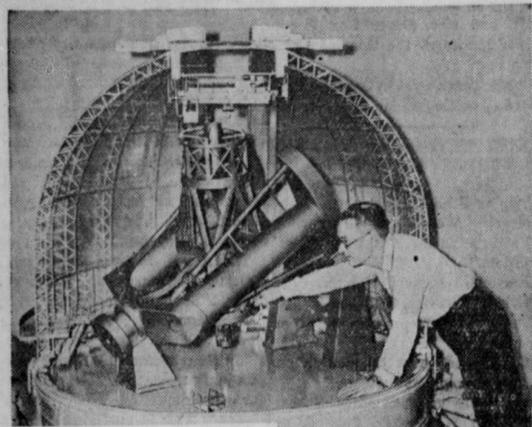


Photography, Not 'Star Gazing,' Is 1939 Astronomer's Method



Huge Glass Eyes Peer Into Space, Solving New Riddles.

Prepared by National Geographic Society,
Washington, D. C.—WNU Service.

The "eyes of the world," the great telescopes that peer out from the turning earth to explore the far reaches of the universe, are increased by one more in the new 82-inch mirror of McDonald observatory on Mount Locke in the Davis mountains of western Texas.

The completion of this giant "eye," which can photograph stars only a millionth as bright as any that can be seen by the unaided human eye, brings to a total of at least 40 the number of telescopes of two feet in diameter or more now in use in the world.

The McDonald observatory telescope is the second largest in the world in actual use at present, being exceeded only by the 100-inch telescope at Mount Wilson observatory, Pasadena, Calif. Both, however, are being surpassed by the 200-inch telescope set up on Mount Palomar, Calif., under joint auspices of California Institute of Technology and Mount Wilson observatory. The McDonald observatory is operated jointly by the Universities of Texas and Chicago.

Each Has Its Job.
The increasing size of telescopes does not mean that the various instruments will compete with one another in exploring the heavens, however, nor is a smaller telescope made out of date or useless by a larger one. There is work enough for all in probing secrets of the vast universe, and the task of exploration is divided among the various instruments.

Astronomers nowadays seldom "look through" their large telescopes. They do most of their exploring of the heavens by photographing sections of the sky. The great telescopes of modern times are primarily giant cameras. Their huge mirrors or lenses act as funnels for light, making it possible to concentrate a large quantity of star light in one spot.

By exposing a sensitive plate for several hours, or even for several nights, to light concentrated by a

telescope, an astronomer can photograph stars and galaxies of stars so distant that he could never see them with his own eyes through the same telescope if he looked a lifetime. This is because the effect of light on a photographic emulsion is cumulative, which is not true of the human eye.

Photographic Processes Improved.
The "seeing" ability of telescopes grows greater also as photographic emulsions are improved and made more sensitive. Better emulsions make the 100-inch telescope at Mount Wilson considerably more efficient today, for example, than when it was built 20 years ago, though its mirror remains the same size.

But astronomers still would know comparatively little about the universe, if they merely looked at stars and photographed them, even with the largest telescopes. The light that is concentrated by the giant mirrors and lenses is not only photographed directly, but is also broken up into its spectrum of different wave-lengths. By analyzing the spectrum of a star, astronomers in many cases can learn an amazing number of things about it—its distance, mass, brightness, temperature, size, speed of rotation, and even sometimes the approximate number of atoms it contains.

Just the other day, Lawrence Tibbett's Uncle Bert gave him the shotgun which had dropped McKinney. The boy had a hard scramble, getting an education and helping support his widowed mother and, at long last—speaking in the manner of the house of Windsor—here's another distinctive American touch—Lawrence Tibbett is the first American singer to gain fame without European training.

Betty Lee Tibbett, his sister, taught him his first songs, and how to play the piano. Joseph Dupuy, the southern California tenor, was his first professional teacher.

Takes on a 'T' And Luck Does A Happy Turn
He knew he had a voice, but was determined to be a Shakespearean actor. However, his fame as a singer grew in Los Angeles, and he began studying with Frank LaForge in New York. On January 2, 1925, he stole the show from Scotti, in Verdi's "Falstaff."

The record shows one score for the numerologists. His luck wasn't so good until he added another "T" to his name—it is properly Tibbett.

There's still another touch of quaint Americana in Mr. Tibbett's story. Whenever he has a headache, he walks around on his hands. He says that sluces the blood out of his head and stops the pain. Many a time, just before he was to sing a specially exacting role, members of the Metropolitan cast have seen him off stage, running around upside down. Our reception to the king and queen was necessarily routine, but they would have learned much of interest if they could have circulated in disguise like good King Alfred who burned the cakes.

THE Duke of Windsor gave the Rev. Robert Anderson Jardine a pair of cufflinks for marrying him, and the duchess sent him a piece of wedding cake.

