

serve Jewish life especially where Jews constituted a majority. Jewish economic organizations – such as Sociedad Agrícola Lucienville, which was possibly the first agricultural cooperative in Argentina, and the Fondo Comunal, among the largest in the province – remained of economic importance. Nevertheless, the diminishing number of Jewish agricultural settlements and the general migration to Buenos Aires and its environs have had severe consequences for the Jews of Entre Ríos. The 1947 census recorded 11,876 Jews who declared their Jewish affiliation, i.e., 4.9% of all avowed Jews in Argentina; the 1960 census indicated the number had declined to 9,000. According to data provided in 1968 by the Va'ad ha-Kehillot (Central Committee of Jewish Communities), the number of Jews had decreased to 8,000, of whom about 3,050 lived in Paraná, the capital of the province. The same data refers to some 30 congregations in the province, but only nine of them, with 442 students (141 in Paraná), maintained any kind of Jewish education and there were only five youth centers. Nevertheless, these congregations provide a framework for activities and their membership in the regional branches of the Va'ad ha-Kehillot and of the \*DAIA brings them assistance in providing communal services and constitutes a mutual defense against antisemitism. Other local and regional committees allow the Jews of Entre Ríos to contribute to central welfare projects in Buenos Aires – such as the Jewish hospital, and the national and Israel funds.

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[Haim Avni]

## ENVIRONMENTAL SCIENCES.

The Holy Blessed One took the first human, and passing before all the trees of the Garden of Eden, said, “See my works, how fine and excellent they are! All that I created, I created for you. Reflect on this, and do not corrupt or desolate my world; for if you do, there will be no one to repair it after you” (Midrash Ecclesiastes Rabbah 7:13).

The philosophy of materialism and humanity’s right to dominate its environment has led to man’s rapid development. This attitude further developed during the Middle Ages and the Enlightenment in Western Europe on the basis of biblical interpretation. Western society embraced man’s dominance of nature, and technological advances through the ages enabled people to overcome the environment and attain a higher standard of living. Technological innovations, such as plowing, harvesting, forest clearing, and animal husbandry, helped overcome natural obstacles and tame nature.

Ecological and environmental concern can be found in Jewish sources from the Bible onward. In Genesis 2:15 man is given stewardship of the earth – *le-ovedah u-le-shomerah*. Man is to preserve the earth, to look after it, and to tend it. He is not the owner, nor the master. The earth was not given to man in absolute ownership to use (or abuse) as he saw fit; but

rather it was given to him to maintain and to preserve for his benefit and for that of future generations. Some of the many topics dealt with in Jewish sources include *shemittah* – the fallow year; *bal tashhit* – the prohibition of purposeless waste; felling of fruit-bearing trees; raising small cattle in Erez Israel; sanitary disposal of human waste; air pollution; water quality; noise; and many more. For a comprehensive discussion of this topic see \*Ecology.

The Mishnah and Talmud elaborate and expound on biblical passages that deal with nature and its preservation in order to curtail environmental damage. The approach taken by the rabbis to limit the harmful effects of different environmental sources was to treat them not as absolutes but according to prevailing conditions, and this is still applicable today. Injury to the environment included not only cases of proximate causation but also those in which conditions were created that might reasonably give rise to nuisance.

The Coalition on the Environment and Jewish Life was founded in 1993 to promote environmental education, scholarship, advocacy, and action in the American Jewish community. COEJL is sponsored by a broad coalition of national Jewish organizations and has organized regional affiliates in communities across North America. COEJL is the Jewish member of the National Religious Partnership for the Environment ([www.coejl.org/about/](http://www.coejl.org/about/)).

Environmental studies (environmental sciences) is a relatively new field that gained recognition after the publication of Rachel Carson’s *Silent Spring*. It crosses the boundaries of traditional disciplines, challenging us to look at the relationship between humans and their environment from a variety of perspectives. It is closely related to ecology and draws heavily on the physical sciences (chemistry and physics) as well as on biology and mathematics. Furthermore, due to globalization the careful integration of natural and social science data and information is vital to scientific research and societal decision-making related to a wide range of pressing environmental issues.

