellos, se rompe también por ejemplo, la asociación íntima entre diversas especies. Se sabe que la mayoría de plantas con flores dependen para su polenización de varios insectos, pájaros, muciélagos u otros animales. Y como micólogos, sabemos también que el fuego destruye la asociación micorízica que sostiene un gran número de arboles y otras plantas de la selva bajo condiciones naturales.

Otro efecto más obvio de la destrucción de la selva es la pérdida de muchas plantas potencialmente importantes en la industria y la medicina. Quién podría pronosticar la cantidad de especies perdidas que posiblemente hubieran podido servir como maderas útiles, frutas, semillas, raíces comestibles, tinturas, o para la extracción de diversos productos farmacéuticos de beneficio para el hombre.

Consideremos brevemente el conocido "greenhouse effect." En 1985 la Academia de Ciencias de los EEUU publicó un estudio sobre el posible efecto mundial del aumento de la cantidad de CO_2 que se encuentra en la atmósfera, debido a la quemadura de combustibles fósiles. Se calcula que si la cantidad se sigue acumulando en la misma manera que ocurre hoy en día, dentro de 75 años más, podría resultar en un incremento en la temperatura de la superficie del planeta hasta 3 o 4 grados C° . La licuación de hielo en los Polos Norte y Sur podría resultar en la elevación de 5 metros o más del nivel del mar, inundando una multitud de ciudades litorales del mundo.

Otro peligro ecológico que debieramos mencionar, aunque no está asociado directamente con el consumo de combustibles fósiles, es el agotamiento de ozono en la alta atmósfera. Este fenómeno ocurre debido a la interacción de ozono con clorofluorocarbones, utilizados comúnmente como aerosoles. El agotamiento de ozono resulta en un incremento adicional de radiación ultravioleta, capaz de producir cambios genéticos dañosos en una gran variedad de seres vivos, incluso Homo sapiens.

Modificar estos procesos y actividades amenazadoras que he mencionado no será fácil. Se necesitaría la colaboración de muchas personas competentes en varias disciplinas científicas en un nivel nacional e internacional. No obstante se puede ofrecer las siguientes recomendaciones positivas que podrían aliviar hasta cierto punto la grave condición ecológica que urgentemente tenemos que resolver.

- 1 - La creación de amplias zonas protegidas, para la conservación de selvas tropicales nacionales.
- 2 - Regiones selváticas con una alta proporción de endemismo debieran tener prioridad en programas de conservación para impedir la pérdida de especies y, en consecuencia, la rica reserva genética que representa.
- 3 - Ampliar el inventario y el estudio de plantas, animales y hongos que existen actualmente en las zonas selváticas tropicales en peligro de desaparecer.
- 4 - Llamar a la atención de todos, la necesidad urgente para iniciar programas constructivas de conservación en todas las zonas amenazadas.

No quiero concluir estas breves observaciones sin mencionar la pérdida irreparable de enteras culturas indígenas en toda Amazonia. Durante estas últimas décadas, muchas sociedades indígenas han sufrido y siguen sufriendo en nombre de "desarrollo." La gran mayoría de gente autóctona que viven en las selvas tropicales, y quienes han vivido para siglos en estas zonas, ya están reducidas de manera alarmante en su número y fuerza originales. Los sacrificios en términos humanos que esa gente ha sufrido, siguen ^{siendo} enormes, mientras que las ganancias económicas o sociales que han resultado de programas nacionales ambiciosas, son todavía marginales y de valor bastante dudosos.

Scientists Say Ozone Loss Will Increase for Years

Continued From Page 1

stop rising until they reach 6 to 8 parts per billion, more than double their present levels. "What we do in the next few years is very important, but the effects won't be felt until down the line," said Richard Stolarski of the National Aeronautics and Space Administration.

The 31-nation treaty negotiated last year in Montreal would first stabilize the rate of emissions of chlorofluorocarbon gases and then gradually reduce them to half of their 1986 levels. Environmental experts argue, however, that the recent ozone findings make the assumptions underlying the Montreal protocol seem too optimistic, and they see a need for much tighter controls.

Government environmental officials, on the other hand, say they are unwilling to reopen the delicate treaty process and that the issue of further cuts in emissions can be taken up beginning in 1990 under a timetable in the current accord.

A new study by the Environmental Defense Fund, an advocacy group in New York, estimates that an 85 percent cut in emissions will be necessary to stabilize the levels of destructive chlorofluorocarbons and other gases. Other environmental groups are also using the 85 percent figure and asserting that, even with that sharp reduction, the levels in the atmosphere would not stabilize for years.

"Current ozone depletion is effectively irreversible," the fund's report states. "CFC's in the atmosphere will continue to grow throughout the 21st century even under the protocol's 50 percent emissions cut."

Flaws in the Models

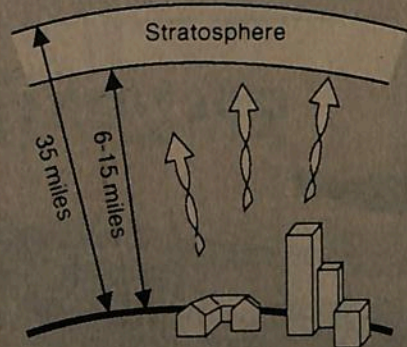
The head of NASA's official effort to predict future ozone depletion, Michael J. Prather, is preparing a report to Congress at the end of this month that will assemble calculations from an international assortment of computer models. Dr. Prather said the forecast of ozone loss over the next 30 years would range from 1 to 4 percent.

The same models, however, had previously predicted half or less of the depletion that has now been observed. They do not take into account the surprising seasonal "hole" in ozone over Antarctica, or the unusual polar processes that seem to be so powerful in breaking down ozone molecules.

"These are the best models we have, but we know they're missing things," Dr. Prather said. "We are missing the Antarctic phenomenon. We know we're not getting the right ozone depletion down there."

As a rough guideline, Dr. Prather

The Legacy of Today's Pollution



3. Once in the stratosphere, many of the chemicals persist for 75 to 130 years, destroying ozone all the while.

2. The harmful chemicals take 7 to 10 years to rise up to the stratosphere.

1. Chlorofluorocarbons used in refrigerants, foams and other products seep into the atmosphere over many years.

The New York Times/Steve Hart

Gases used today will take decades to reach the stratosphere.

and other model users believe that emissions of chlorine gases will stay more or less constant even under the terms of the treaty. The cutbacks in the United States and other industrial nations may be offset by exemptions for poor countries and increases by countries that will not join the accord.

Fifteen years have passed since scientists first predicted that chlorine gases, then used in spray cans and still used in refrigerators, insulating foams and industrial solvents, would act as powerful catalysts in the chemistry of the upper atmosphere, breaking down the trace amounts of ozone that absorb ultraviolet radiation.

Higher Rates of Ozone Loss

The forecasts that motivated the Montreal treaty assumed about a 1 percent loss of ozone, already enough to cause tens of thousands of extra skin cancers each year. The extra ultraviolet light, at the short wavelengths most damaging to the genetic material of cells, would mean a 3 to 6 percent increase in the rate of most skin cancers, according to estimates published by the Environmental Protection Agency.

The actual loss of ozone now seems much greater. The new Government panel, sponsored by NASA, reached a consensus estimate of a 1.7 percent loss in the latitudes from Florida to Pennsylvania and 3 percent from Pennsylvania north to mid-Canada.

Even without human intervention,

ozone waxes and wanes with a natural variability that is poorly understood. Ozone is the three-atom form of oxygen, which ordinarily forms molecules of two atoms. Near the ground, it is a noxious pollutant; in the stratosphere, its absorptive ability makes Earth's life possible.

Ozone molecules are continually broken down in reactions hastened by chlorofluorocarbons and re-formed by reactions spurred by sunlight. Scientists believe that the outcome of this interaction is closely tied to the 11-year cycle of solar radiation and that the next few years are likely to bring a short-term renewal of ozone, as solar activity reaches its maximum. Then as solar activity wanes again, the scientists expect ozone to resume its decline.

Data have been hard to come by. The report last week was the most authoritative attempt to reconcile incomplete, and sometimes inconsistent, readings from ground stations and satellites. The satellite data go back less than a decade, not enough to give a reliable sense of ozone's long-term behavior.

'Hole' Above Antarctica

Nothing in the direst predictions of environmentalists a decade ago prepared scientists for the discovery in 1985 of a "hole" in the ozone over the South Pole. Depletion over the entire Antarctic continent in springtime has been as high as 50 percent, and the hole has widened each year, now reaching populated areas of South America.

Urgent scientific expeditions have sought the cause, with some success. Though agreement is far from complete, atmospheric chemists believe they have worked out the complex chain of reactions that destroy ozone at such rapid rates. This chemistry, tied to extreme cold and the formation of cloud droplets, suggests that ozone can be unexpectedly sensitive to chlorine compounds.

Natural causes, at first considered to be possible explanations for the hole, now seem to have been ruled out. Some scientists pointed to the influence of

Most scientists are now also persuaded that the seasonal ozone hole, along with a less dramatic loss of ozone at the North Pole, must be connected to the less extreme worldwide depletion. But no one knows just how. Some scientists view the holes as chemical "factories," churning out ozone-depleted air that spreads through the hemispheres.

Every 1 percent loss of ozone allows roughly 2 percent more ultraviolet light to reach Earth's surface. Many scientists guess that a 1 percent depletion takes about a decade at the present rate, and the rate may accelerate.

"Under the treaty, we can expect depletion to grow by at least a factor of three by sometime in the middle of the next century," said Michael Oppenheimer, author of the Environmental Defense Fund report. "We're on an upward ramp that will level off at about 10 percent depletion. We're headed rapidly into the realm of dangerous ultraviolet radiation."

Among biologists specializing in the effects of light on organisms, concern is growing. The American Society of Photobiology, meeting last week in Colorado Springs, presented new research highlighting the urgency of the problem.

"On a global scale, the most significant thing is the destruction of plants," said Thomas Coohill, the group's president-elect. "If you start tampering with the layer of ozone that quickly, you don't have enough time to evolve protective mechanisms."

Sunlight with extra radiation at the short, ultraviolet wavelengths appears no brighter to people or most other creatures, including the tiny ocean organisms that will be among the most vulnerable. Neither sunbathers nor plankton will sense the extra danger.

Some biologists believe that damage to plankton, floating near the ocean surface, could have severe consequences.

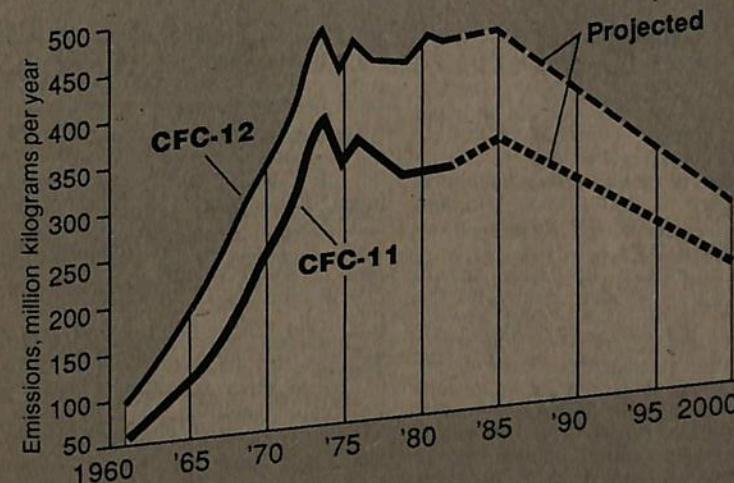
"Our data say that these organisms are already under very drastic ultraviolet stress right now," said Donat Haber of the University of Marburg, West Germany. "Most of them are incredibly sensitive. When you expose a population of these organisms, they will die within a few hours."

New research by Dr. Haber's group suggests that a 5 percent increase in ultraviolet light can cut the lifetime of some microorganisms in half. If this occurred on a large scale, the effects could reverberate upward through ecological systems and even influence Earth's climate.

Some sensitive bacteria create nitrogen, which is indispensable for such crops as rice. Phytoplankton, such as algae, play a central role in Earth's carbon dioxide cycle, taking in vast amounts. A significant destruction of phytoplankton could raise carbon dioxide levels, speeding the warming of the atmosphere.

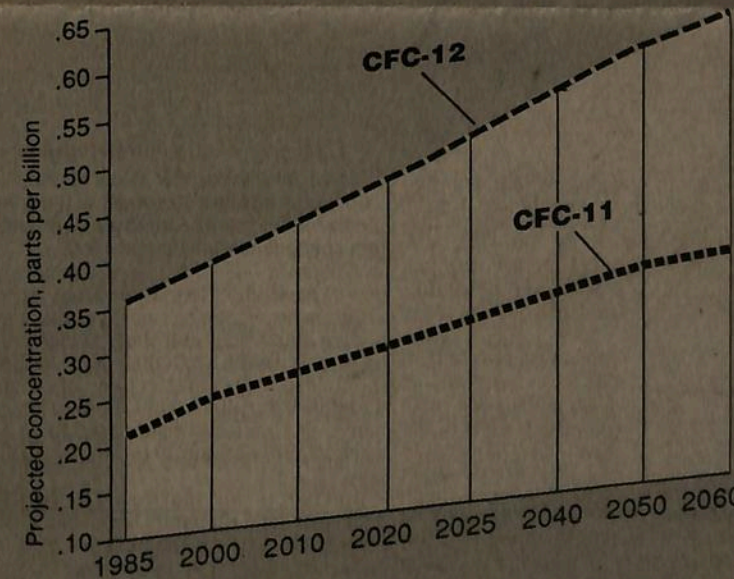
They also provide food for larger creatures. "When you go through the food chain, the effects multiply, and

The Release of Chemicals That Destroy Ozone Is Expected to Fall...



