



"VITAL ARTICLES ON SCIENCE/CREATION"

# impact

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## Impact #320 Jerusalem's Unique Climate

by Larry Vardiman, Ph.D.\*

### A Respite from the Cold

During the winter months in cold latitudes when blizzards spread their blankets of snow across the frozen landscape, visions of balmy, tropical beaches begin to attract the attention of many weary office workers. The thought of life in perpetual sunshine near sandy beaches and a fresh, blue ocean becomes extremely attractive. Vacations in California or Florida, or maybe even the Caribbean beckon. A major industry has developed in transporting Northerners to the sunny tropics in winter to escape the cold, wind, and snow of the north. Few vacationers consider a trip to Israel as a means of respite from these miseries, but maybe they should!

Several years ago a Jewish meteorologist from Tel Aviv University, Pinhas Alpert, began to ponder Psalm 48:1,2 which describes Jerusalem. "Great is the Lord, and greatly to be praised is the city of our God, in the mountain of His holiness. Beautiful for situation, the joy of the whole Earth, is mount Zion, on the sides of the north, the city of the great King." He found that the original word in Hebrew which was translated as "situation" is the word "*nof*." It appears only once in the whole Bible and its explanation is not straightforward. In modern Hebrew, *nof*, means environment, panorama, or landscape observed from a high elevation or from a distance. Alpert (1991) was surprised to find that one commentator suggested the word just means "climate," and that Jerusalem's climate is beautiful. This article is intended to show that Jerusalem indeed has a unique and beautiful climate—one which not only is a special blessing of the Lord on all who live there, but also to those who visit, whether for business or pleasure.

### An Ideal Combination of Sun and Rain

Most people think of Israel as a desert. They have seen pictures and drawings of caravans of camels tramping through the sand of the Sahara Desert and translate that image to Israel. They have read Bible stories about Jesus and His disciples

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walking across Israel in their sandals and the need for foot washing, the lack of water, and famine. They have seen Hollywood movies depicting the time of Moses and the Exodus in the deserts of Egypt and the lower Sinai. All these images give an impression of extremely hot, sunny conditions and very little, if any, rain.

It is true that very dry conditions exist in southern Israel in the Negev and eastward of the Jordan River Valley. However, along the central and northern coast in northern Israel near the Sea of Galilee, and along the highlands on which Jerusalem sits, temperatures are much cooler and bountiful rainfall occurs. The average annual rainfall in northern Israel and along the highlands typically exceeds 15 inches. These portions of Israel produce plentiful crops of citrus, olives, figs, and grain. Far from being a desert, this part of Israel is highly productive.

What are the conditions which create an ideal climate? Most people would say that lots of sunshine would be preferable, but only if the temperatures don't become too high. Also, the sunshine should not be so prevalent that no clouds and rain ever occur. The climate of a desert would not be considered ideal by most people because it is too dry and hot. Neither would a tropical climate be considered ideal because it is too humid. So, a mix of lots of sun with a moderate amount of clouds and rain would seem to be the most desirable.

The amount of sunshine and rain that Jerusalem receives seems to meet these criteria exactly. Figure 1 shows the amount of sunshine received at 69 weather stations around the earth on the x-axis and the amount of precipitation in millimeters per year on the vertical axis. A vertical line at 3250 hours of annual sunshine and a horizontal line at 300 millimeters of annual rainfall divide the chart into quadrants. Notice that two stations in Jerusalem fall alone in the upper right-hand quadrant of this diagram with a large amount of sunshine and a moderate amount of rain occur. The only other station which approaches these ideal conditions is Flagstaff, Arizona, which is at a considerably higher, cooler elevation than Jerusalem.