Complex interactions in the air, on land, underground, and in rivers, bays, and oceans are intricately linked to one another – and to our well-being. Below we shall briefly review the contributions made to the various disciplines comprising environmental sciences.

### Atmospheric Sciences

Atmospheric sciences deal with environmental issues such as acid deposition, air pollution and quality, and stratospheric ozone. One of its goals is to identify and quantify the natural and anthropogenic processes that regulate the chemical composition of the troposphere and middle atmosphere and to assess future changes brought about by human activities. They deal with topics as varied as the role of the biosphere in producing and consuming trace gases; the importance of the chemical and photochemical processes occurring in different atmospheric environments; and the role of transport processes connecting these environments (e.g., large-scale

advection, convection, stratosphere/troposphere exchanges, and continental export).

By the mid-1980s there was undeniable evidence that our planet was getting hotter, a massive 10% shift in only 30 years, so the idea of reduced solar radiation just did not fit and was not widely accepted in the scientific community. This began to change in 2001, when G. Stanhill and a colleague at the Volcani Center in Bet Dagan, Israel, collected all the available evidence together and proved that, on the average, records showed that the amount of solar radiation reaching the Earth's surface had gone down by between 0.23 and 0.32% each year from 1958 to 1992 (solar dimming).

Theoretical and experimental research in atmospheric radiative transfer and remote sensing of aerosol, their interaction with clouds and radiation, and impact on climate, with emphasis on biomass burning in the tropics was being conducted by Yoram J. Kaufman at the Goddard Space Flight Center. Joseph M. Prospero at the University of Miami was a specialist in the global-scale properties of aerosols focusing on the aerosol chemistry of the marine atmosphere and the biogeochemical effects of the long-range atmospheric transport of materials from the continents to the ocean environment. He pioneered in the study of mineral aerosol (soil dust) transport, showing that huge quantities of dust were carried by winds from arid regions to the oceans.

Richard Siegmund Lindzen at MIT was renowned for his research in dynamic meteorology on topics such as the atmospheric transport of heat and momentum from the tropics to higher latitudes. He developed models for the Earth's climate with specific concern for the stability of the ice caps, the sensitivity to increases in CO<sub>2</sub>, the origin of the 100,000 year cycle in glaciation, and the maintenance of regional variations in climate. Alan Robock, at Rutgers University, was involved in many aspects of climate change. He conducted both observational analyses and climate model simulations and his current research focuses on soil moisture variations, the effects of volcanic eruptions on climate, detection and attribution of human effects on the climate system, and the impacts of climate change on human activities. In the 1980s much of his work addressed the problem of nuclear winter, the climatic effects of nuclear war, demonstrating long-term (several-year) effects with a computer model, disproving the dirty snow effect, and discovering observational evidence of surface cooling due to forest fire smoke plumes in the atmosphere.

Research on cloud physics and dynamics, atmospheric radiative transfer, atmospheric dynamics, and satellite remote sensing of the Earth's climate and other planetary atmospheres was being conducted by Dr. Rossow of NASA. His early work focused on the clouds and dynamics of the atmospheres of Venus and Jupiter and he served on the Science Teams for the Pioneer Venus and Galileo (to Jupiter) space missions. Eli Tziperman of Harvard University worked on climate dynamics, trying to understand physical processes that affect the Earth's climate on time scales of a few years to millions of years.

The first numerical model able to simulate El Niño and the Southern Oscillation (ENSO), a pattern of interannual climate variability centered in the tropical Pacific but with global consequences, was devised by Mark Cane of Columbia University. In 1985 this model was used to make the first physically based forecasts of El Niño. Dr. Cane also worked extensively on the impact of El Niño on human activity, especially agriculture.

### Oceanography

Oceanography is the science that studies the world's oceans, its waters and depths, how they move and how they play a part in the whole of our planet. The sea is not just salty water, but a living system that controls many aspects of this planet. Limnology is the scientific study of the physical, geographical, chemical, and biological aspects of inland freshwater systems. The factors studied in such bodies of water as lakes, rivers, swamps, and reservoirs include productivity, interactions among organisms and between organisms and their environment, characteristics of the water and of the water bottom, and pollution problems. Structure, function, and long-term changes in these water bodies are also of importance.