Emissions of the two major threats to ozone, chlorofluorocarbons known as CFC-11 and CFC-12, would level off and then decline, as projected above, under the new global treaty. Other harmful chemicals would also be controlled.

...But Their Levels in the Atmosphere Will Rise for Decades Anyway



Because the chemicals are long-lasting, experts predict that the amounts in the upper atmosphere of ozone-destroying compounds will keep climbing for decades even if the controls mandated by the global treaty are carried out.

Source: Compiled from various sources by Environmental Defense Fund

understood, though the connection between ultraviolet radiation and skin cancer has been established.

"What's not known — and I think it's really critical — is what are the effects for certain infectious diseases," said Margaret Krippe, a University of Texas immunologist who recently headed an E.P.A. panel on the consequences of ozone depletion.

Ultraviolet light appears to damage the immune system, making people

immune response to foreign substances.

Research into the biology and chemistry of the ozone problem is intensifying. For those concerned with public policy, however, the psychology of the issue — pervaded by scientific uncertainty — remains troublesome.

"It's not a Chicken Little problem — we don't all die at the end of the week," Dr. Mintzer said. "We're asking people to reduce the risk of an invisible, odorless, colorless gas because we perceive

Dowsers Lead Rural Quest for Water

By HAROLD FABER
Special to The New York Times

POUGHQUAG, N.Y. — The Y-shaped wire rod made out of an old clothes hanger quivered in Donald Spohr's outstretched hands as he walked across a hilltop hayfield here. It quickly rotated toward him and completed an 180-degree arc, pointing straight down.

"There you are, right here," he said as he put a wooden stake into the ground. Under him, he said, several veins of underground water crossed, providing a good source for a well.

Mr. Spohr is a dowser, a practitioner in the art of finding underground water for wells by the use of a divining rod. Scoffed at by scientists and government, dowsing is, nevertheless, widely practiced in rural areas where municipalities do not provide water.

Dowsers are especially busy these warm days as new home-building projects get under way here in southeastern Dutchess County and elsewhere.

In areas where every house depends on its own well for water, drilling is expensive — at a rate of about \$7 a foot running to a total of between \$2,000 and \$3,000 for the average well — with the results uncertain. Some new homeowners have been known to drill three wells before they hit water or a sufficient quantity for their needs.

As a result, dowsing, which usually costs a property owner between \$25 and \$50, is an accepted preliminary to building.

No one knows how many dowsers there are in the United States, but 3,500 of them are members of the American Society of Dowsers. "And there are a lot of others who don't belong to the society," according to James R. Perkins, its president, who dowses in and around Ashland, Ohio.

The dean of water dowsing is probably James R. Sevigny of Danville,

Vt. The 68-year-old Mr. Sevigny is a retired Air Force officer, a former judge, and a former member of the Vermont Legislature.

Mr. Sevigny, who was president of the Dowsing Society last year, has a list of 1,700 wells he has dowsed through the years. "A record," he said. Last year, he dowsed 270 new wells in Vermont, New Hampshire, New York and Canada.

"They hit water in 95 percent of them," he said.

That figure does not surprise Dr. Thomas Zimmie, associate professor of civil engineering at the Rensselaer Polytechnic Institute in Troy, N.Y., who is an expert on underground water.

The homeowners want to avoid digging dry wells.

"In the glaciated terrain of the Northeast, where there is a lot of underground water, almost anywhere you dig you have a 95 percent chance of finding water," he said.

"I have spotted hundreds of wells by just looking at the land. Dowsers can do the same. Most of them are experts on the land, as good an amateur hydrologist as they are dowser."

Sensitivity to Small Voltage

But Dr. Zimmie is not as skeptical as he used to be about the dowser's technique. "I have seen the sticks move, but I don't know what it means," he said.

As an expert on underground water, he offered one possible explanation.

"We do know that water moving underground creates a very small electrical potential," he said. "Maybe there are certain people who are extra sensitive to that very small voltage."

That explanation makes sense to Mr. Spohr. "I believe dowsing has to do with the electric charge I carry, either plus or minus, that somehow reacts to a minus or plus charge on the underground water," he said.

'I Have Never Hit a Dry Well'

Mr. Spohr, 55, is a most unlikely dowser, with a technical background rather than rural roots. He works as a senior laboratory technician for I.B.M., building physical structures for its latest computers.

But he spends his weekends dowsing, having learned the techniques from his next-door neighbor. There are no formal courses in dowsing and most dowsers learn from other dowsers.

He doesn't know why, but the ancient art of finding underground water by using a forked stick works, he said.

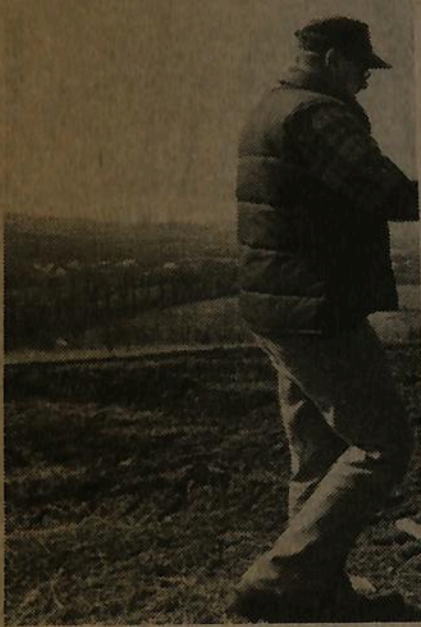
"Every time I dowse, I find water," he said. "I can honestly say that I have never hit a dry well. I can't say that we always get the volume of water that we want, though."

Mr. Spohr charges \$40 for each dowsing job, but the fee varies in other regions. Mr. Sevigny in Vermont, for example, asks land owners to make contributions to local organizations instead of paying him.

Cherry, Apple and Peach Wood

"I started dowsing for nothing, but people said I couldn't be any good if I didn't charge," Mr. Sevigny said. "So now I ask them to write out checks to local charities. They usually pay anywhere from \$10 to \$150."

Unlike traditional dowsers who use only particular species of wood as their divining rods, Mr. Spohr is



Donald Spohr dowsing for water near

eclectic in his tools. In addition to using a clothes hanger, he also uses cherry, apple and peach wood twigs and on one occasion even a wooden chair.

"It worked," he said.

His explanation is that some people have the touch and others do not. Two people with him tried to use both wire and wooden twigs, but neither was able to feel the downward pull that Mr. Spohr described as "so strong I couldn't hold it back."

Tom Andrews, the local well driller who hired Mr. Spohr, said, "Dowsing is my edge in finding water."

Almost as important to Mr. Andrews as the location of the water is

Questions Cloud the Future of Long Island Utility

By PHILIP S. GUTIS
Special to The New York Times

HICKSVILLE, N.Y., March 18 — The Long Island Lighting Company is under pressure to abandon its Shoreham nuclear power plant to avoid a takeover attempt by the Long Island Power Authority.

The power authority, established by state legislation and empowered to take over Lilco and operate it as a public utility, has not voted on a takeover, but officials have said it is

the directors say they believe that the board is ready to make a decision that has been delayed by negotiations between Lilco and the state.

Q. What are Lilco and the state negotiating?

A. Since December, the state and Lilco have been talking about a scenario in which Shoreham would be closed and Lilco allowed to remain an independent, investor-owned utility. Although no one will discuss the details of the negotiations, the directors

jected Lilco's evacuation plan for Shoreham and ruled that the plan was "fundamentally flawed."

Lilco has not stopped its efforts to license the plant, however, and plans a full-scale evacuation drill.

Q. How likely is a negotiated settlement?

A. Not very, according to state officials. Mr. Tese said today that the state and Lilco were in the "11th hour." "We haven't made a tremendous amount of progress," he added.

After receiving those letters, state officials said they were disappointed to collapse amid charges from both Lilco and state officials that neither side was negotiating in good faith. At that time, William J. Catacosinos, the chairman of Lilco, sent two seemingly contradictory letters to state officials. The first, addressed to William L. Mack, the power authority chairman, to come forward with its best offer for the utility. The second, sent to Mr. Tese, expressed Lilco's willingness to continue negotiations.

of an invisible shield, allowing the generation of invisible rays. Next: The response by industry.

ions and parasitic aiseases. It alters immune cells in the skin and causes other changes that scientists do not understand, turning off some of the im-

light on human health are also poorly understood. The effects of increased ultraviolet rays of fish protein," Dr. Haber said.

readings show no special effect from 1982, for example, but the satellite

By changing the contents of the earth's atmosphere, humans are delivering a sharp kick to a machine that scientists now believe capable of rapid and unstable responses. A central assumption of many scientists monitoring earth's climate has been that it would respond to human influence in a steady, gradual way. That assumption is now being undermined by the surprising ozone measurements and by a new understanding of the interaction of air and oceans. Changes in ozone are linked to climate processes as scientists discover that ozone chemistry can affect the circulation of the upper atmosphere. And the concern about ozone parallels another climatic issue, the warming of the atmosphere by carbon dioxide and other gases. Some experts go so far as to argue that the climate can suddenly — within a century or less — flip into an entirely different state. Indeed, they say that evidence recently drawn from cores of ancient polar ice and ocean sediments show that past climates have already done just that. "What these records indicate is that earth's climate does not respond to forcing in a smooth and gradual way," Wallace S. Broecker of Columbia University's Lamont-Doherty Geophysical Institute wrote last July in the journal Nature. "Rather it responds in sharp jumps which involve large-scale reorganization of Earth's system."

Dr. Broecker noted that some seemingly reliable weather patterns are quirks that could be unstable. For example, northern Europe is far warmer than it should be, because currents of the Atlantic Ocean circulate in just the right way. Those currents have sometimes reversed themselves, like a flywheel changing direction, rapidly chilling the continent. "We must consider the possibility that the main responses of the system to our provocation of the atmosphere will come in jumps whose timing and magnitude are unpredictable," Dr. Broecker wrote.

The recognition that the climate is a system of entangled and interlocking parts, scientists say, means it is capable of behavior that does not appear in simple computer models. By design, such models tend to change smoothly. The seasonal ozone hole that has appeared over Antarctica in terms may appear.

"The lesson is, don't fool around with Mother Nature at unpredictable rates, unexpected monsoon patterns, unexpected change at different temperatures and land as ocean temperatures and land temperatures change at different rates, unexpected monsoon patterns may appear. One possibility, he said, is that computer models, by design, such as ocean temperatures and land temperatures change at different rates, unexpected monsoon patterns may appear. One possibility, he said, is that computer models, by design, such as ocean temperatures and land temperatures change at different rates, unexpected monsoon patterns may appear.

Until they better understand the changeable arms and gears of the climate machine, scientists worry that they can barely guess the ultimate consequences of human influences. The emission of chlorine gases and carbon dioxide are the two most serious influences: chlorine breaking down the ozone layer and carbon dioxide warming the earth. "We have a system that's guaranteed to be out of equilibrium," said Stephen H. Schneider, a climate expert at the National Center for Atmospheric Research. "The physical system is going to be out of equilibrium, the biological system is going to be out of equilibrium, and so is the social system. Good luck, Charlie, trying to forecast that."

Out of Equilibrium
Rare Complexity
Change can be sudden and sharp, rather than gradual.

Consensus on the Threat to the Ozone

By PHILIP SHABECOFF

WASHINGTON

THE depletion of atmospheric ozone by man-made chemicals is what William D. Ruckelshaus, former head of the Environmental Protection Agency, once called a "megaproblem." As with acid rain, deforestation and climatic changes, confronting such a vast and complex phenomenon would require planetary cooperation, something that so far has proved elusive.

But today a breakthrough may be in sight, albeit dimly. In Geneva last week, representatives of industrial countries met to discuss ways to limit global emissions of chlorofluorocarbons and other gases that rise into the stratosphere and deplete the ozone layer, which protects the Earth from the sun's ultraviolet radiation. While the officials, gathered under the auspices of the United Nations Environmental Program, did not expect to reach an agreement, there was a consensus that the substances must be curbed, starting with a freeze on the production of common chlorofluorocarbons. The gases are used as propellants for aerosols, coolants for refrigerators and air conditioners and in the production of cleaning agents and plastic foam.

The nations are scheduled to meet again in February, and it is possible that an agreement could be drafted by the end of 1987. Until now, the European Community has rejected strong controls on chlorofluorocarbon production.

"We all agree there is a real problem," said Richard E. Benedick, the Deputy Assistant Secretary of State who is representing the United States. "The differences are over just how far and how fast we need to go."

A warning about the effects of chlorofluorocarbons was first issued more than a decade ago by Professor F. Sherwood Rowland and Dr. Mario J. Molina, scientists of the University of California at Irvine. In the late 1970's, the United States, Canada, Sweden and Norway banned some chlorofluorocarbon aerosols, such as those used for deodorants and hair sprays. But disputes over scientific data, industry's opposition and the absence of adequate substitutes hindered further action. And, despite the limits, the production of chlorofluorocarbons has continued to grow.

That rise, combined with several new studies and fears about the need for drastic regulation in the future, have led governments and industry to call for limits on chlorofluorocarbons, according to Irving M. Mintzer, director of the energy and climate program of the World Resources Institute, a Washington research group.

In a recent draft report, the Environmental Protection Agency concluded that the increased exposure to ultraviolet radiation because of ozone depletion could be responsible for 40 million cases of skin cancer and 800,000 cancer deaths in the United States in the next 88 years. The study said the radiation could also cause dysfunctions of the human immune system and cataracts, damage crops, deplete aquatic life and contribute to the "greenhouse effect," a warming of the Earth's atmosphere.

