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(Sections I - VI follow on succeeding pages)

VII. FEATURE #1 - ANNUAL POETRY SECTION

The Man Against The Sky

Between me and the sunset, like a dome
Against the glory of a world on fire,
Now burned a sudden hill,
Bleak, around, and high, by flame-lit height made higher
With nothing on it for the flame to kill
Save one who moved and was alone up there
To lom before the chaos and the glare
As if he were the last god going home
Unto his last desire.

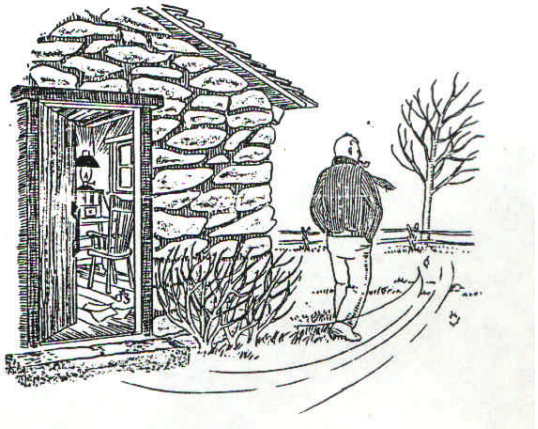
Dark, marvelous, and inscrutible he moved on
Till down the fiery distance he was gone
Like one of those eternal, remote things
That range across a man's imaginings . . .
- Edward Arlington Robinson

Unwarmed by any sunset light
The gray day darkened into night,
A night made hoary with the swarm
And whirl dance of the blinding storm,
As zigzag, wavering to and pro,
Crossed and recrossed the winged snow:
And ere the early bedtime came
The white drift piled the window-frame,
And through the glass the clothes-line posts
Looked in like tall and sheeted ghosts.

To all night long the storm roared on:
The morning broke without a sun;
In tiny spherule traced with lines
Of Nature's geometric signs,
In starry flake, and pellicle,
All day the hoary meteor fell;
And, when the second morning shown,
We looked upon a world unknown,
On nothing we could call our own.
Around the glistening wonder bent
The blue walls of the firmament,
No cloud above, no earth below,
A universe or sky and snow!
- John Greenleaf Whittier

To the Thawing Wind

Come with rain, O loud Southwester!
Bring the singer, bring the nester;
Give the buried flower a dream;
Make the settled snow-bank steam;
Find the brown beneath the white;
But whate'er you do to-night,
Bathe my window, make it flow,
Melt it as the ice will go;
Melt the glass and leave the sticks
Like a hermit's crucifix;
Burst into my narrow stall;
Swing the picture on the wall;
Run the rattling pages o'er;
Scatter poems on the floor;
Turn the poet out of door.
- Robert Frost



I. COMMENTARY

In response to an advertisement in the National Weather Digest (February, 1981) and individual referrals, STORM TRACK now has more subscribers than ever before and is going out to storm fans in 17 States and Canada. In commemoration of the start of ST's 5th year, the Editor has finally reversed the ST logo to reflect a northern hemisphere climate (Please excuse the bias of a right handed illustrator over the last four years). * * * I do plan to be at the 12th annual Severe Storm's Conference in San Antonio, this January. Plan to see some of you there. * * * Hope you guessed that the "Good Humor" truck in the last, issue was an ice cream vendor. It, was a local Washington, D.C. area company, and I overlooked the possibility that you might be unfamiliar with it (Just add the words "Ice Cream" above the driver's hat, and it will "play in Peoria").