Jardine Had but Walk-On Part on History's Stage
That was about the net return for the little vicar's defiance of his clerical superiors. As the captains and the kings depart, he's broke in Hollywood, which, some people say, is worse than being broke in Death Valley. Those who liked to think they had a ringside seat at great events projected the plump, sandy-haired little priest into history, along with the parish priest mixed up in Napoleon's divorce and marriage—an event which set up the "Black Cardinals" and set churchly hierophants wrangling ever after.

Soon forgotten was the Rev. Mr. Jardine. His lecture tour in this country was a failure. He found engagements mysteriously cancelled. He now says, "Bigotry and persecution have followed us across the sea. My wife and I hardly know where to turn, but we're fighting on. I found that America thus far is a land of promises, not of promise."

He was a low-church, Evangelical pastor in Darlington, county of Durham, working in the slums and appealing for better conditions for the Welsh miners, known as "the poor man's parson." It was King Edward's sympathetic reference to the sad plight of the miners that claimed his loyalty, even to the extent of sacrificing his living of \$2,000 a year. He had hoped to gain a living by lecturing in this country.

"People seem to shun me," he says. "I can't quite understand it." He is a rather bewildered, meager little man. He sent the duke a cablegram congratulating him on his recent peace speech, but got no reply. However, he has no regrets. He believes it was clearly his duty to perform the wedding ceremony. "If I had to do it all over again, I'd do it," he says.

Toward the interior, Alderney's fertile plateau displays a more inviting aspect. Almost in the center of the island is located the only town, St. Anne, with its well-paved streets, postal telegraph office, hotels and shops.



Map shows Alderney island and its strategic position in the English channel.

Britain Mans Old Fortress On Alderney

'Second Gibraltar' Lies In Mid-Channel, Nearer France.

Prepared by National Geographic Society,
Washington, D. C.—WNU Service.

Already tagged as a "second Gibraltar" is Alderney, of the English channel islands, as reports from London indicate that plans are under way to fortify this little island which is closer to the coast of France than to the coast of England.

Sixty miles from England at its nearest point, less than ten miles from the Normandy shore, Alderney was once described by Napoleon as "England's shield." During the Napoleonic wars and after, it was heavily and expensively militarized by the British, who also launched considerable construction on a great breakwater that was to make the island's principal harbor safe for the British fleet. This haven is on the north coast facing England.

A Rock-bound Coast.

Only about three and a half miles long and with an average of one mile in width, Alderney is something of a natural fortress in itself. With high precipitous cliffs on its south and west coasts, it looms in many spots from 100 to 200 feet above foaming seas below.

Rocks surrounding the island make navigation extremely hazardous on all but the northeast side. Between Alderney and the French mainland is a dangerous strait known as the Race, where currents and wind combine, in bad weather,

WHO'S NEWS THIS WEEK

By LEMUEL F. PARTON

NEW YORK—If the king and queen had talked with Lawrence Tibbett, after he sang for them at the White House when they visited our Capital, Tibbetts Proof they might have been pleasantly assured that they had dropped in on the America of authentic British tradition and not a parvenu nation without a past.

In the California badlands, when Lawrence Tibbett was 7 years old, his father, a deputy sheriff, cornered the bandit, wild Jim McKinney, in a Chinese joss house in Bakersfield. At that time, McKinney ranked Billy the Kid, previously the leading bad man in those parts. Shooting his way out, he killed Tibbett. Tibbett's brother, Bert, then sheriff of Bakersfield, stepped in time to land a load of buckshot between the bandit's eyes.

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NATIONAL AFFAIRS

Reviewed by
CARTER FIELD

Curious picture developed in hearing on the Mead bill to extend loans to small business . . . Dangers in the bill pointed out . . . Financing of TVA becomes four-sided question . . . European dictators jolted by the reception given King George and Queen Elizabeth in Canada and the United States.

WASHINGTON—A bit of testimony before the temporary national economic committee, put together with President Roosevelt's enthusiastic endorsement of the bill of Senator James M. Mead of New York for loans to small business, and then added to the frequently stated doctrine of the President that one of the causes of the bust of 1929 was a tremendous increase in over-capacity by our producers, unaccompanied by increased spending power to take up the slack, presents a curious picture.

It almost justifies the pessimism of Chairman Marriner S. Eccles, of the federal reserve board, as to the good that the Mead bill would do if enacted.

The curious part of the whole thing is that Mr. Roosevelt, it would seem, would encourage the same sort of increase in over-capacity by means of the Mead bill that he began deploring in his 1932 acceptance speech. He spoke then of the vast profits of the corporations in the good years, and wanted to know what had become of them. "Some of them," he declared, "have gone into increases of plant, now standing stark and idle."