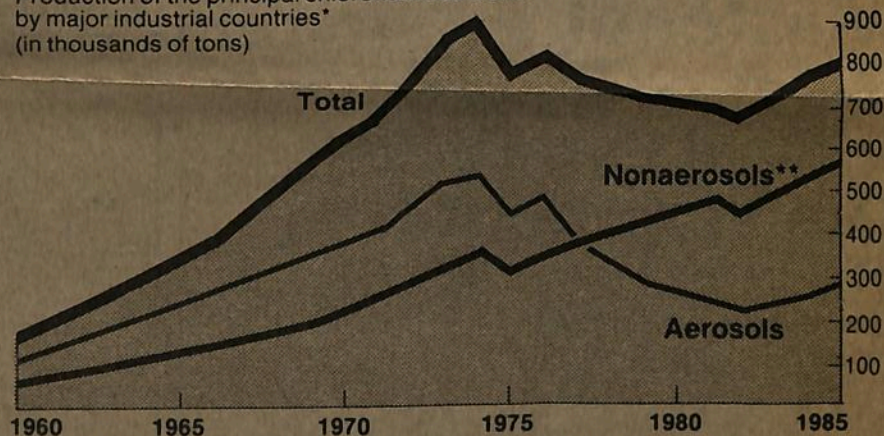
The report, E.P.A. officials say, supports the United States recommendation that production of chlorofluorocarbons be frozen at current levels and then phased out in the long run.

Professor Rowland said industry had finally



Destroying the ozone layer

Production of the principal chlorofluorocarbons by major industrial countries* (in thousands of tons)



*does not include the Soviet Union and East Europe

**includes refrigerants, solvents and foams

Source: Chemical Manufacturers Association

GOTTARD

David Gothard

come to support controls because of the growing evidence supporting the ozone depletion theory, in particular the finding that an "ozone hole" over the Antarctic was caused by man-made chemicals. "The big loss of ozone over Antarctica has changed this from being a computer hypothesis plausible for the future to a current reality and cause for concern," he said.

'A Turning Point'?

Dr. Rowland said a freeze on chlorofluorocarbons would be a small step that would not solve the problem.

But, he said, "It might be a turning point. If they agree on anything, that would be progress. Until now there was no willingness on the part of

the Europeans to agree even on a freeze."

Kevin Fay, director of the Alliance for Responsible CFC Policy, an industry group, agreed that an international consensus has emerged for putting a freeze on the use of the chemicals. His organization supports limits on their use and efforts to prevent their release into the atmosphere, but it is opposed to phasing them out altogether. "Our biggest fear was that the whole process would fall apart here, but that hasn't happened," Mr. Fay said from Geneva.

That it did not happen may mean that the industrialized nations are ready to enter a new era of cooperation — or so many hope — not only on the ozone problem, but also on other global environmental problems.

On a Clear Day in Mexico City, You Can Foresee the Pollution

By WILLIAM STOCKTON

Special to The New York Times

MEXICO CITY, Dec. 6 — Just after dawn most mornings now, Mexico City residents are treated to a rare sight. So clear is the fall air that the two volcanoes that tower over the city are clearly visible, starkly etched against the lightening sky.

Mexico City's air pollution is so bad that residents rarely catch more than fleeting glimpses of snow-capped Popocatepetl and Ixtaccihuatl rising 17,700 feet above sea level to the southeast of the city.

The crystalline visibility of the volcanoes at dawn is an ominous warning of the day to come.

The crisp air almost certainly means that an atmospheric inversion has formed during the night. A layer of cold air has settled over the Valley of Mexico, trapped by a layer of warm air a few hundred feet above.

Within a few hours the huge cloud of pollutants that rises up each day from the city of 18 million people will be trapped beneath the inversion, sending pollution readings climbing steadily toward the danger level.

By 9 A.M. visibility will drop to a quarter mile and the air will be so thick that eyes water, lungs burn and for some people outdoors each breath will be an effort.

In recent weeks, however, the inversions have lifted by 10 or 11 A.M., permitting the trapped pollutants to rise into the atmosphere, reducing their concentration at ground level.

They are expected to grow worse this month and in January and February.

The fear shared by Government officials, environmentalists and Mexico City residents in general is that one day, because of some atmospheric quirk, an inversion will persist, causing pollutants to rise to lethal levels.

Last January, during several days of intense cold, the inversions lasted unusually long and pollution levels reached all-time highs.

In retrospect, the January inversions were an air pollution watershed to a

city long accustomed to tolerating its pollution.

Alarmed Government officials pulled together a program of action, and President Miguel de la Madrid dismissed his Minister of Ecology and Urban Development and appointed a deputy minister in the Budget Ministry, Victor Manuel Camacho Solís, as the new minister.

Getting ready for the coming winter has been one of the new minister's priorities.

"We still have much to do," Mr. Camacho Solís said in a recent progress report to the President.

Nearly two dozen anti-pollution measures have been taken in recent months with varying degrees of success. They range from introducing gasoline with lower lead content to planting more trees to setting up stations where motorists can voluntarily have their car's emissions tested.

The center of the Government's plans is a valley-wide air pollution monitoring network operating 24 hours a day to watch for dangerous buildups of contaminants.

A list of 271 major industrial sources of pollutants has been compiled and a system adopted for ordering them to curtail activities should pollution levels reach a certain level.

"We won't wait for conditions to become so bad that they require reductions of activities throughout the Valley of Mexico," Mr. Camacho Solís said.

Instead, decisions will be made early on to order certain factories to shut down, depending on regional pollution levels and prevailing winds.

Environmental groups have questioned the Government's will to order factories to temporarily halt production, given Mexico's economic situation and the lost earnings such orders would entail.

They see the coming winter as a test of Government will in the cleanup effort.

As Mexico's Troubles Grow, the U.S. Shares the Consequences

Continued From Page 1

States and Mexico may be dramatically transformed by a landmark immigration bill that Congress approved on Friday. The bill, which prohibits employers from hiring illegal aliens, may put new strains on relations.

For the United States, the more immediate effects of upheaval in Mexico are likely to be economic. Mexico owes \$24 billion to commercial banks in this country. Nearly 400,000 Americans live in Mexico, and 2,900 American companies operate there. Mexico, the world's fourth-largest oil producer, was the biggest foreign supplier of crude oil to the United States last year and is now providing all the oil for America's Strategic Petroleum Reserve. Mexico is the United States' third biggest trade partner, after Canada and Japan. The declining value of the peso and Mexican curbs on imports have led directly to unemployment and business failures in the United States.

Mexico is also the largest foreign supplier of marijuana and heroin to the United States, accounting for about one-third of total American imports of each. American officials estimate that at least 30 percent of all cocaine entering the country passes through Mexico.

Ninety-four percent of the more than 1.2 million arrests of illegal aliens in the United States last year involved Mexicans, and Mexicans account for a similar proportion of the 1.8 million arrests expected this year. A sizable portion of the fruit and vegetables grown in the United States, especially the West, is harvested by Mexicans.

As its troubles have mounted in this decade, Mexico has lost its position as a model of stability and civilian rule for Latin America, said Susan Kaufman Purcell, director of the Latin American program at the Council on Foreign Relations. Now, she said, as other countries in the hemisphere have made the transition to democratic rule, "Mexico is stagnating politically, governed by a system that seems anachronistic and often irrelevant to Mexicans themselves."

C.I.A. Analyst Predicts 'Fundamental Change'

United States officials are normally cautious in their comments about Mexico. But earlier this year, at a hearing held by Senator Jesse Helms, Republican of North Carolina, they denounced the Mexican Government for its handling of drug trafficking, corruption and illegal immigration.

Among those pointing to corruption in the Mexican Government were Elliott Abrams, Assistant Secretary of State for Inter-American Affairs; William von Raab, head of the Customs Service, and David L. Westrate, head of the Drug Enforcement Administration's operations division. Mexico objected to the statements as "a clear

Mr. Latell said the collapse of oil prices in the last year, combined with "four years of grueling austerity" in Mexican economic policies, had generated "gloom and a deepening crisis of confidence" in Mexico. Although "a revolutionary upheaval is unlikely in the foreseeable future," he said, there is a growing likelihood that "the system will rupture violently" unless Mexico's leaders take steps to democratize its "rigid, authoritarian political structure."

The monograph, published in June by the Hoover Institution of Stanford University, where Mr. Latell was a visiting scholar, carries a disclaimer saying that his views "do not necessarily reflect" those of the C.I.A. or the United States Government. But officials at other Government agencies said that official assessments by the C.I.A. coincided with the views expressed publicly by Mr. Latell, who has returned to the C.I.A.

The State Department takes a less pessimistic view. John Gavin, who was the United States Ambassador to Mexico from June 1981 to May 1986, said: "I've been looking at these doomsday scenarios for years, but they miss one key element. That is the dislike of the Mexican people for the kind of bloodshed and confrontation they experienced during their revolution. Their threshold of difficulty is very high." Still, Mr. Gavin said, "the conditions are definitely there to one day create that doomsday" if Mexico does not take steps to solve its political and economic problems.

A majority of American academic experts on Mexico, although seeing no prospect of an immediate solution to its economic crisis, have concluded that the country is resilient enough to muddle through its difficulties without widespread civil strife or a default on its huge foreign debt, which has grown to about \$100 billion.

George W. Grayson, a specialist on Mexico at William & Mary College in Virginia, said President de la Madrid had been taking "courageous steps" to reduce domination of the economy by the Government, which generates or controls about 60 percent of Mexico's gross national product. The steps include the sale of some state-owned concerns and the elimination of some subsidies. "We will see more incremental change, not upheaval," he said.

But Dr. Purcell of the Council on Foreign Relations warned: "If Mexico's political leaders move too slowly, the economic situation can deteriorate even more, and with it, the chances for political stability in Mexico." And a report on Mexico by the United States Army says, "Given the country's growing economic problems, the potential for social unrest is increasing."

Pressure Is Seen From Population Boom

Some of the gravest expressions of concern come from the United States

A Portrait Of Mexico

Notable Dates

- 1821** Independence from Spain.
- 1824** Mexico becomes a republic.
- 1910** Revolution begins.
- 1917** Constitution is adopted.
- 1938** Oil industry is nationalized.

Recent Events

1982 After four years of unparalleled prosperity fed by an oil boom, Mexico is plunged into economic crisis as peso declines, inflation accelerates and foreign-exchange reserves dwindle.

Dec. 1, 1982 President Miguel de la Madrid starts his six-year term by imposing an economic austerity program to deal with the debt crisis and inflation, and he promises a "moral renovation" of society to deal with institutionalized corruption.

Jan. 8-9, 1983 At Mexico's suggestion, Foreign Ministers of Mexico, Panama, Venezuela and Colombia hold talks on Panamanian island of Contadora on a peace initiative for Central America.

Feb. 4, 1985 As part of economic recovery program, Mexico, a non-OPEC member, sets price of its Isthmus Light crude 25 cents below OPEC benchmark. Worldwide plunge in oil prices further impedes Mexico's recovery.

March 6, 1985 Bodies of United States drug agent, Enrique Camarena Salazar, and Mexican pilot are found near Guadalajara, a month after they were reported kidnapped. American officials later say Mexican policemen were involved in killings.

Sept. 19, 1985 Earthquake shatters Mexico City and five adjacent states, killing 10,000 and leaving 300,000 homeless; damage estimated at \$5 billion.

July 6, 1986 Institutional Revolutionary Party claims 98 percent of the posts in contention in election in Chihuahua State. The results are challenged by the conservative National Action Party, which responds with demonstrations and boycotts.

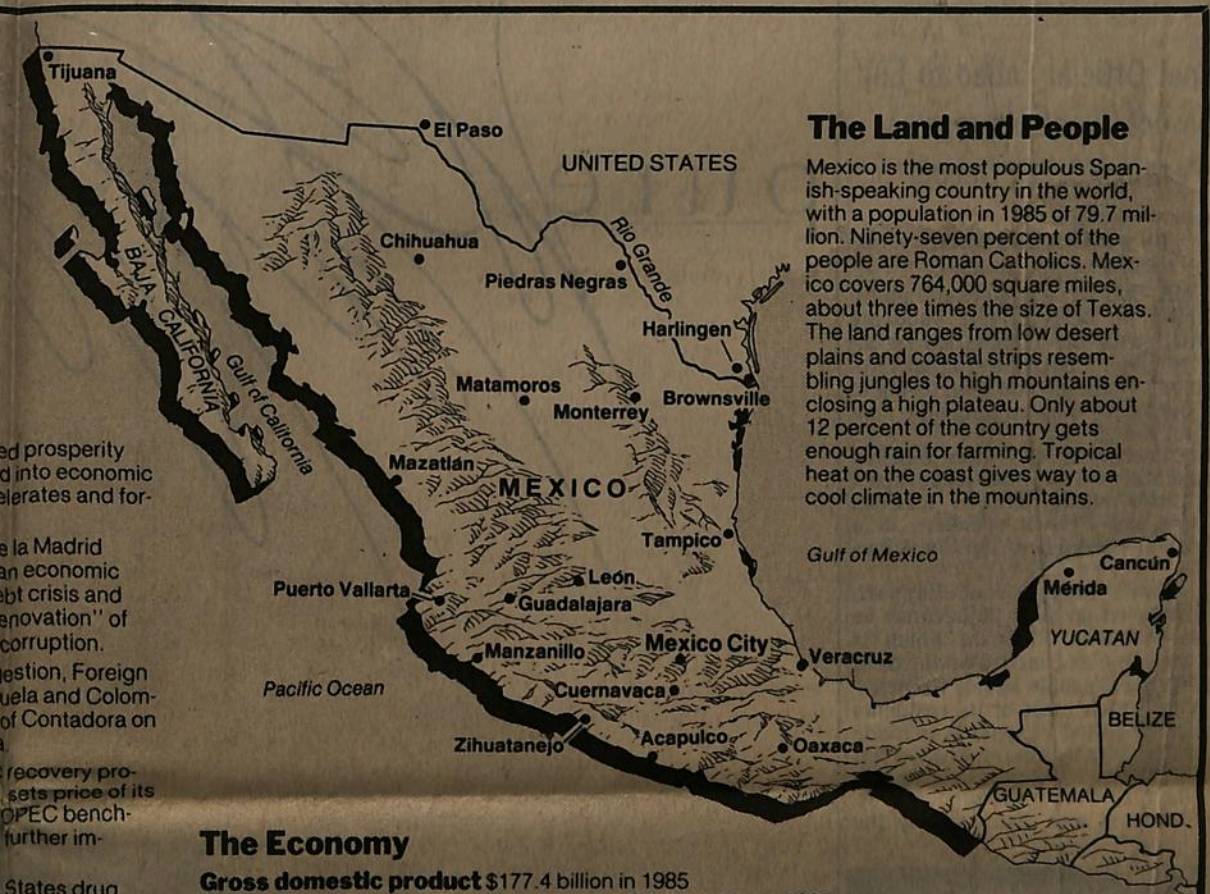
Sept. 30, 1986 Foreign commercial banks agree to give Mexico up to \$7.7 billion in new loans, clearing the way for another \$6 billion from governments and international lending agencies.