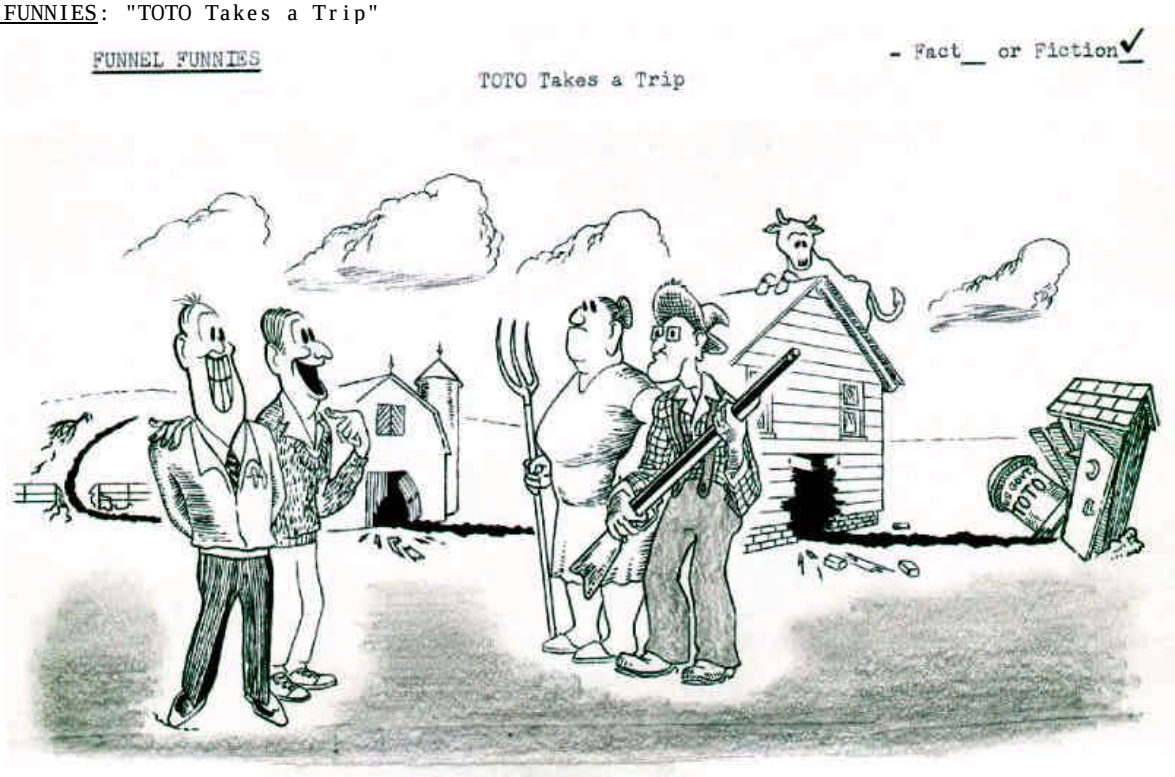
II. ROSTER

III. LETTERS TO THE EDITOR

"Our experiments with TOTO, the 400 lb. instrument capable of measuring wind velocity, pressure and temperature were successful. We got data about 1 km from the damage path of the Cordell tornado ... on 22 May, 1981 and 0.6 km from the Binger maxi-tornado. Results from this and several other events will be presented at the severe storms conference in San Antonio. Look for my picture of the Binger tornado on the cover of the pre-print volume. Also, on 27 May, 1981, we filmed an anti-cyclonically rotating bell-shaped storm along a dry line; the storm was nearly identical in structure to the one described by Weaver and Doswell in an earlier Storm Track (sans sounds). TOTO, yours truly and the OU chasers, Joe Golden and Don Burgess are tentatively scheduled for an 8 minute segment on the That's Incredible TV show in December." --- Howie Bluestein

IV. BULLETIN BOARD/COMMERCIAL MARKET -$- FOR PICTURES
V. CAMERA TIPS VI. TRAVEL TIPS

FUNNEL FUNNIES: "TOTO Takes a Trip"



Uh . . . we had nothing to do with it!
It blew off the truck.
Now, if you'll just give it back . . .

--- Dave Hoadley

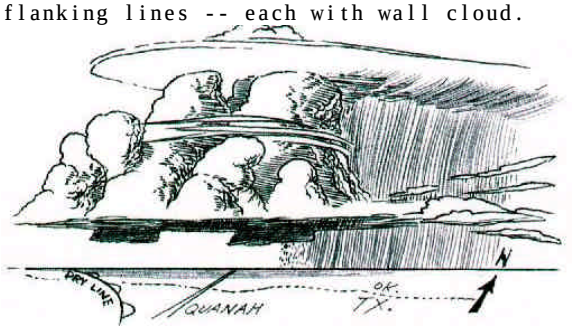
VII. FEATURE # 2

(The following is a highly summarized account of a dry-line severe storm intercept by Tim Marshall, sent to the Editor some weeks ago, and planned for presentation in more detail at the San Antonio conference. Some additional personal observations of his are included, which were not part of the conference article.)