Global studies of freshwater lakes with emphasis on biological, chemical, and physical interactions between the surrounding watersheds and lakes are the fields of interest of Charles Goldman of UC Davis with particular emphasis on eutrophication of lakes, nutrient limiting factors, the impact of climate and weather, and the use and importance of long-term data sets in environmental research. The core research has been directed towards a better understanding of lake processes and measures to preserve the water quality of lakes.

The research efforts of Paul G. Falkowski of Rutgers University were directed towards understanding the co-evolution of biological physical systems, evolution, paleoecology, photosynthesis, biophysics, biogeochemical cycles, and symbiosis. The cycling of nutrients and energy transfer in the microbial food chain, the dynamics of nutrient uptake by marine phytoplankton, the interaction of chemical-biological processes at the microbial level, and the impact of physical-biological processes on marine primary productivity were the major interests of Joel Goldman, UC SC.

Daniel P. Schrag of Harvard University applied geochemistry to problems in paleoclimatology and oceanography on a variety of timescales. A large portion of his current research effort used corals as recorders of information on past and present climates. Modern corals from the Pacific were being used to reconstruct El Niño variability over the last few centuries, and to assess the reliability of coral records. He also used geochemistry of corals to understand recent patterns of ocean circulation.

Understanding major biogeochemical cycles in the marine environment, as they operate today and in the past, were the main research interests of Mark A. Altabet, University of Massachusetts. He specialized in nitrogen cycling in the ma-

rine environment; nitrogen isotope biogeochemistry; particle fluxes in the open ocean; marine productivity; oceanic paleochemistry and paleoproductivity. Much of this research relates to the Earth's carbon cycle and control of atmospheric CO<sub>2</sub> concentration. Related work involved studies of N<sub>2</sub>O and carbon isotopes.

### Soil Microbiology

Soil microbiology deals with the improvement of knowledge and understanding of the microbial processes involved in geochemical cycles (e.g., carbon and nitrogen cycles) and in the factors contributing to the quality of our environment and our foods, in order to understand them and to eventually control them. These objectives require improved knowledge of microbial populations and their activities. They also require improved knowledge of how terrestrial ecosystems work, using integrated methods for research of the processes.

Over and above improved knowledge of soil micro-flora and their activities, and more generally the biological functioning of soils, soil microbiology is concerned with the identification of the bio-indicators of soil quality, and the management of native micro-flora (sustainable agriculture) and/or introduction of selected strains (microbial inoculation) in order to improve soil quality (bio-remediation) and/or reduce the use of synthetic inputs (pesticides and nitrogen fertilizers) thus contributing to the improvement of food quality (residue reduction).

Selman Abraham \*Waksman was born in the Ukraine in 1888 and immigrated to the United States in 1910. In 1915 he graduated from Rutgers University. His decision to enter agriculture was guided by Jacob G. Lipman, a bacteriologist who was dean of the College of Agriculture and himself an immigrant from Russia.

In 1939 Waksman and his colleagues undertook a systematic effort to identify soil organisms producing soluble substances that might be useful in the control of infectious diseases, what are now known as antibiotics. He developed simple screening techniques and applied these to a variety of samples of soil and other natural materials. Within a decade ten antibiotics were isolated and characterized, three of them with important clinical applications: actinomycin in 1940, streptomycin (with A. Schatz) in 1944, and neomycin in 1949. Eighteen antibiotics were discovered under his general direction. The many awards and honors that were showered on Waksman after 1940 culminated in the Nobel Prize.

M. Alexander, of Cornell University, focused his research in the areas of soil and environmental microbiology, bioavailability and aging of chemical pollutants, and microbial transformations that are of environmental or agricultural importance in natural environments. His research dealt with the bioavailability and biodegradation of a variety of toxic organic chemicals and pesticides in soils, subsoils, groundwaters, and surface waters. A variety of different issues are dealt with, including the biodegradation of sorbed chemicals, interaction between species during transformations of chemicals, find-

ing means to enhance microbial destruction of pollutants, exploring bioremediation methodologies to promote the use of introduced microorganisms to rid natural environments of toxicants, and unique problems arising because of persistence of low concentrations of organic compounds.