### **The Climate of Israel in the past**

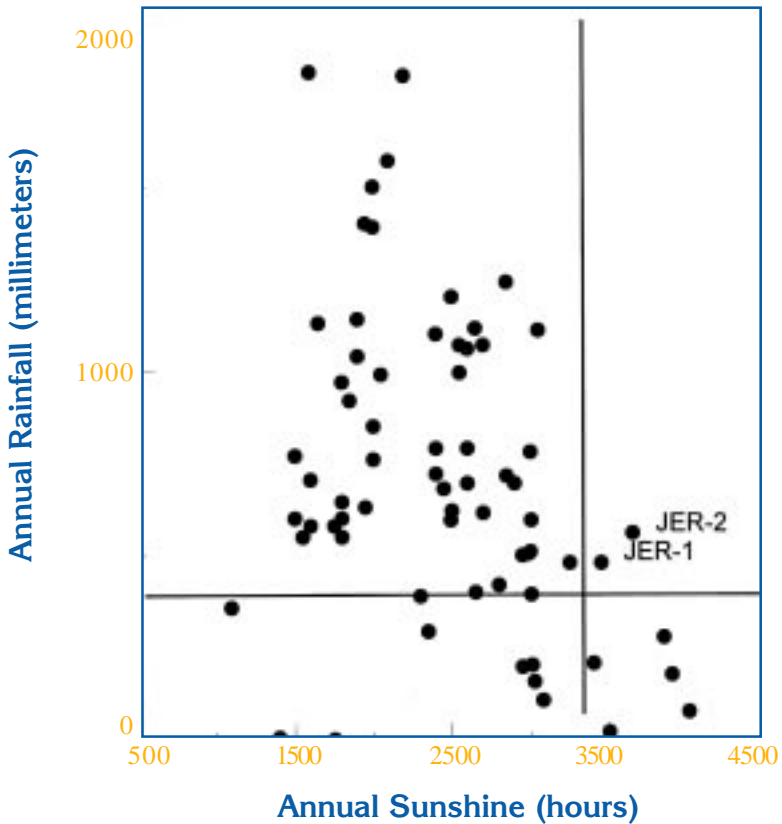
The climate of Israel may not have always been as warm and dry as it is today. Several references in Scripture would seem to imply that the land was wetter in the past and more suitable for agriculture without the need for irrigation than that which is prevalent in the Middle East now. For example,

*And Lot lifted up his eyes, and beheld all the plain of Jordan, that it was well watered everywhere, before the LORD destroyed Sodom and Gomorrah, even as the garden of the LORD, like the land of Egypt, as thou comest unto Zoar (Genesis 13:10).*

*And the LORD said, I have surely seen the affliction of my people which are in Egypt, and have heard their cry by reason of their taskmasters; for I know their sorrows; And I am come down to deliver them out of the hand of the Egyptians, and to bring them up out of that land unto a good land and a large, unto a land flowing with milk and honey (Exodus 3:7,8).*

Land-use studies throughout the Mediterranean, North Africa, and the Middle East show the prevalence of crops and forests which were suited to cooler, wetter climates in the period before 1000 B.C. (Crowley and North, 1991). Lake levels

## Distribution of Rainfall vs. Sunshine



in North Africa and throughout the Mid East were high during the “Ice Age” compared to today (Street-Perrott and Harrison, 1985). Agriculture and grasslands were common throughout portions of North Africa, which are deserts today. Petroglyphs of giraffes, zebras, and lions grazing in fields of tall grass have been found on rocky outcrops in the middle of the Sahara. Radar imagery from the space ship *Columbia* taken over the Sahara Desert shows river channels with complete tributary systems buried beneath the sand, providing evidence of greater rainfall in the past (Jet Propulsion Laboratory, NASA).

Global computer climate simulations indicate that during the “Ice Age” the climate was dramatically different in North Africa and throughout the Mid East. The ice sheets which covered North America and northern Europe caused the jet stream in

the northern hemisphere to move further south forcing the storm tracks to move across North Africa. This more southerly storm track produced a wetter, cooler climate throughout Israel (Kutzbach and Wright, 1985).

If the “Ice Age” occurred between 3000 and 1000 B.C. following the Genesis Flood, then the climate during the time of Abraham would have been considerably different from that of today. The difference would probably have been greatest in southern Israel and the Jordan Rift Valley where deserts exist today. In northern Israel and along the highlands, the difference in precipitation would not have been as great. It is also likely that climate changes would have been more extreme than today. As the “Ice Age” retreated, fluctuations from cold to hot and wet to dry seem to have been large causing an unsettled climate. This would be consistent with the droughts, plagues, and other extreme weather phenomena described in the Bible during the times of various patriarchs such as Joseph and Elijah.

### **The Difference between Weather and Climate**

Climate is the general long-term condition at a given location while weather is the day-to-day condition. Although the climate of Jerusalem is ideal, this doesn’t mean that temperature and precipitation can’t reach extreme values. For example, during the 1998 ICR tour to Israel, a strong cold front swept through Israel bringing high winds, cold temperatures, and snow. The strongest winds in over 40 years (over 50 knots) preceded the cold front and six inches of snow fell in Jerusalem following its passage. It is not uncommon for Jerusalem to experience snow every year or so even though the general climate is very pleasant.

### **Today’s Beautiful Climate**

Jerusalem today, however, seems to have a generally uniform climate and is in a specially favored location to experience an ideal climate. It is not too hot, not too cold, not too dry, not too wet. The climate in Jerusalem truly bears out Scripture which says, “Beautiful for situation, the joy of the whole earth, is mount Zion, on the sides of the north, the city of the great King” (Psalm 48:2).

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