The Mesocyclone Evolution of the Warren, Oklahoma Tornadoes

By Timothy P. Marshall - Eric N. Rasmussen

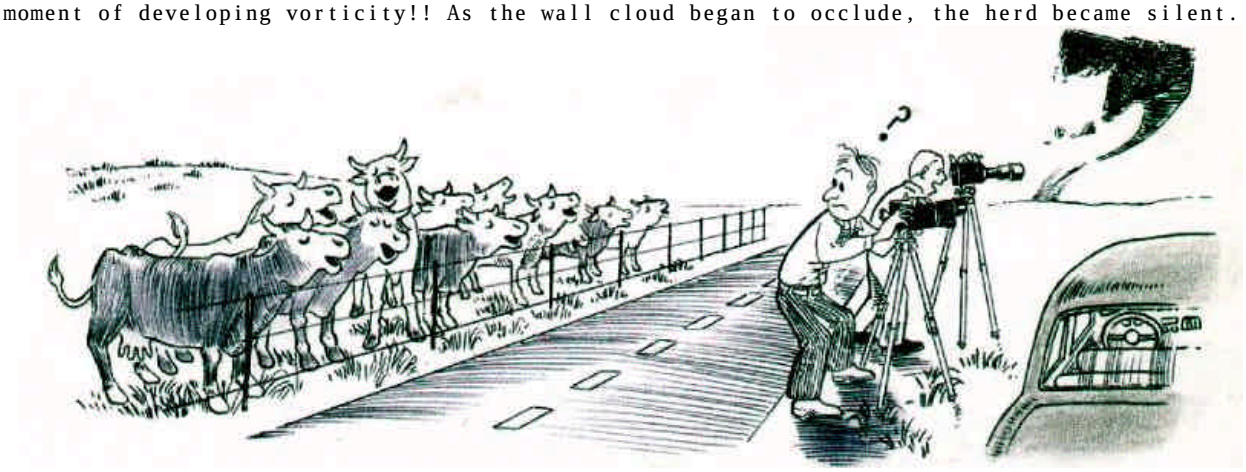
In the past three years, I've headed the Texas Tech Tornado Chase Team. We have covered nearly 12,000 miles per spring and have filmed several tornadoes. ... On the morning of April 12th, 1981, the Texas Tech Chase Team forecasted southwestern Oklahoma as the region most favored for severe weather that afternoon. We based our decision mainly on hourly changes of dew point temperatures and surface pressure falls. We left Lubbock at 1:00 PM and headed eastward. Skies were clear except for a band of cirrus overhead, extending to the northeast. ... mobile temperature and dew point, measurements were taken every five miles along the chase route. In addition, wind speed and direction measurements were taken within close proximity to the storm. These data are unique in that they crossect the dryline and sample the low level environment of the storm prior to tornado formation on both meso-beta and meso-gamma scales. By 4:43 PM, we had crossed the dryline and were chasing an isolated storm with two flanking lines -- each with wall cloud.



The east wall cloud only produced a small funnel, and then that flanking line dissipated as the western-most flank intensified. Soon we were underneath the rainfree base and noticed that every time the wall cloud started rotating, it would occlude with rain, which seemed to inhibit the updraft from organizing. By 6:00 PM, we were at our filming site, only five miles from the wall cloud, when all of a sudden a clearing could be seen wrapping around the updraft.

(At this point, Tim encountered one of those singular occasions which many of us have experienced when a seemingly unrelated and bizarre event registers a given moment indelibly in the memory.)

Meanwhile, I was unwrapping my film packet while this bull was looking at me very intently. Suddenly, he let out a loud 'Mooo,' and then hundreds of cows appeared from over the hill and lined up to oversee our chasing operations, all speaking in kind, in a most, improbable bovine symphony, at just the moment of developing vorticity!! As the wall cloud began to occlude, the herd became silent.



The flanking line accelerated rapidly eastward, and precipitation dissipated around the updraft. Large hail (up to 4" diameter) was reported in Roosevelt, Oklahoma, five miles to the NE. As the tornado touched down, it became more vertical and lasted for 10 minutes . . . nearly a half mile wide. The flanking line became stationary to our east, and a new wall cloud began to develop ahead of it, as the first tornado subsided with the evolving updraft. The storm propagated in this manner until after dusk, thru three more cycles, but, only produced funnels and no more tornadoes."

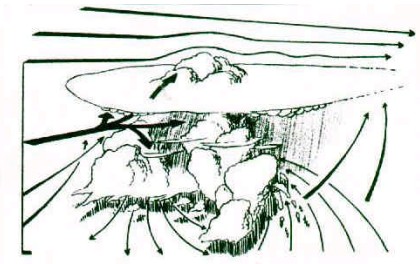
VII. FEATURE # 3

(Now, Storm Track is privileged to begin an absorbing and comprehensive multi-part series on the "History of Thunderstorm Forecasting" by John Weaver. This series is entirely John's idea and was prompted by his concern that "this very interesting and instructive progression is being ignored and slowly forgotten by the meteorological community." Mr. Weaver has invested a great deal of thought and work on the project and will endeavor to fill in this "progression" throughout 1982. ST will publish the seven part series in each of the next seven issues. The initial Part I that follows sets the general stage for a more detailed and lively accounting in future articles.