Politics and Government

The Institutional Revolutionary Party (PRI) has been the dominant political force in Mexico since it was founded in 1929, winning every election for president and for governor of each state. It won 64.8 percent of the vote in 1985 congressional elections, to 15.5 percent for the National Action Party, amid charges of vote fraud. Under the Constitution of 1917, Mexico is a federal republic with 31 states. The President is limited to one term; the Congress consists of a 64-member Senate and a 400-member Chamber of Deputies.



Miguel de la Madrid



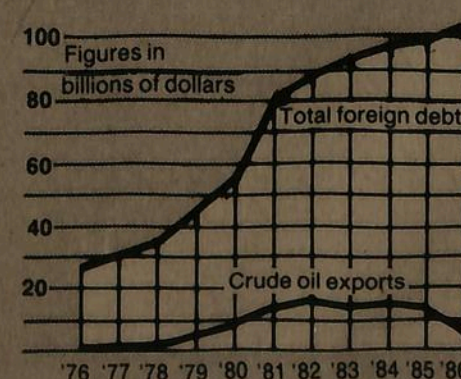
The Land and People

Mexico is the most populous Spanish-speaking country in the world, with a population in 1985 of 79.7 million. Ninety-seven percent of the people are Roman Catholics. Mexico covers 764,000 square miles, about three times the size of Texas. The land ranges from low desert plains and coastal strips resembling jungles to high mountains enclosing a high plateau. Only about 12 percent of the country gets enough rain for farming. Tropical heat on the coast gives way to a cool climate in the mountains.

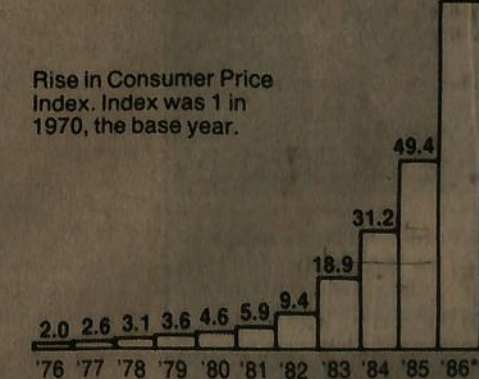
The Economy

- Gross domestic product** \$177.4 billion in 1985 (United States gross domestic product was \$4,077 billion in 1985).
- Disposable per capita income** \$1,769 in 1985 (United States disposable per capita income was \$11,819 in 1985).
- Exports** \$25.2 billion in 1984. Petroleum and derivatives: 69 percent (Mexico exported 701,000 barrels of oil a day to U.S. in 1984, up from 627,000 in 1982); manufactured products: 20 percent (includes chemicals, transportation equipment, shoes, iron, steel, electric appliances and electronic products); agriculture: coffee, cotton, fruits, vegetables; metals.
- Imports** \$11.3 billion in 1984. Grain, machinery, equipment, industrial vehicles and intermediate goods.
- Tourism** Mexico earned \$1.72 billion from tourism in 1985, or 5.7 percent of its foreign income; the projected figure for 1986 is \$1.96 billion.

Debt Soars as Oil Income Drops



Rising Inflation



*1986 figures are projected

Sources: State Department, Agency for International Development, U.S. Census Bureau, Europa Publications Ltd., The Conference Board, Wharton Econometric Forecasting Associates

sovereignty, and relations between the two countries have still not recovered.

Within the United States Government, the Central Intelligence Agency has offered the most alarming warnings about what it calls "destabilizing trends" in Mexico. In a recent monograph, Brian Latell, a career intelligence analyst at the agency, said he foresaw "new crises" bringing "fundamental change" in Mexico's "antiquated and debilitated political system" in the next 5 to 10 years, with "enormous and perhaps incalculable consequences for the United States."

the population of Mexico will grow from 81.7 million this year to 112.8 million in 2000. The bureau estimates that Mexico City, which has 18 million residents, will have 28 million at the end of the century, overtaking Tokyo to become the world's largest urban area by 2003.

Because Mexico's population is young, its labor force will grow at a phenomenal rate for the rest of this century, according to demographers at the bureau's Center for International Research. They say Mexico will have to create a million new jobs annually to

keep up with the growth in the labor force, from 27 million now to 43 million in 2000.

Eduardo E. Arriaga, a Census Bureau demographer, said that in the last five years of this century, the number of people seeking jobs in Mexico would increase by 5.3 million, which is almost as much as the increase in the same period for all of the United States (5.8 million). The estimates are conservative because they assume no increase in the proportion of Mexican women who are working or seeking work.

American experts see no way Mexico can meet the expected demand for jobs. To do so, they say, its economy would have to grow as fast as in the oil boom of 1978 to 1981, an average of about 8 percent a year.

So they foresee an increase in migration to the United States despite the provisions in the immigration bill that bar the hiring of illegal aliens. Wage disparities make such migration almost inevitable, they say. The minimum hourly wage here (\$3.35) is more than the minimum daily wage in Mexi-

co.

United States officials said they could not handle the mass migration that might result from population pressures, an abrupt political change or sustained economic hardship in Mexico, where real wages and the standard of living have declined in the last four years.

In that period, annual arrests of Mexicans as illegal aliens have roughly doubled, from 887,481 in 1982 to a projected total of 1.7 million this year, according to the Immigration and Natu-

ralization Service. The figures include multiple arrests of some individuals. John F. Shaw, Assistant Commissioner of the Immigration and Naturalization Service, said: "The Border Patrol cannot handle the current flow of illegal aliens. So it certainly could not handle a mass migration with its current resources and current laws."

Progress and Setbacks On the Economic Front

Without exception, American officials and economists said Mr. de la Madrid was taking some steps in the right direction: reducing Government domination of the economy, selling state-owned enterprises, encouraging exports, welcoming foreign investment and eliminating subsidies that have protected Mexican businesses from foreign and domestic competition.

Perhaps the most significant step, they said, came over the summer when Mexico joined the General Agreement on Tariffs and Trade, the 92-member body that seeks to expand world commerce by reducing trade barriers.

It is widely believed that these changes will make Mexico more productive and competitive, but it may be years before the "magic of the marketplace" starts to work.

Wayne A. Cornelius, director of the Center for U.S.-Mexican Studies at the University of California at San Diego, said, "Unless commercial banks reduce the interest rates on their outstanding loans to Mexico, economic stagnation and political drift seem likely to continue at least for the remainder of de la Madrid's term, which ends in December 1988."

Mexico's debt service on its foreign debt, \$9 billion to \$10 billion a year, is "far too high to be sustained economically, socially or politically," he said, and refinancing arrangements completed last week hold "no promise of a durable solution."

Those arrangements, which will provide \$6 billion to \$7.7 billion in new bank loans to supplement \$6 billion in loans from the International Monetary Fund and the World Bank, would permit Mexico to continue making interest payments to its creditors but would increase its foreign debt.

"Mexico's debt time bomb continues ticking louder than ever," said Bruce Michael Bagley, a specialist on Latin America at the Johns Hopkins University School of Advanced International Studies.

American observers see Mexico's economic and political problems as inextricably linked.

"The stability of the political system depends on Mexico's returning to a pattern of economic growth, and the benefits of that growth must be distributed more equitably than in the past," said Sidney Weintraub, an economist at the University of Texas. "A stable political system also requires greater freedom of choice for the electorate, particularly now as the economic system is becoming more open to competition."

NEXT: The issue of drug trafficking grows more divisive.

Mexicans Look Ahead: A New Order, but No Revolution

By WILLIAM STOCKTON

Special to The New York Times

MEXICO CITY, Oct. 18 — "When a spoon is dropped in the United States, the bang here is a bombshell," said Lorenzo Meyer, professor of history at the Colegio de México in Mexico City. "We must learn not to magnify what is happening in the United States."

Mr. Meyer is among a wide range of Mexican intellectuals, scholars, writers and Government officials who have concluded that their country is in serious trouble but that their problems may be overstated in the United States.

At the same time, many say that fundamental changes are already at work in Mexico. And they say that as the country confronts its economic problems and deals with demands for a more democratic political system, relations with the United States are likely to be increasingly affected.

A New Approach to Relations

Jorge Bustamante, head of the College of the Northern Border in Tijuana, said Mexico must learn to defend itself better against United States Government criticism, not merely wrap itself in the Mexican flag and decry Yankee interventionism.

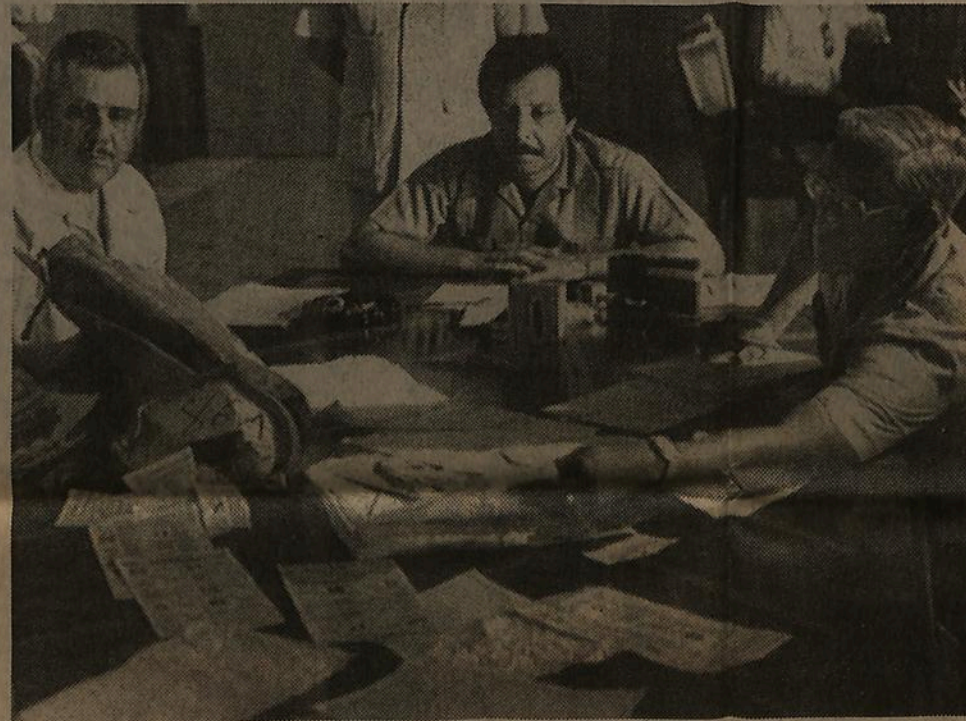
"As Mexico changes and grows, we will have increasing relations with the United States, and we will find more and more things that lead to conflict with the United States," he said. "Our rational response should be to learn the rules of playing the game with the United States and then get into the game and defend ourselves."

None of those interviewed said they foresaw an armed revolution like the one that convulsed the country from 1910 to 1917. But the experts say they do see increasing activism and turmoil as the country moves toward political pluralism and as pressure from the middle and lower classes increases for economic and political change.

"There is a growing consciousness that Mexico needs a radical change, that this change has to be along democratic lines," said Enrique Krauze, one of the country's leading intellectuals and the editor of the magazine *Vuelta*.

Guillermo Villalva, a professor at the College of the Northern Border in Ciudad Juárez, across the Rio Grande from El Paso, Tex., said a new political structure was vital.

"We cannot move toward a more open economic structure with less protectionism and more opportunity for lasting growth unless we also move toward a broader political



Associated Press

City officials in Ciudad Juárez, across the Rio Grande from El Paso, with ballots in June that they said were found in a garbage truck. In the state of Chihuahua, unusual coalitions of left- and right-wing political groups and civic organizations banded together to protest what they saw as fraud in elections that were won by wide margins by the ruling party.

base," she said. "The people will demand it. Mexico will be unable to get into the 21st century without a more pluralistic political system."

Mexico's worsening economic crisis is regarded as the engine driving these forces for change. Homero Aridjis, Mexican Ambassador to Switzerland and the Netherlands in the 1970's, said that "the crisis has made the people aware of the need for change."