### Hydrology

Hydrology is the study of all waters in and upon the Earth. It includes groundwater, surface water, and rainfall. It embraces the concept of hydrological cycle.

The large volume of research in the last several decades has shown an increasing frequency of many chemical and microbial constituents that have not historically been considered as contaminants being present in the environment on a global scale. The sources of these emerging contaminants are from municipal, agricultural, and industrial wastewater sources.

Environmental hydrology aims to provide information on these compounds for evaluation of their potential threat to environmental and human health. To accomplish this goal researchers need to develop analytical methods to measure chemicals and microorganisms in a variety of matrices (e.g., water, sediment, waste); determine the environmental occurrence of these potential contaminants; characterize the myriad of sources and source pathways that determine contaminant release to the environment; define and quantify processes that determine their transport and fate through the environment; and identify potential ecologic effects from exposure to these chemicals or microorganisms. Environmental hydrology seeks to combine models of the atmosphere, land surface, or rivers, for example, into full-fledged simulated ecosystems. These simulations are critical throughout the physical and natural sciences.

Gedeon Dagan, Tel Aviv University, is a hydrologist whose main interests are the theory of flow through porous media; groundwater hydrology and water waves; and naval hydrodynamics. His research has led to the application of effective strategies for protecting and restoring groundwater, which constitutes 97% of the world's useable freshwater.

He contributed greatly in aquifer characterization and monitoring. This research is important because groundwater protection is hindered by difficulties in observing and characterizing the subsurface. Therefore, effective strategies for protecting and restoring groundwater require realistic predictions of the effects of different management options. He was awarded the Stockholm Water Prize for having established the basis of a new field within geohydrology, where contaminant spreading in the subsurface environment is determined in such a way that it accounts for heterogeneity and for biochemical processes.

Jacob Bear is professor emeritus of the Technion-Israel Institute of Technology. His teaching, research, and consulting covered the areas of groundwater hydrology and hydraulics, management of water resources, subsurface contamination and remediation, and the general theory of transport phenomena in porous media.

### Biological Plant Protection

Biological plant protection, or biological control, is concerned with the identification, screening, release, and monitoring of biological agents for long-term, cost-effective control of invading plant pests. Effective biological control is an essential element in the sustainable management of invading alien pests. Main research areas in this field include studies on the role played by insects, spider mites, nematodes, and microorganisms in reduction of plant pests and improvement of their strains and application methods for biological and integrated programs of plant protection. The goal is environmentally safe control of pests of open-field, greenhouse, mushroom house, and orchard cultures, as well as urban forest and park trees.

Ilan \*Chet, president of the Weizmann Institute of Science, Israel, was a member of the UN Panel for Applied Microbiology and Biotechnology. His research dealt with the biological control of plant disease using environment-friendly microorganisms, focusing on the basic, applied, and biotechnological aspects of this field. Prof. Chet was awarded the Israel Prize (1996) and the Wolf Prize (1998).

### Desertification and Afforestation

Desertification is a worldwide phenomenon. Land deterioration into desert-like conditions occurs in the world at the rate of 6 million hectares a year as the result both of climatic conditions and man's destructive use of the soil: failure to arrest this process endangers the vital infrastructure of a country. Combating desertification is essential to ensuring the long-term productivity of inhabited lands in arid and semi-arid regions. Desertification occurs at the transition zones between true deserts and cultivated lands. These transition zones have very fragile, delicately balanced ecosystems. In these marginal areas, human activity may stress the ecosystem beyond its tolerance limit, resulting in degradation of the land.

JNF activities are aimed at arresting the spread of the desert and improving the ecology of the area. One of the central questions troubling people concerned with the quality of life is the maintenance of a reasonable level of environment preservation in these dense urban areas. The JNF deals with this problem through planting forests around urban settlements. Through this afforestation work, Israel will be the only country to have more trees at the conclusion of the century than at the beginning! These forests enable the town dweller to have contact with nature, improve his quality of life, and create green lungs which absorb pollutants and emit carbon dioxide.