John Weaver served as a forecaster and Chase Team Leader with the National Severe Storms Laboratory in Norman, Oklahoma, where he spent several years in research thru the mid-70's. Mr. Weaver is currently working at Colorado State University on satellite related forecasting research (in association with the National Earth Satellite Service).

HISTORY OF THUNDERSTORM FORECASTING
Part I: The Early Years

By John F. Weaver



The atmosphere is a relatively thin, gaseous envelop covering an irregular, rotating spheroid whose surface is a seemingly haphazard arrangement of variously structured elements. Heating of the atmosphere occurs quite unevenly, since (1) the inclination of the earth in its orbit exposes different latitudes to unequal amounts of solar radiation, and (2) the air absorbs little solar radiation directly, but depends upon absorption and re-radiation of the sun's rays by the varied earth's surface. For these reasons, imbalances in heating occur, and the consequence of these imbalances is motion. As great quantities of cooler, heavier air slip beneath volumes of warmer, less dense air, vast turbulent currents are born. Gravity draws the cooler masses to lower levels. Varying landscapes exert different amounts of friction on the air, and orographic features split and re-split the turbulent streams. The rapidly spinning earth 'forces' its own deviation onto the flow. Finally, immense cloud systems are formed in rising moist air, which furnish an acceleration of their own to the newly born eddies. Like a child's kaleidoscope, weather patterns appear and disappear in an infinite number of variations -and one who looks at the sky and wonders 'what next?' is clearly approaching a problem of the most complex kind.

Over the centuries, man has dealt with the problem of forecasting weather through neces- sity. As man's population has increased, covering the globe with dwellings and industrial structures, the potential for weather elements to adversely affect him has multiplied. Large population centers represent a potential for natural devastation undreamed of a century ago. Yet, the science of forecasting has been slow to mature --not from lack of effort, but rather due to the intricate nature of the problem.

The following paragraphs outline what progress has been made, with special regard to thunderstorm prediction. The synopsis has been prepared in an historical context, so that one might better understand the sequence of thought which has brought us to the present point.

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Weather prediction, prior to the advent of meteorological instruments, depended largely upon climatology and weather lore. If a region had had long winters in the past, chances were that future winters would be long -- if summers had been hot, hot summers were expected in the future, and so on. This was basic climatology and probably served man from the earliest times. But as civilizations developed, the need arose for more specific information. Sailors, merchants or travelers required advance warning of inclement weather to safeguard their journeys, their cargoes, and often their very lives. Thus, a vast catalog of weather lore was created.

Weather lore served well for many centuries. Had it not, it would have been quickly discarded. One of the earliest written listings was assembled by Aratus in about, 278 B.C.; one of the most recent, official publications was the United States Signal Service's book 'Weather Proverbs,' written in 1883 for use by its observers. And, the modern meteorologist can, with a casual look and a little thought, find much substance in these listings. Let's check a few excerpts from "Weather Proverbs.'

> Mackerel sky and mares tails, make lofty ships carry low sails.
> (A mackerel sky means large regions of cirrocumulus. Mares tails are long, thin streaks of cirrus. Could this proverb be talking about the approach of an extra-tropical cyclone?)
>
> Clear moon, Frost soon.
> (Low humidity, no clouds. Most, of us are aware that this implies rapid diurnal cooling --and frost in winter.)
>
> Rain before seven, fair before eleven.
> (Sounds like this one originated in a region where most precipitation came with passing shortwave troughs –it certainly wouldn't apply on an upslope day in the High Plains.)

When the wind is in the east, 'Tis neither good for Man nor beast.
(This rule could apply equally on the eastern slopes of the Rocky Mountains, or in advance of an encrouching cyclone.)

A listing of all weather sayings would fill several volumes, and no attempt, at completeness shall be made here. The reader might enjoy obtaining a book on weather lore from the local library and trying to puzzle out the 'meteorology' behind the saying. For now, we shall simply say that many of these weather 'rules,' however limited, were often based on years of actual observation and were very often useful.

Though frequently successful in a general sense, these early methods of weather prediction fell short of ideal when used on a day to day basis, and away from the region where they had been designed. The primary weakness of these techniques was that they were simply enumerated behavioral patterns of the atmosphere (under specific circumstances), but often completely ignored the cause of these events. Success in the physical sciences comes only when accurate observations are used to deduce cause and effect relationships. Once the motivating force for an event is understood, then prediction becomes possible. But before we understand an event, we must first describe it -- and to describe it accurately, we require consistent measurements.

(Next issue -- Part II: The Instruments)

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