"As it worsens, it will cause them to form new groups and new coalitions and demand new alternatives and new ways of dealing with national problems," he said. "Democracy seems the only answer."

Carlos Monsivais, a Mexican writer and intellectual, said he felt that changes in Mexican society would go beyond politics and economics and reflect an inevitable modernization of Mexican life, a turning away from isolationism and nationalism.

"Social roles are changing rapidly," he said. "Machismo is on its way out. The absolute authority of the father as the head of the family is being questioned. Women are a new economic force, a new social force and especially a new political force."

"People are beginning to believe in a civil society, in democracy," he added. "Ten years ago we used the term, but we didn't believe it was possible. Now in universities, labor unions, political parties and other social institutions people are not only talking about democracy, they are trying to employ it."

This activity has been most obvious in some of the northern states, where the strength of the conservative National Action Party has been growing.

The ruling Institutional Revolutionary Party won state elections by wide margins this summer, but there were widespread alle-

gations that it had rigged the voting. After the elections, unusual coalitions of left- and right-wing political groups and civic organizations banded together to protest what they saw as electoral fraud.

International highways were barricaded. The bridges linking Ciudad Juárez and El Paso were blocked several times.

"Twenty years ago, the Government would have sent in troops, and there would have been bloodshed," said a middle-ranking Government bureaucrat and member of the governing party. He was a university student in 1968 when troops opened fire on student protesters in Mexico City, killing as many as 400 people, by some estimates.

"To me, the fact that the Government just stood by this time shows how much things are changing," he said.

In his state of the nation address last month, President Miguel de la Madrid spoke at length about democracy in Mexico. "We do not want law without democracy, nor democracy that flouts the law," he said.

Mexico's electoral process must be improved so that "it will reflect, with increasing accuracy, the will of the people as expressed through the ballot box," the President said. Electoral results must "gain wide social credibility," he added, so that "order and tranquillity will be maintained."

Although some scholars and intellectuals said the President's remarks seemed pro forma, the amount of attention devoted to democratic change in the address was regarded by others as a message to the rank and file that the party must change.

'It Will Be Good for Mexico'

In the face of increasing calls for more democracy in Mexico, the most difficult question is how quickly the demand for political change will grow and whether the system will evolve rapidly enough to satisfy it.

"I foresee substantial political turmoil," Mrs. Villalva said. "The turmoil will be painful, but it will be good for Mexico in the end. There could be some repression, but I hope nothing worse than what the United States experienced in Chicago in 1968. There might be a few guerrilla outbursts, but nothing major. The trick will be to contain the turmoil."

Mr. Monsivais agreed that the upheaval would be limited. "Mexico will remain a stable people," he said. "A revolution is impossible. Those in the United States who say it is approaching don't understand Mexico."

New Rules Are Considered in the War Against Ozone Pollution

By MATTHEW L. WALD

Special to The New York Times

BOSTON, Aug. 9 — From Richmond, Va., to Portland, Me., the war against ozone is being lost across the broad arc of the Northeast megalopolis, and Federal officials are considering adding regulations on everything from the stripes that divide highway lanes to the smell of fresh-baked bread.

Ozone is most prevalent now, in the dog days of summer, because it is produced by the interaction of pollutants with sunlight. It causes shortness of breath and coughing even in healthy people, if they are exercising, and more serious effects in the young, old and infirm. Experiments on animals indicate it increases susceptibility to infection and causes premature aging of the lungs, although the long-term effects on humans are uncertain, according to health officials.

Ozone is a problem in various parts of the United States. Although it is most acute in the Los Angeles area, it per-

sists in a serious form in the Northeast corridor, where more than 31 million people live.

This summer's unusually cool, wet and cloudy weather has eased the problem somewhat in this region, and around the country, regulations have brought down ozone levels. But a stronger economy, with more use of chemicals from gasoline to house paint, has offset some gains, and scores of cities have ozone levels above the standard set in the Clean Air Act, leaving ozone and carbon monoxide as the two most stubborn enemies in the war against air pollution.

Paradoxically, ozone, an unstable form of oxygen, is being produced at ground level where it is harmful at the same time that other human activity is destroying ozone in the stratosphere, where it protects life on Earth from harmful rays from the Sun.

Lee M. Thomas, Administrator of the Environmental Protection Agency, said in a June speech that with existing regulations, about 25 cities, mostly in

the Northeast, "simply will not make it, no matter how hard they try." The most recent amendments to the Clean Air Act, in 1977, set the end of next year as the deadline for meeting standards on both ozone and carbon monoxide.

The agency is therefore scrambling to find new ways to cut emissions of the precursors of ozone. It plans to concentrate on the worst areas first, but officials say that ozone, because it is formed over several hours as the pollutants drift downwind, requires a broad attack.

The 'Easy' Part Is Over

"Washington puts out its organics, its nitrogen oxides, and by the time we get to Baltimore, it affects people there," said William S. Baker, chief of the Air Programs Branch of the environmental agency's regional office in New York. "Baltimore adds its own contribution, and it moves up to Wilmington, through New Jersey, Connecticut and Boston." The highest levels, he noted, are often recorded in

Connecticut.

The problem in trying to make additional progress, according to a variety of officials, is that many pollution sources have already been capped. "We've done what we thought was easy," said Bruce C. Jordan, chief of the Ambient Standards Branch of the agency. The next steps may be more bothersome or expensive, he said.

In New England, one of the hardest-hit areas, Michael Deland, the regional administrator, suggested that while the first round of efforts had focused on major industries, the next round of regulatory targets would be of importance to individuals and small businesses, like automobile tailpipes and chemicals bought by consumers for use around the home.

The idea that the pollution battle will have to move to smaller sources is not unique to the air problem. Margaret Randol, an E.P.A. spokesman, said: "As an agency, we started out in the early 70's addressing the most obvious and easy-to-control sources. In water control, building massive municipal facilities made major progress. Now, we have the less obvious problems, harder to pinpoint and control, like runoff."

Many Chemicals Lead to Ozone

But diffuse sources can make major contributions of pollutants, according to officials. A study by the Boston office of the agency, for example, estimated that this area's main sewage treatment plant released 3,000 tons a year of ozone precursors into the air, some of it coming from householders improperly disposing of everyday chemicals like varnish. "I don't know how we would control that," said Cindy Greene, an E.P.A. scientist here. "Perhaps with public education."

Many chemicals react with sunlight to form ozone, according to Ms. Greene. One is ethanol, emitted at rates of over 100 tons a year by two bakeries in Connecticut, the Arnold plant in Greenwich and the Pepperidge Farm facility in Norwalk. Ethanol, said Ms. Greene, is easily recognized around bakeries: "That's what smells so good."

A major category of ozone precursors, volatile organic compounds, is found in oil-based paint, she said, especially the quick-drying kind used for highway stripes. Auto body shops,

metalworking plants and dry cleaners also use chemicals that add volatile organic compounds to the air, she said.

The agency is considering a variety of lines of attack on more conventional sources. An important source of volatile organic compounds, according to scientists, is fumes from unburned gasoline. These could be reduced by changing the way gasoline is refined, to reduce the rate at which it changes from a gas to a vapor, or by recapturing fumes pushed out of a fuel tank when more gasoline is added. That is already done in California and the District of Columbia, with a device on the service station pump. But it could also be accomplished by adding equipment to each new car.

Critics Say U.S. Could Do More

Less drastic steps include tougher enforcement of existing programs, including inspection and maintenance requirements for cars.

In addition, some environmentalists disagree that all the easy sources have been attacked. At the Environmental Defense Fund, a nonprofit group, based in New York, that litigates on many pollution issues, Dr. Michael Oppenheimer, a senior scientist, said the Environmental Protection Agency "made a policy decision not to go after the large-scale producers any further."

He said that the Government had concentrated on controlling volatile organic compounds but that reductions could also be realized in cutting output of nitrogen oxides, about 30 percent of which come from power companies. Pollution controls on those sources "are not cheap, but they are used routinely in Japan," said Dr. Oppenheimer. Reducing those chemicals, he added, would also reduce acid rain.

A likely spot for additional control measures is New York, fourth on the Federal Government's list of metropolitan areas where additional attention to ozone is needed, and also high on the list for carbon monoxide. State officials are waiting to see whether the Federal Government will mandate devices that reduce emissions on new cars before it acts on a proposal that would require filling-station owners to install, at a cost of about \$50 million in all, the pump devices to counter chemical vapors.

Light Discord Ends Mexican's Visit

By RICHARD J. MEISLIN

Special to The New York Times

WASHINGTON, Aug. 14 — As he concluded his visit here, President Miguel Alemán of Mexico offered and read his first criticism today in what became an unusually harmonious day encounter with United States officials.

Addressing reporters and guests at a luncheon sponsored by the National Press Club, the Mexican President demanded for greater protection for the rights of migrant workers in this country and cautioned the United States to avoid taking unilateral decisions on matters of common interest that could potentially affect both sides of the border.

While the issue has been played down in official meetings here, Mr. de la Madrid also took the opportunity to reiterate his country's differences with the United States over policy in Central America.

"Violence will not take care of the problems," he said. "Violence in Central America also implies the risk that there will be political agitation in the region of Latin America to the detriment of relations between the United States and the countries of Latin America."

Positive Aspects Emphasized

On the whole, however, as he has throughout the visit, Mr. de la Madrid underscored the positive aspects of the United States-Mexican meeting. Today Reagan Administration officials declared Mr. de la Madrid's visit a success in its overriding goal — to restore a sense of cooperation between the two countries that had been seriously damaged by critical remarks made in recent months by members of Congress

and of the Administration.

Mr. de la Madrid, speaking in the even, formal manner characteristic of his public appearances, assailed those who have been critical of his Government's efforts in combating narcotics trafficking, saying their statements were "harmful to cooperation between the two countries."

"Mexico's image and its Government's efforts are attacked," Mr. de la Madrid said, "while little is said or written about the significant progress achieved in this struggle." He said that over the last three years his country had destroyed drug fields "whose production would have been enough to intoxicate a population twice that of the United States."

The President, who can speak English fluently, listened in English to questions submitted in writing by reporters, but responded to them in Spanish.

On Capitol Hill, meanwhile, Senator Jesse Helms, Republican of North Carolina, listened to testimony at an informal hearing in the Senate Foreign Relations Committee room from a group of about 25 Mexicans who complained that their charges of election fraud and corruption in northern Mexico were being ignored by President de la Madrid and other Mexican officials.

The leader of the group, Alfredo Corrella, a chemical engineer who is a leader of the conservative opposition National Action Party in the northern industrial city of Monterrey, said, "In Mexico we do not have a democracy; we have a facade of a democracy."

He said the group was presenting its views in the United States in the hope that Mr. de la Madrid might hear about them.

Mr. Helms, whose hearings last May provided a forum for some of the sharpest attacks against Mexico, said that "Mexican citizens are no longer willing to put up with fraud and deceit," and that the "triple oppression" of political power, corruption and narcotics trafficking "hides a deep instability that could affect all persons on this continent."

A Change in Tactics

The Senator's tone was in stark contrast to that of Reagan Administration officials. After a long period of taking a critical tack in trying to promote change in some Mexican policies, these officials are now seeking the same end through assistance and cooperation. President Reagan told Mr. de la Madrid on Tuesday that the United States was "ready to lend a hand when and where it can make a difference." It was the fifth meeting of the two leaders since 1982.

"We're very sincere," one ranking Administration official said. "There is a unanimous view at the Cabinet level and held by the President that what we've been saying we're going to do, so long as Mexico meets its part of the bargain too."

That would include compliance with Mr. de la Madrid's expressed goals of opening Mexico's economy to foreign competition as well as strengthening the country's fight against drug trafficking. These were two of the key issues the two countries discussed.

"The general Administration view is not to share the view that de la Madrid is not strong enough to do this politically or personally," the official said, adding, "We have the sense that de la Madrid plans to move ahead with these reforms."

Reagan and de la Madrid Have a 'Fruitful' Session

By RICHARD J. MEISLIN

Special to The New York Times

WASHINGTON, Aug. 13 — President Reagan and President Miguel de la Madrid of Mexico met today and agreed to seek measures intended to reduce drug trafficking through Mexico and expand trade and investment between their two countries.

The meeting of the two Presidents and some of their top aides was intended as much to smooth over recent tensions in United States-Mexican relations as it was to make progress on particular issues, and on this count it appeared to have succeeded.

Mr. Reagan, in a brief statement upon Mr. de la Madrid's departure after more than two hours of meetings at the White House, described their reunion as "one of our most constructive and, I think, fruitful."

Mr. de la Madrid called it "particularly satisfactory."

The only firm agreement reached in the meeting was for the United States to lift a six-year-old embargo on imports of tuna from Mexico, which has deprived Mexico of an estimated \$20 million to \$35 million a year. The embargo was begun in mid-1980 after

Two major Swiss banks joined in a temporary loan to Mexico, assuring its financial rescue. Page 32.

Mexican naval boats stopped six American tuna boats while patrolling in what Mexico declares is a fishing zone extending 200 miles from its shores.

Mr. Reagan said the decision to lift the embargo was "symbolic of our strengthening bonds."

Mr. Reagan said also that agreement had been reached to bolster antidrug programs in both countries and to pur-

tration official said that "we cannot be more impressed by and happy with the strong position" Mr. de la Madrid took on the issue.

Mexico has been heavily criticized in recent weeks — both by members of Congress and Reagan Administration officials — for laxity in preventing the growth of marijuana and opium poppies and the transshipment of cocaine through its territory.