Savanization is another strategy for halting the desertification process. In the desertification process, the ecological system is controlled by sparse vegetation of bushes and green growth. In the savanization process the bushes are replaced with trees and the inferior vegetation with herbaceous growth. This involves sophisticated measures for collection of water, preservation of soil, planting of trees, and increasing natural vegetation and animal life in the area. Forests contribute to soil conservation, prevent soil erosion, act as a barrier against dust, noise and air pollution, create shade and comfortable mini-

climates, halt desertification on the border of arid zones, and contribute ecologically and globally to reducing the greenhouse effect by releasing oxygen into the atmosphere and absorbing carbon dioxide.

One of the most important agrotechnological innovations of modern times is probably the Israeli invention of drip irrigation by Simcha Blass and his son (the father conceived the idea, the son developed the dripper). Drip irrigation has many advantages over other irrigation methods and is especially suited for arid and semi-arid regions.

Blass developed a drip irrigation system for greenhouse use and in the 1960s began drip irrigation experiments in the Negev Desert. Development in capillary tubes, self-filtering systems, fertilizer injectors, and improved emitter bodies has increased the usage of these systems at an exponential rate. From 1974 to 1984, the worldwide acreage under these systems quadrupled.

Ecological responses to global climate change; the interactions between biodiversity, desertification, and climate change; and the role of individual species in the provision of ecosystem services are topics studied by Uriel Safriel. He worked on projects carried out jointly by Israel, Jordan, and the Palestine Authority, for example, as regional expert for Israel on the "Initiative for Collaboration to Control Natural Resource Degradation (Desertification) of Arid Lands in the Middle East," a joint project of Israel, the Palestinian Authority, Jordan, Egypt, and Tunisia, facilitated by the World Bank. He was head of the delegation of Israel to the Intergovernmental Negotiating Committee on Desertification.

### Environmental Law

Environmental law uses sustainability as an organizing principle to develop new strategies for the protection of land, water, and biological resources by integrating environmental laws, tax laws, development laws, and other tools. Environmental law aims to solve environmental problems and promote sustainable societies through the use of law, to incorporate fundamental principles of ecology and justice into international law, to strengthen national environmental law systems and support public interest movements around the world, and to educate and train public-interest-minded environmental lawyers.

Topics of concern in environmental law include climate change, biodiversity and wildlife, biotechnology, sustainable development, persistent organic pollutants, and human rights and the environment.

Joel B. Eisen, director of the Robert R. Merhige, Jr., Center of Environmental Law, served as counsel to the U.S. House of Representatives. He taught courses on environmental law, urban environmental law, international environmental law, environmental dispute resolution, property, and energy law and policy.

Robert J. Goldstein was director of environmental programs, Pace Law School. His publications include *Environmental Ethics and Ecology: Green Wood in the Bundle of Sticks*; *Environmental Ethics and Law*; *Environmental Ethics and Posi-*

*tive Law; Only Who Can Prevent Forest Fires?: Considering Environmental Context in Fire Suppression and Land Use; Putting Environmental Law on the Map: A Spatial Approach to Environmental Law Using GIS and Forestry Law.*

Howard Latin, of the Rutgers Law School, was involved in environmental law, international environmental law, tort law, and products liability law. Latin was an advisor to a three-year Congressional Office of Technology assessment study on "Rethinking Environmental Regulation." He is among the most widely read scholars in the environmental law field and served as a consultant for environmental groups advocating marine conservation and pollution control. He engaged in political lobbying efforts to protect ocean wildlife in the Bahamas, Western Australia, the Galapagos Islands, and the United States.

Dan Mandelker is one of the U.S.'s leading scholars and teachers in land use law. He was also a pioneer in the teaching of environmental law and state and local government law. In environmental law, Mandelker is best known for his widely used treatise, *NEPA Law and Litigation*.