Although the tone of the meeting was intended to be as positive as possible, the official said the United States had once again told Mr. de la Madrid that "it's absolutely imperative to continue" the investigation of the torture-murder in Mexico of a United States Drug Enforcement Administration agent, Enrique Camarena Salazar. Dozens of people have been arrested in connection with the case, but other key figures are believed to be still at large.

As usual, officials said, the two Presidents disagreed sharply over policy in Central America, particularly President Reagan's backing of forces trying to overthrow the Nicaraguan Government. But unlike previous meetings, the issue did not dominate the discussions.

The Administration official said a trade agreement would make it clearer to United States companies interested in investing in Mexico what requirements and regulations they would have to satisfy. Smaller companies particularly have often been confounded by the welter of restrictions on foreign investment in Mexico. But the official said the agreement did not necessarily contemplate a change in those restrictions.

Marcos moved \$100 million before fall, officials say

MANILA, Philippines (AP) — During his last 90 days in office deposed President Ferdinand E. Marcos transferred \$100 million from the government to private Swiss bank accounts, a member of a government panel seeking to recover the money said Saturday.

Jovito Salonga, chairman of the Presidential Commission on Good Government, made the discovery during a three-week trip to Europe and the United States, commission member Mary Concepcion Bautista said in an interview.

She said Salonga reported to the commission Tuesday that he obtained documents that show how Marcos forwarded the money to banks in Switzerland through unidentified American banks.

Salonga told the commission that Marcos made the transfers in three installments, the last one on Feb. 19, she said. That was a week before a civilian-military revolt ended Marcos' 20 years in power.

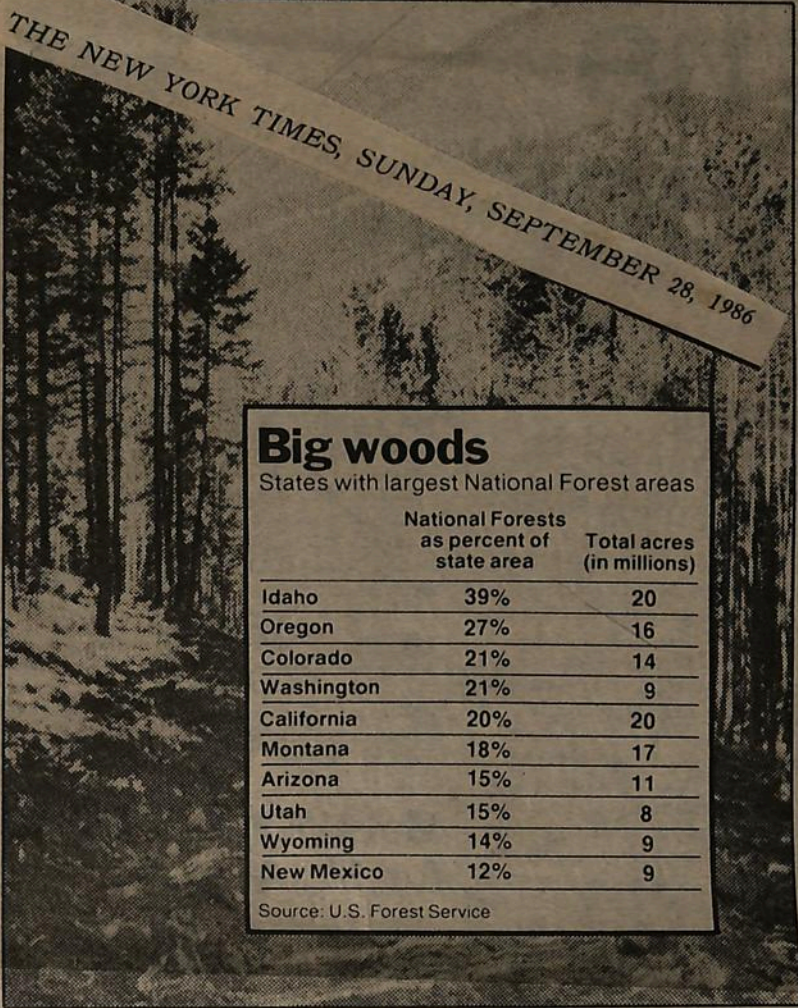
President Corazon Aquino took power and Marcos fled to Hawaii.

Aquino created the commission to recover the estimated \$10 billion in government funds that Marcos, members of his family and their close associates allegedly stole from the country during his rule.

Commission officials say much of the wealth has been stashed in banks in Switzerland, where Aquino's government has filed lawsuits to recover the money. Switzerland has frozen all of Marcos' assets in that country.

The Aquino government also has filed suits in the United States to recover Marcos' assets, including several buildings in New York.

Bautista said the commission was not involved in an investigation by the U.S. Justice Department to determine whether Defense Minister Juan Ponce Enrile and his wife diverted U.S. aid to their personal use.



Big woods

States with largest National Forest areas

	National Forests as percent of state area	Total acres (in millions)
Idaho	39%	20
Oregon	27%	16
Colorado	21%	14
Washington	21%	9
California	20%	20
Montana	18%	17
Arizona	15%	11
Utah	15%	8
Wyoming	14%	9
New Mexico	12%	9

Source: U.S. Forest Service

The New York Times/Laurence B. Aluppy

Cutting Into National Forests

By PHILIP SHABECOFF

WASHINGTON

THE people of Puerto Rico know the 30,000-acre Caribbean National Forest as el Yunque, the Anvil. It is the only tropical rain forest in the national forest system, and environmentalists and scientists have protested angrily against a recently unveiled Forest Service plan calling for more than one-fifth of its acreage to be harvested for timber over the next 45 years.

Francisco Javier Blanco, executive director of the Puerto Rican Conservation Trust, predicted that such a harvest in the fragile ecosystem would cause "serious environmental problems," altering rainfall patterns and wiping out endangered species, such as the Puerto Rican parrot. The only reason for the plan, he charged, is the Reagan Administration's policy of increasing timber production from national forests.

Terry Tenold, the Forest Service planning officer in Puerto Rico, said that only areas cut in the past for charcoal would be harvested, and that the wood was needed for the Puerto Rican economy.

The Forest Service is under fire for many similar, recently published plans, all required by the National Forest Management Act of 1976. The plans often call for sharply increased timber harvests, new roads into virgin areas and expanded grazing, mining and oil drilling activity.

The plans are frequently attacked by conservation or hunting organizations, citizens' groups and others who see their interests threatened.

Critics such as Peter Kirby, a forest expert for the Wilderness Society, say the plans will inflict a heavy toll on the wildlife, water quality and recreational potential of the forests while providing taxpayer-subsidized windfalls to industry.

Officials such as Everett L. Towle,

director of land management planning for the Forest Service, reply that the plans will provide vital wood and other commodities while insuring that the forests serve the needs of all Americans.

Last week the Forest Service released long-range plans that envisage a doubling of the timber cut to 20 billion board feet and the construction of hundreds of thousands of miles of logging roads by 2030.

Meanwhile, conservation groups appealed a plan to double timber production in the million-acre George Washington National Forest in Virginia and West Virginia, which is heavily used for recreation and provides crucial habitat for animals such as the black bear. The conservationists estimate that the forest will return only 10 cents on every Federal dollar spent to prepare timber sales.

Stephen Parsons, planning officer for the forest, said such estimates did not reflect other benefits, such as improved wildlife habitat and better access to the forest.

"It is not a black and white issue," he said.

Perhaps the most intensely criticized program is one dictated largely by Congress for the 17 million-acre Tongass National Forest, which sprawls across southeastern Alaska. The Alaska National Interest Lands Conservation Act of 1980 permits the Forest Service to spend \$40 million a year to harvest 4.5 billion board feet of timber there over the next decade, most of which will be sold to Japan as pulp.

Critics call the plan a travesty that is losing the Federal Government money while destroying much of the last remaining old growth rain forest in the United States.

Forest Service and industry spokesmen say the Tongass program is necessary to support the economy of southeastern Alaska and insist that it will not cause lasting damage to the environment.

Rivera Mural Awaits a New Shelter

By WILLIAM STOCKTON

Special to The New York Times

MEXICO CITY, Jan. 1 — Lounging in the central park, or alameda, of a Mexican village, gossiping with friends and purchasing snacks from a pushcart vendor is a favorite way to pass a Sunday in Mexico, even in crowded Mexico City, where the central park is a particularly beautiful one.

As a small boy, Mexico's great muralist Diego Rivera went to Mexico City's alameda on a Sunday, lounging with his parents, just as hundreds of people do today, nearly a century later.

A decade before he died in 1957, Diego Rivera painted a large fresco called "Dream of a Sunday Afternoon in the Central Alameda," in which the trees of the park embrace a Riveraesque fantasy. Painted in the Hotel del Prado across the street from the alameda, the mural embraced the centuries of history the park had seen, from the Spanish Inquisition to the Mexican revolution.

The mural has been in the hotel ever since, first in the dining room and then in the lobby.

The hotel, once a fashionable tourist spot but a bit in decline in recent years, was seriously damaged during the earthquakes that struck Mexico City 15 months ago, killing thousands of people and destroying hundreds of buildings. The hotel came close to collapsing and has been closed ever since, but the mural survived with only a few tiny cracks.

Mural Moved 100 Yards

Although the timing was a bit of an accident, park loungers were treated to a unique spectacle three weeks ago, just six days after the master's 100th birthday.

Mr. Rivera's mural, all 77,000 pounds of it encased in foam rubber,

wood, and steel girders to hold it rigid, was extracted from a second-floor lobby window of the del Prado by an enormous crane and loaded onto a flatbed truck.

The truck carried it ever so slowly and gently 100 yards to a new site where the mural was settled onto a concrete platform, the workers treating the giant apparatus as if it were filled with thousands of eggs.

In the coming months, a building will be built around it and a salon created. There, government art conservationists hope, the mural will remain permanently, and safe from earthquakes, a national artistic treasure that all who come to the alameda can view.

As did so many of Mr. Rivera's murals, the alameda mural instantly generated heated controversy because the artist, an avowed atheist and Communist, tucked away a small scroll in the work that said, "God does not exist."

Historians recount how demonstrators stormed the hotel and slashed the fresco, which Mr. Rivera repaired.

In 1956, little more than a year before his death, Mr. Rivera made peace with the Roman Catholic Church and changed the wording on the scroll to merely reflect the 19th-century meeting at which a Mexican politician had spoken the words.

After making the change, he descended from the scaffold and told waiting reporters, "I am a Catholic."

More Than a Year of Study

"We knew the day of the earthquake that regardless of what happened to the hotel the mural would have to be moved," said Juan Urquiaga, a Government architect who is head of the Office of Architecture and Conservation of National Artistic Heritage. "We've spent more than a year studying the problem and getting ready for the move."

Mr. Rivera, who was paid 512 pesos per square meter for his work — or

ment built another park. The adjacent site where the hotel parking lot stood was vacant, and this was chosen for the mural.

Earthquake-Proof

In the weeks prior to the move, while workers labored amid the ruins of the second-floor lobby of the del Prado to prepare the mural, other workers hurried to lay the concrete foundation of a new building.

They prepared a pedestal 50 feet long and 5 feet wide onto which the mural would be lowered by the crane and fastened in place.

The plan is to build the walls and roof of the salon around the mural, solving the problem of maneuvering the unwieldy object through a door or window of some other structure.

Moreover, by constructing the salon with enough structural steel to satisfy the designer of any modern bank vault, Diego Rivera's masterpiece will be earthquake-proof.

At the del Prado, a platform was built extending out of the second-floor lobby window into Juárez Avenue. Dozens of steel casters were placed under the mural.

On the day of the move, the crane pulled the mural out of the hotel onto the platform and then lifted it onto the truck for the trip to the new foundation.

"Our biggest problem was avoiding the possibility of any torsion when the mural was moved," Mr. Urquiaga said. "But the steel structure is so well braced, we don't think there will be any damage."

But it will likely be several months before the art conservationists find out if they succeeded.

For the move, the face of the mural was covered with cloth, polyurethane cushioning material and then a sturdy wooden cover.

That will remain in place until the salon is completed and there is no danger of bad weather affecting the fresco.

"We will remove the cover, clean

Opposition Seeks Statehood for Mexico City

By WILLIAM STOCKTON

Special to The New York Times

MEXICO CITY, Jan. 3 — In the early morning darkness a few weeks ago, someone bombed a statue of Venustiano Carranza, the Mexican revolutionary hero. The statue was toppled, and some nearby windows were shattered.

No one took responsibility for the bombing, which caused no injuries, and the police have made no arrests. But the bombing of the statue has been seized upon by the political opposition as another example of why Mexico City must have its own elected government, rather than one appointed by national authorities.

In recent weeks, a coalition of four leftist parties and the country's single rightist party has led a campaign to transform the Federal District into a new state to be called Anahuac, with its own governor, legislature and judiciary, just as in Mexico's 31 other states.

Manuel Terrazas, the deputy representing the United Socialist Party, said the bombing was a warning of social unrest to come in Mexico City. He said that without truly representative government, the city's problems and social unrest would only grow worse.

Given the right to self-government, he said, the residents have "the capacity to confront the city's problems and resolve them and develop their maximum capacity for creativity."

He said Mexico City residents had not forgotten what they accomplished working together without Government interference in the days after the major earthquakes 16 months ago, when the authorities were over-

whelmed and citizen volunteers rescued thousands of people trapped in buildings.

Mexico City, which is one of the world's largest cities with some 12 million people living within its boundaries and six million others living in the greater metropolitan area, has traditionally had little say in its own government. The President of Mexico appoints the mayor, the police chief, the city's attorney general and its judiciary.

Mexico City residents can vote in national elections for President and to name members of the Chamber of Deputies and Senate. But they cannot make their own laws, draw up the budget or decide the city's priorities as it tries to manage growth fueled by an unabated influx of people from the countryside.

Seeking to defuse the growing opposition, the Government this week unveiled its own plan to bring more democracy to Mexico City, proposing to create a legislative assembly for the city. President Miguel de la Madrid sent the proposed legislation to the national Congress, which is overwhelmingly controlled by the governing Institutional Revolutionary Party, thus assuring that the proposal will become reality.

Under the plan, the assembly would have 66 members elected by the residents of Mexico City, but would have no veto power over the mayor, who would continue to be a presidential appointee.

In his message proposing the legislation, Mr. de la Madrid ruled out any possibility of creating a new state, saying the seat of the Federal Government

and an autonomous government for the Federal District could not co-exist because "it would attack national unity and undermine the Federal pact."

Under the Government's plan, the assembly would have 40 members from the PRI, as the governing party is known, and 26 from the opposition parties, even though in the last national election the ruling party won less than 50 percent of the total vote.

Opposition politicians say their opposition's political strength is the real reason that Federal authorities will never permit the Federal District its own government.

Miguel Hernández Labastida, a former member of the Chamber of Deputies representing the conservative National Action party, said: "If Mexico City had its own government and there were honest elections, the minority parties would control the city, not the PRI. The government and its party will never permit that."

The ruling party, which has dominated political life for 58 years, has been under increasing pressure in recent years to open up the political system to more democratic procedures.

Hurricane in Cook Islands

WELLINGTON, New Zealand, Jan. 3 (AP) — A South Pacific hurricane struck the Cook Islands today, destroying homes, roads and resorts and leaving as many as 1,000 people homeless. The main island, Raratonga, was hit by a tidal wave. Damage was estimated in excess of \$15 million. Ansett Airlines said it planned to fly a Boeing 767 to Raratonga on Sunday to evacuate Australian and New Zealand tourists.

Buying Home in Mexico Is Risky Affair

U.S. Couple's Dream Is Dragged Through Courts

By MARY WILLIAMS WALSH

Staff Reporter of THE WALL STREET JOURNAL

PUERTO VALLARTA, Mexico—In 1980, Leland Yeoman, a building contractor from Bakersfield, Calif., bought a second home in this Pacific-coast city of cobbled streets and brilliant flowers. He and his wife, Susan, planned to use it for vacations for a few years, then move in.

But trouble intervened, trouble that will cost the Yeomans tens of thousands of dollars, and perhaps even the house. Their story illustrates some of the pitfalls of retirement in Mexico, where seemingly familiar institutions, such as unions and courts, can hold unpleasant surprises for the unsuspecting foreigner.

When the Yeomans bought the house, they inherited a part-time housekeeper

This is the second of two articles about the experiences of retired Americans in Mexico.

who had worked for the previous owner. Life was all palm trees and sunshine for four years, and then in June 1985, the Yeomans showed up for a vacation, and found the housekeeper had joined a union and filed suit.

She alleged that the Yeomans hadn't paid her the daily minimum wage, provided her uniforms or given her lunch. In addition, the union claimed their home wasn't a house at all, but a guest house, with six employees.

The Yeomans were taken aback. The housekeeper had never asked for a uniform or stayed around until lunch time, they say. They concede they didn't pay her the daily minimum wage but say she didn't work a full day—just three hours in the morning. They couldn't imagine where five other employees might have fit in their two-bedroom home.

Union Demand

Still, they say, they offered the housekeeper \$200 to settle her grievance. She seemed to agree, but there was a catch: The union agent wanted the Yeomans to sign a contract with him, too, promising to pay a monthly fee.

The Yeomans had run afoul of the Confederation of Mexican Workers, or CTM, a powerful labor group forged in 1936. Mexico was emerging from decades of revolutionary upheaval then, and politicians patched together a peace by convincing unionists and other interest groups they were better off inside the new government than out. Ever since, the CTM has supported Mexico's ruling party.

The arrangement has been good for Mexican social stability, but it has also created a entire class of labor middlemen who confront management in the name of

the rank-and-file, when take kickbacks in return for dropping their demands. The Yeomans found the system too much to stomach. They refused to sign the contract.

Instead, they hired a local labor lawyer. The lawyer said the suit was unfair. He asked the Yeomans for \$210 up front and said he would solve everything in a couple of days. That was the last time the Yeomans saw him.

So the Yeomans found another labor lawyer. This one also said not to worry, and asked for \$230 to settle with the union. The Yeomans gave it to him. Two days later, the union struck the house.

Scaling the Wall

As the Yeomans tell it, half a dozen cars filled with picketers inched up the steep, cobbled drive to their front gate. The pickets hopped out, wrapped the house in an enormous red banner, then wired the gate shut with the Yeomans inside. The couple scaled the garden wall and went back to California.

Through a Mexican neighbor, they called the lawyer to find out why he hadn't settled with the union. He told them not to worry, and asked for \$455. They wired it to him. He disappeared.

Months passed. Then, they assert, CTM local leader Rafael Yerena sent word that the Yeomans would have to pay the union \$12,900 to settle the case—and that they would still have to make monthly payments. The Yeomans flew back to Mexico, where they told Mr. Yerena they didn't owe the union a cent. Mr. Yerena, they claim, said he would settle for \$6,500. They refused and flew back to California.

Mexicans have repeatedly told the Yeomans that the fastest way to solve a dispute here is to make a payoff. "The whole system here is predicated on the fact that Mexicans don't make enough to live," says a neighbor.

Mr. Yeoman, on the other hand, says that if he backs down now, the union will feel empowered to sue anybody.

"We have the feeling that we are doing something to help the hundreds of other Americans here," he says.

Quick Sale

Months passed. One day, a Mexican neighbor called with the news that the union was showing people through the house, which was to be auctioned off the next morning.

Mr. Yeoman rushed back to Mexico. He was unable to persuade a judge to halt the sale, and the house was auctioned off. He then appealed to the Mexican Tourism Ministry. For the first time, he says, he found helpful officials; one called the judge and asked him not to sign the auction papers.

The judge complied, and the case has been in limbo since, with both the Yeomans and the winning bidder fighting in the courts to establish ownership.

Others promised to try to talk Mr. Yerena down to \$1,000, the Yeomans say, only to report back the next day that their approach had backfired and that he was back up to \$12,000.

Mr. Yerena denies he ever asked the Yeomans for money. He acknowledges that Tourism Ministry officials came to talk to him, but claims they were simply trying to assess the facts of the case.

The Yeomans, he says, have a confused idea of what's happening. Instead of talking to him directly, he asserts, they usually send lawyers, or their Mexican neighbor, while they remain in California.

Moreover, the labor official insists the Yeomans were running a private guest-house, renting it out to visitors from the U.S. Six people have testified in court that they worked for him, he says. (Mr. Yeoman vigorously denies that contention.)

Return Trip

On a recent rainy Tuesday, the Yeomans flew in to Puerto Vallarta. They hadn't been back to their house since they escaped the union demonstrators in 1985. They drove into town from the airport, crept up the cobbled hillside in low gear, got out of the car, and peered over the garden wall.

A dead palm tree, toppled in last fall's storms, lay crosswise across the smashed tile roof. Mud had washed down the hillside and under their door, pasting rugs to the floor and soaking the furniture. Termites snaked up the walls and into the wooden beams holding up the roof. The yard was a riot of weeds.

Mrs. Yeoman burst into tears.

Later, the Yeomans went to see Mr. Yerena. In determined Spanish, Mrs. Yeoman told him the problem had dragged on long enough.

"How do you propose we resolve this?"

Mr. Yerena asked. Mr. Yeoman proceeded to explain there had never been six employees, that the house wasn't a hotel, and that the lawsuit was groundless. Mr. Yerena told the Yeomans to go back to California; he would be in touch.

A reporter stayed on and asked Mr. Yerena whether he had any advice for would-be American retirees in Mexico.

"They should invest in Mexico," he said. "Mexico is safe. They just have to be careful about who gives them their legal advice, so they stay on the right track."

FOREIGN EXCHANGE

Tuesday, March 10, 1987

The New York foreign exchange selling rates below apply to trading among banks in amounts of \$1 million and more, as quoted at 3 p.m. Eastern time by Bankers Trust Co. Retail transactions provide fewer units of foreign currency per dollar.

Country	U.S. \$ equiv.		Currency per U.S. \$	
	Tues.	Mon.	Tues.	Mon.
Argentina (Austral) ...	.6502	.6502	1.538	1.538
Australia (Dollar) ....	.6841	.6800	1.4618	1.4706
Austria (Schilling) ....	.07657	.07680	13.06	13.02
Belgium (Franc)				
Commercial rate ....	.02604	.02612	38.40	38.29
Financial rate .....	.02582	.02596	38.73	38.52
Brazil (Cruzado) .....	.04933	.05023	20.27	19.91
Britain (Pound)	1.5885	1.5875	.6295	.6299
30-Day Forward	1.5833	1.5819	.6316	.6322
90-Day Forward	1.5749	1.5733	.6350	.6356
180-Day Forward	1.5630	1.5610	.6390	.6406
Canada (Dollar) .....	.7496	.7496	1.3341	1.3340
30-Day Forward ....	.7490	.7491	1.3351	1.3349
90-Day Forward ....	.7477	.7477	1.3374	1.3375
180-Day Forward ....	.7454	.7452	1.3416	1.3419
Chile (Official rate) ...	.004816	.004816	207.66	207.66
China (Yuan) .....	.2693	.2693	3.7128	3.7128
Colombia (Peso) .....	.004401	.004401	227.20	227.20
Denmark (Krone) .....	.1437	.1433	6.9600	6.9775
Ecuador (Sucre)				
Official rate .....	.006782	.006782	147.45	147.45
Floating rate .....	.006826	.006826	146.50	146.50
Finland (Markka) ....	.2203	.2209	4.5375	4.5275
France (Franc) .....	.1620	.1616	6.1735	6.1870
30-Day Forward ....	.1618	.1614	6.1807	6.1948
90-Day Forward ....	.1613	.1610	6.1980	6.2125
180-Day Forward ....	.1606	.1602	6.2255	6.2410
Greece (Drachma) ....	.007394	.007407	135.25	135.00
Hong Kong (Dollar) ...	.1282	.1281	7.8020	7.8035
India (Rupee) .....	.07707	.07716	12.97	12.96
Indonesia (Rupiah) ....	.0006072	.0006072	1647.00	1647.00
Ireland (Punt)	1.4400	1.4430	.6940	.6930
Israel (Shekel) .....	.6184	.6184	1.617	1.617
Italy (Lira) .....	.0007587	.0007575	1318.00	1320.00
Japan (Yen) .....	.006508	.006498	153.65	153.90
30-Day Forward ....	.006520	.006509	153.38	153.63
90-Day Forward ....	.006545	.006532	152.80	153.07
180-Day Forward ....	.006582	.006570	151.93	152.20
Jordan (Dinar)	2.9369	2.9369	.3405	.3405
Kuwait (Dinar)	3.6088	3.6088	.2771	.2771
Lebanon (Pound) .....	.009434	.009434	106.00	106.00
Malaysia (Ringgit) ....	.3946	.3956	2.5340	2.5280
Malta (Lira)	2.8531	2.8531	.3505	.3505
Mexico (Peso)				
Floating rate .....	.0009372	.0009443	1067.00	1059.00
Netherlands (Guilder) ..	.4770	.4771	2.0963	2.0963
New Zealand (Dollar)	.5670	.5645	1.7637	1.771
Norway (Krone) .....	.1434	.1437	6.9750	6.9600
Pakistan (Rupee) .....	.05797	.05797	17.25	17.25
Peru (Inti) .....	.04955	.04955	20.18	20.18
Philippines (Peso) ....	.04859	.04859	20.58	20.58
Portugal (Escudo) ....	.007047	.007057	141.90	141.70
Saudi Arabia (Riyal) ..	.2666	.2666	3.751	3.751
Singapore (Dollar) ....	.4659	.4666	2.1465	2.1433
South Africa (Rand)				
Commercial rate ....	.4780	.4815	2.0921	2.0768
Financial rate .....	.2638	.2650	3.7907	3.7735
South Korea (Won) ....	.001169	.001169	855.00	855.00
Spain (Peseta) .....	.007686	.007701	130.10	129.85
Sweden (Krona) .....	.1547	.1546	6.4625	6.4675
Switzerland (Franc) ..	.6404	.6376	1.5615	1.5685
30-Day Forward ....	.6416	.6389	1.5587	1.5652
90-Day Forward ....	.6441	.6414	1.5525	1.5592
180-Day Forward ....	.6484	.6455	1.5423	1.5493
Taiwan (Dollar) .....	.02856	.02872	35.01	34.81
Thailand (Baht) .....	.03860	.03860	25.91	25.91
Turkey (Lira) .....	.001302	.001302	768.30	768.30
United Arab (Dirham)	.2723	.2723	3.6730	3.6730
Uruguay (New Peso)				
Financial .....	.005291	.005291	189.00	189.00
Venezuela (Bolivar)				
Official rate .....	.1330	.1330	7.50	7.50
Floating rate .....	.04365	.04365	22.91	22.91
W. Germany (Mark) ..	.5391	.5379	1.8550	1.8590
30-Day Forward ....	.5404	.5392	1.8506	1.8546
90-Day Forward ....	.5426	.5413	1.8431	1.8475
180-Day Forward ....	.5458	.5445	1.8321	1.8365
SDR	1.25951	1.26152	0.793961	.0792693
ECU	1.11930	1.12216		

Special Drawing Rights are based on exchange rates for the U.S., West German, British, French and Japanese currencies. Source: International Monetary Fund.