### **Sustainable Development**

From conferences at Stockholm in 1972, to Rio de Janeiro in 1992, and finally to Johannesburg in 2002, the global community has embarked on a three-decade journey aimed at furthering progress towards broad global sustainable development objectives. During the course of this 30-year period, a manifold range of sustainable development issues has been discussed, debated, deliberated, and negotiated, serving as a critical call for action of individuals, voluntary organizations, businesses, institutions, and governments.

Sustainable development is defined as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (Brundtland Report, 1987). For development to be sustainable it must integrate environmental stewardship, economic development, and the well-being of all people – not just for today but for generations to come.

The Rio conference was also known as the United Nations Conference on Environment and Development, or more simply the Earth Summit, bringing together nearly 150 representatives of states including Israel who negotiated, signed, and agreed to a global action plan for sustainable development which they called Agenda 21. In addition, four new international treaties – on climate change, biological diversity, desertification, and high-seas fishing – were signed in the official sessions. Further, a United Nations Commission on Sustainable Development was established to monitor the implementation of these agreements and to act as a forum for the ongoing negotiation of international policies on environment and development.

Agenda 21 has been the basis for action by many national and local governments. Many countries have set up national advisory councils to promote dialogue between government, environmentalists, the private sector, and the general commu-

nity and include nearly 2,000 cities worldwide with their own local plans. They have also established programs for monitoring national progress on sustainable development indicators. Within this framework, one of the most successful programs which has been adopted by governments all over the world is the Man and Biosphere program. Biosphere Reserves are areas of terrestrial and coastal ecosystems promoting solutions to reconcile the conservation of biodiversity with its sustainable use. They are internationally recognized, nominated by national governments, and remain under sovereign jurisdiction of the states where they are located. The Israel National Commission for UNESCO has formed a MAB committee, though with just one Biosphere Reserve in Israel so far, Mount Carmel, these issues are receiving broader attention.

**ISRAEL'S COMMITMENT.** Israel established environmental institutions after the Stockholm conference in 1973 with the Environmental Protection Service as part of the Prime Minister's Office, in 1976 within the Ministry of Interior, and finally in December 1988 a full-fledged Ministry of Environment with district and local offices. The program was initiated by Uri Marinov, while physical planning and development was guided by Valerie Brachya as deputy director-general. In the mid-1990s the Ministry of Environment, aided by the Mediterranean Action Plan of the United Nations Environment Program, initiated a strategy for sustainable development in Israel.

The Israeli government's decision of August 4, 2002, calls for the minister of environment to report to the government on the Johannesburg Summit and on ways to incorporate the conclusions of the conference in government policy. As Agenda 21 calls for including environmental and development issues in all government decisions that have to do with economy, social policy, energy, agriculture, transportation, and commerce, it was decided that every government office would prepare its own strategy for sustainable development. Integrating environmental issues within policy decision-making calls for the gathering of information and using efficient ways to evaluate dangers and profits for the environment.

In August 2004, the Ministry of Environment presented the government with a report on the implementation of government decisions on sustainable development. The report shows that all government offices began the process of assimilating sustainable development issues, with the Ministries of Finance and Commerce first to present their strategies. Current guidelines and programs were being developed for ecotourism, educational programs for schools, and general strategies for sustainability.

Non-Government Organizations (NGO) concerned with environmental issues have played an important role in contributing to public awareness and pressure on the government to allocate more resources for these issues. Among these are the Society for the Protection of Nature in Israel (SPNI), Friends of the Earth/Middle East, Adam Teva VaDin, the Heschel Center, and local initiatives like Sustainable Jerusalem. There are a number of private foundations supporting issues

related to environment, sustainability, and education. These organizations continue to work together in promoting sustainable development policies in Israel, assisting in professional knowledge and experience. The Knesset established a Commission for Future Generations, whose responsibility is the coordination of programs at the parliamentary level.

University courses and research including sustainability are developing rapidly from the esoteric programs of the 1970s in Environmental Health at the Hebrew University to exclusive degrees in environmental sciences at all the universities attached to a variety of subjects like economics, geography, and earth sciences.

**ENVIRONMENT AND SUSTAINABLE DEVELOPMENT IN JUDAISM.** Essentially an agrarian society, certain concepts in Judaism relate more specifically to sustainability. The commandment to plant fruit-bearing trees on entering the Holy Land relates to the consideration and investment that is made for future generations. This is paralleled with the commandment of *bal tashhit* (“do not destroy”) used in the Bible with reference to the proper behavior with regard to trees during wartime (only non-fruit-bearing trees may be chopped down). The talmudic sages expanded this to forbid the destruction or damaging of anything potentially useful to man.

Another set of laws that apply in the Holy Land are those concerning sabbatical and jubilee years: *shemittah* and *yovel*. *Shemittah* refers to the seventh year, when one must refrain from working the land in order to enrich the soil and prevent exhaustion of the land. Through keeping this commandment the fields rest for one year, and products that might be produced during that time are not used. *Yovel* refers to the fiftieth year, adding the cancellation of debts to the *shemittah* regulations. It also involves the reversion of land to the original tribal structure, thus preventing large-scale concentration of land and looking after local and individual interests and maintaining sustainability.

Finally, urban laws fall under “doing good” and “preventing bad,” i.e., laws that instruct in the right way and those that relate to tort. The city had defined borders and could be extended only through a decision of the Sanhedrin. Perhaps the rebuilding of cities in the layered tel is the epitome of recycling urban land and preventing the deterioration of the immediate agricultural hinterland. The maintenance of public monuments was part of the joint responsibility of the public and private domain.

See also \*Conservation; \*Ecology.

[Miriam Waldman, Zev Gerstl and Michael Turner (2<sup>nd</sup> ed.)]

**°EÖTVÖS, BARON JÓZSEF** (1813–1871), Hungarian statesman, author, and jurist; he fought for and brought in the legislation granting \*emancipation to the Jews in Hungary. Eötvös became a member of the Hungarian diet in the Liberal opposition. In 1840 he published his classic work *A zsidók emancipációja* (“Emancipation of the Jews”) where he refuted the arguments of those who rejected emancipation of

the Jews unconditionally, as well as of those who first required the “betterment of the Jews” before they attained emancipation. Only emancipation without any prior conditions, Eötvös claimed, would improve the way of life of the Jews whose defects he did not deny, and whose assimilation he advocated in this as well as in his other writings. Eötvös was a member of the revolutionary government (1848) as minister of public instruction and religious affairs. After the failure of the revolution, he fled to Germany, from where he returned in 1851. He retired from political life and was elected president of the Hungarian Academy. With the formation of the independent Hungarian government in 1867, he once more held the same ministerial position and succeeded in having the bill on the emancipation of the Jews passed during that year. Eötvös also sought to organize the structure of Hungarian Jewry upon the principle of a unified community, without any intervention in its internal affairs. To this end, he convened a national congress of the Jews of Hungary in 1868, but his project did not materialize. Eötvös was a talented writer of fiction and in his fictional works also expressed his ideas concerning the Jews (*A falu jegyzője*, 1845; *The Village Notary*, 1850).

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[Baruch Yaron]

**EPERNAY**, town in the Marne department, northern France, approximately 19 mi. (about 30 km.) E. of Châlons-sur-Marne. During the Middle Ages, the Jewish community there was sufficiently large to occupy three streets, the Rue Juiverie, Rue Haute, and Basse Juiverie. On the eve of World War II, a small community, which was to be cruelly tried during the persecutions, existed in Epernay. In 1969, the community numbered fewer than 200.

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[Bernhard Blumenkranz]

**EPHESUS**, Greek city on the W. coast of Asia Minor, at the mouth of the River Cayster. Ephesus had an important Jewish community in the first century and its beginning apparently goes back to the early Hellenistic era. Information about it is found chiefly in Josephus, but also in Philo, in inscriptions, and Acts. What is perhaps the earliest information about the Jews of Ephesus appears in Josephus (Apion, 2:39) referring to \*Antiochus II. Josephus also mentions a decree of the consul Lentulus in 49 B.C.E. concerning the Jews. Ephesus played an exceptionally important role in the history of early Christianity, and its main importance in Jewish history is in the opposition of the Jewish community to Paul's missionary activity there. Paul laid the foundation of the first Christian commu-