ECU is based on a basket of community currencies. Source: European Community Commission.

z-Not quoted.

INTERNATIONAL

U.S. Retirees Again Flocking to Mexico

Cheap Peso Makes Life Easy, but Not Too Easy

By MARY WILLIAMS WALSH

Staff Reporter of THE WALL STREET JOURNAL

GUADALAJARA, Mexico—If Mexico is a roiling cauldron of economic instability, then why are so many contented, white-haired Americans here?

"I hate to tell you why, but it's because it costs so much to live in the United States," says Judith Furton, a 76-year-old retired Michigan schoolteacher living here on pensions and Social Security.

Sunlight filters through garden foliage and into Mrs. Furton's picture window. From the garden comes the sound of water trickling over a graceful stone fountain and into a goldfish pool. Mrs. Furton, billowing about in a hand-embroidered turquoise muumuu, serves brownies and coffee, and asks a visitor to guess what she paid for the big basket of chrysanthemums and gladiolas on her coffee table: \$6.

"My heart aches for those people up there in the United States," she says.

In the early 1970s, 50,000 Americans were living in Mexico or commuting to sec-

This is the first of two articles. Tomorrow: One American couple's retirement nightmare in Mexico.

ond homes here in the winter. For the comfortable climate and handy airports, most of the retirees chose Guadalajara and smaller towns in west-central Mexico. But about half of those Americans moved back to the U.S., put off by economic upheavals and by the hostility of Luis Echeverria, president from 1970 to 1976.

Influx From the U.S.

Now the *gringos* are starting to come back.

"Right now, there is a tremendous influx of Americans coming to Mexico to live," says Ann Whiting, president of the American Society in Guadalajara. "This is the first year since Echeverria that I've seen people coming down here."

In tiny one-time fishing villages near Guadalajara, American and Canadian women now walk to parties on the old cobbled lanes, wearing running shoes under their cocktail dresses. Buses laden with retirees scrape through the narrow streets on house-hunting tours.

In the resort city of Puerto Vallarta, sidewalk real-estate salesmen drape iguanas on their shoulders as come-ons, then switch the conversation to condominiums. In Ajijic, once a corn-and-beans backwater, residents compete annually to see who can make the best chili, a dish Americans think is Mexican but isn't.

In Guadalajara, Mrs. Furton and her husband, Francis, have charted their monthly living expenses since moving to Mexico in 1973, and have sold the information to curious Americans since 1980. "We



sold more packages in the month of January than we sold in the first five months of last year," says Mrs. Furton.

The return of the gringo is being brought about largely by the same force that pushes Mexicans north: the nation's troubled economy. In early 1986, one dollar bought 444 pesos; now it buys more than 1,050. Inflation hurts purchasing power, but not enough to wipe out the dollar's advantage.

'An Absolute Gift'

Robert Lamont, a semi-retired consultant in Guadalajara, says his wife underwent major surgery here last year and spent 10 days in the hospital. "My whole bill came to \$2,800, and that was with a private room," he says.

Carolyn Souza, a golf-lover, lives in a house opening onto the fairway of a suburban Guadalajara country club. "It's an absolute gift what they pay," she says of the golfers beyond her patio. "Twelve thousand pesos a day, plus 4,500 for a caddy"—about \$16.

Azel F. (Chick) Hatch used to commute from Connecticut to his New York City consulting firm until one below-zero day in 1983, when he was walking down Broadway with two heavy briefcases, wet with snow and tilting into the wind.

Suddenly, he says, the waistband on his undershorts snapped, and the shorts slid to his knees inside his trousers.

"I just dropped the briefcases, and I said, 'No more!'" He went back to the office, announced his retirement, and within a month had moved to Guadalajara.

"I can live extremely well on \$12,000 a year here," he says. "Up there, I would be spending at least \$50,000 a year to live comparably."

Of course, there is no assurance the peso will continue falling. Nor does every foreigner who moves to Mexico have a happy experience. Americans who arrived in the 1960s, then rode out the jolts of the 1970s and early 1980s, have plenty of cautionary tales.

"When we came here about 16 years

ago, we thought we'd died and gone to heaven," says Daphne Aluta, a designer living in a house she built in Ajijic. Mexico's largest lake, Lake Chapala, shimmers in the distance beyond her garden. "The peso was as stable as the Rock of Gibraltar," she says. "Every \$10,000 was making \$100 a month. That went on for years, and everybody was walking around with a big smile on their face."

Then came trouble. The government increased taxes on interest income. Inflation rose. The peso, fixed against the dollar, became overvalued, and American purchasing power evaporated. A financial panic struck in 1976, with rumors of coups, daily threats of bank runs, and finally a massive devaluation of the peso.

"We were getting ready to move out in caravans," recalls Ms. Whiting, the American Society president.

Then a new administration took office, and the economy seemed to calm down. Americans tried hedging against future devaluations by investing in special dollar-denominated accounts in Mexican banks. But in 1982 the government froze the dollar deposits and let savers withdraw their cash only in pesos, at an exchange rate so far from market value that people lost nearly half their savings.

Today most Americans living in Mexico say they keep their money abroad and convert it to pesos only a little at a time. And they gripe about travel articles and advice columns that exaggerate the current good deals in pesos. One author in particular ignited retiree tempers by stating an American could live in Mexico for \$250 a month.

"I see so many people in their 70s trying to live on Social Security," says Katie Karns, a newspaper columnist and real-estate saleswoman in Ajijic. "They read the book and come here, and they're bewildered."

No Place for the Poor

She remembers one elderly man who rode down from the U.S. on the bus, looking for a home. The best she could find him was a studio apartment in Guadalajara for \$130 a month. He couldn't afford it.

"We've gotten more and more of those people," says Mrs. Karns. "Maybe there is a place for them in Mexico, but it isn't here any more."

Mrs. Karns and her husband, Rocky, live in one of the villages favored by Americans that rim Lake Chapala. Theirs is a simple house on a cobbled street where neighbors tie their horses in front and lemons sag from trees in back. The Karnses have no heat, no air conditioning, no garbage disposal; Mrs. Karns just tosses her trash over the garden wall for the neighbor's pig. When the couple came to Ajijic, fleeing Berkeley, Calif., in the late 1960s, their rent was \$56 a month, with a five-year lease.

Now Mexicans landlords charge Americans rents pegged to the dollar. There is no longer any such thing as a five-year lease. Mrs. Karns thinks a couple would need \$800 to \$1,000 a month to live well here.

But that still means having a maid and a gardener, and perhaps a sweeping veranda with views of the water and mountains. For some, it means swimming pools and statues in the garden. Others have guards watching over their neighborhoods from behind roadblocks. TV satellite dishes scan the sky from rooftops.

Cultural Differences

The Mexican towns where gringos alight feel in many ways farther from the U.S. than, say, similar-sized towns in Europe. Local people hang their pictures on the walls at different heights, use their turn signals to mean different things, consult a fortune teller about robberies before going to the police.

In Ajijic, the fruit vendor works from a Volkswagen Beetle with wrought-iron doors, his-and-hers fake leopard bathrobes for upholstery, and two coconuts and a plastic banana dangling from the rear.

Donald Hobbs, a former Iowa farmer, estimates he is awakened 70 times a year by mysterious pre-dawn fireworks in nearby villages. Elaine Olcott, a resident of a Guadalajara trailer park, lost her former garden apartment when a madam bought the building.

Retirees may find such quirks daunting. "I advise friends of my parents to come to Mexico on a tourist card for a year and see how they like it before they burn their bridges," says Patricia Nelson, an economist living in Mexico since 1948.

"It's going to be difficult. This is a Third World country. They are guests. They can't superimpose their ideas about organization. It's a matter of just going along."

Foreign Exchange

MONDAY, MARCH 9, 1987

	\$ value per unit of foreign currency		Units of currency per dollar	
	Mon.	Fri.	Mon.	Fri.
f-Argent (Austral)	.6519	.6498	1.5340	1.5390
Australia (Dollar)	.6798	.6780	1.4710	1.4749
Austria (Schilling)	.0768	.0775	13.02	12.91
c-Belgium (Franc)	.0260	.0264	38.48	37.95
f-Belgium (Franc)	.0258	.0261	38.78	38.25
Brazil (Cruzado)	.0502	.0502	19.91	19.91
Britain (Pound)	1.5870	1.5856	.6301	.6307
30-day fut	1.5814	1.5799	.6324	.6330
60-day fut	1.5772	1.5852	.6340	.6348
90-day fut	1.5730	1.5809	.6357	.6366
Canada (Dollar)	.7495	.7498	1.3342	1.3337
30-day fut	.7471	.7492	1.3385	1.3347
60-day fut	.7452	.7485	1.3420	1.3360
90-day fut	.7431	.7478	1.3458	1.3373
y-Chile (Peso)	.0048	.0048	207.99	207.24
Colombia (Peso)	.0044	.0044	226.25	224.75
Denmark (Krone)	.1433	.1442	6.9760	6.9325
c-Egypt (Pound)	.7246	.7246	1.3800	1.3800
f-Ecuador (Sucre)	.006981	.006981	143.25	143.25
Finland (Mark)	.2207	.2214	4.5315	4.5170
France (Franc)	.1616	.1629	6.1875	6.1380
Greece (Drachma)	.0074	.0074	135.25	134.52
Hong Kong (Dollar)	.1281	.1282	7.8035	7.8010
y-India (Rupee)	.0773	.0772	12.9400	12.9500
Indonesia (Rupiah)	.000608	.000608	1643.50	1643.50
Ireland (Punt)	1.4425	1.4535	.6932	.6880
Israel (Shekel)	.6213	.6182	1.6095	1.6175
Italy (Lira)	.000757	.000763	1321.00	1310.00
Japan (Yen)	.006499	.006511	153.87	153.59
30-day ft	.006510	.006521	153.61	153.36
60-day ft	.006521	.006533	153.35	153.08
90-day ft	.006534	.006545	153.05	152.80
Jordan (Dinar)	2.9499	2.9533	.33900	.33860
Kuwait (Dinar)	3.6058	3.6101	.27730	.27700
Lebanon (Pound)	.0962	.1060	104.00	94.340
z-Mexico (Peso)	.000937	.000944	1067.00	1059.00
Netherlands (Guilder)	.4763	.4831	2.0995	2.0700
N. Zealand (Dollar)	.5657	.5585	1.7677	1.7905
Norway (Krone)	.1434	.1438	6.9720	6.9530
Pakistan (Rupee)	.0580	.0580	17.25	17.25
y-Peru (Inti)	.0688	.0688	14.53	14.53
z-Philpns (Peso)	.0500	.0499	20.0200	20.0500
Portugal (Escudo)	.007070	.007077	141.45	141.30
Saudi Arab (Riyal)	.2667	.2667	3.7490	3.7490
Singapore (Dollar)	.4666	.4678	2.1433	2.1375
So. Korea (Won)	.001210	.001210	856.30	856.30
So. Africa (Rand)	.4813	.4825	2.07770	2.07250
Spain (Peseta)	.007699	.007773	129.89	128.6
Sweden (Krona)	.1542	.1552	6.4835	6.443
Switzerland (Franc)	.6378	.6423	1.5680	1.5570
30-day fut	.6390	.6435	1.5649	1.5539
60-day fut	.6402	.6449	1.5619	1.5506
90-day fut	.6415	.6461	1.5588	1.5477
Taiwan (NT \$)	.0287	.0286	34.81	34.97
Turkey (Lira)	.001294	.001308	773.05	766.35
U.A.E. (Dirham)	.2724	.2724	3.6713	3.6705
z-Uruguay (Peso)	.0053	.0053	188.5	188.5
z-Venezuel (Bolivar)	.0447	.0445	22.3700	22.4700
W. Grmny (Mark)	.5378	.5420	1.8595	1.8450
30-day fut	.5390	.5431	1.8552	1.8413
60-day fut	.5400	.5452	1.8517	1.8374
90-day fut	.5412	.5453	1.8479	1.8340
Yugoslavia (Dinar)	.001929	.001968	518.43	508.04

The Federal Reserve Board's index measuring the value of the dollar against 10 other currencies weighted on the basis of trade was 100.12 Monday, up .58 or .58 percent from Friday's 99.54. A year ago the index was 115.17.

Late prices as of 3:30 pm Eastern time as gathered by First American Bank of New York.

c-commercial rate, f-financial rate, y-official rate, z-floating rate, r-revised.

World Gold

MONDAY, MARCH 9, 1987

London morning fixing	\$404.85	off	\$ 1.45
London afternoon fixing	\$405.00	off	\$ 1.30
Paris afternoon fixing	\$406.70	up	\$ 0.17
Frankfurt fixing	\$405.02	off	\$ 2.01
Zurich late afternoon bid	\$405.40	off	\$ 0.50
	\$405.90		asked
Handy & Harman	\$405.00	off	\$ 1.30
Engelhard	\$406.54	off	\$ 1.30
NY Comex spot month	\$426.87	off	\$ 1.36
Republic National Bank	\$405.75	off	\$ 1.00

GOLD COINS

Maple Leaf, 1 troy oz.	\$430.50	off	\$ 3.50
Mex. 50 Peso, 1.2 troy oz.	\$513.25	off	\$ 4.00
Aus. 100 crown, .9802 troy oz.	\$404.50	off	\$ 3.20
American Eagle, 1 troy oz.	\$430.50	off	\$ 3.50
Source: Deak-International.			
Krugerrand, 1 troy oz.	\$410.80	off	\$ 2.30
China Panda, 1 troy oz.	\$455.10	off	\$ 2.60
Source: Manfra, Tordella & Brookes.			