His theory then, as enunciated many times since, was that if this money, instead of being put into unneeded additions to plant capacity, had been paid out in wages, or even dividends, the discrepancy between buying power and producing power would not have zoomed to the point where it produced the 1929 crash and the depression.

Reference to this testimony leads to speculation as to whether government aid to the little fellows may not work the same havoc that greed on the part of the big fellows produced in 1929.

Points Out Inherent Dangers in Mead Bill

On the stand was T. N. B. Hicks Jr. urging, on behalf of the Wyoming valley industrial development fund, of Wilkes-Barre, Pa., more liberal credit. He said there was a small silk throwing company which would buy additional machines if it could borrow cheaply.

"Are you satisfied," inquired Senator Joe O'Mahoney of Wyoming (no connection with the Wyoming valley in question), "that there is a market for the product of this company if it were enabled to acquire the machinery?"

"The company already has the business, Senator," replied Mr. Hicks. "They are already farming it out under contract."

"And not doing it themselves," said Mr. Hicks. "They want to do it in our community."

"Well, if the business is being performed on contract," continued O'Mahoney, "this financing would merely mean shifting the production from one plant to another plant."

"Yes," said Mr. Hicks, "for all practical purposes. It means, on the other hand, in our particular community, three hundred jobs, Senator."

"But," retorted O'Mahoney, "three hundred jobs in your community taken away from some other community."

This is not cited by the writer to demonstrate that the Mead bill is bad, or would work harm. But it is cited to show that there are certain dangers in the Mead bill, just as there are inherent dangers in any government control of credit, or anything else, for that matter, which arbitrarily changes the lives and habits of people.

Sometimes There Are Four Sides to a Question

Sometimes there are four sides to a question, instead of only two. The authorization measure for the Tennessee Valley authority to issue \$100,000,000 in bonds to finance the purchase of the private utility properties in Tennessee seems to be such a case.

Introduced by Senator George W. Norris, it passed the senate with little or no discussion, but since then for a time has been stymied in the house appropriations committee. Actually it was held up by the coal operators. They pointed out to committee members that this was nearly twice as much money as TVA needed for paying the Commonwealth and Southern and the Electric Bond and Share for the properties of their subsidiaries.

"What," they demanded, "does TVA need with the forty odd millions in excess of that amount?"

The inference taken by the coal people of course was that TVA would build additional hydro electric plants. That is where the coal interests come in, for obviously every time a hydro plant is built just that much of coal market departs forever, no matter how the resulting electricity is used.

Behind the scenes the private utility folks have been in a quandary. Naturally they have the same interest as the coal people in preventing, if possible, further invasion of the electric field by the government. They are especially close to the coal people in their interests since most of the private utility executives now figure that current can be produced more cheaply from coal, by using modern methods than it can be produced by water power, if due allowance is made in computing its cost for interest on the cost of the hydro electric plant, and for taxes.

Which brings in another angle; for the state, county and municipal governments in Tennessee were anxious to force a provision into the bill which would require the TVA and the local agencies set-up for public distribution of electricity to pay into the state and local treasuries the same amount of money each year which they would have paid had they continued.

Don't Like to Have Public Power Systems Handicapped

This is a sore point with the public ownership advocates. They do not like to have the public power systems handicapped with this charge of taxes. Naturally the private utility people are keen for it, contending that no "yardstick" approaches fairness unless this is included. In fact taxes and a comparable amount of interest are the two chief advantages which public electric systems have had over private systems in fixing low rates.

David E. Lilienthal pointed out in the TVA special committee hearings at Knoxville last summer that the government could borrow money for 2 per cent while private enterprise would have to pay much more. But private utility men have been contending ever since this is only part of the story—that in fixing rates the TVA has made no charge whatever for the millions of dollars interest every year the taxpayers have to pay for the cost of the TVA project. Also that in local public ownership systems 45 per cent of the cost would be a free grant from PWA, with the other 55 per cent at a low rate of interest.

But the utility people would like to see government money actually paid for the Tennessee properties, and the stupid possibility of competition between private and public ownership systems prevented. So they would like to see the bill passed, with certain amendments. The coal people don't care much about the amendments, but want them written in if the bill is to pass.

Reception of British Rulers In Canada Jolts Dictators

Whether British Prime Minister Chamberlain "planned it that way" may never be known, but the visit of the king and queen to Canada may easily have stayed the hands of Mussolini and Hitler for some time to come.

The reports of the tremendous ovation which their majesties received from Quebec to Vancouver and back must have surprised and startled the foreign offices of Berlin and Rome as much as they did the Canadian politicians. There is no speculation about this. Eminent political leaders of all parties in Canada frankly said so to visiting American newspaper men.

In short, the greeting of the Canadians, no matter what was the mother country to their own fathers and mothers, put an entirely different face on the probabilities as to what Canada would do if Great Britain should become involved in a war.

It is a truism in politics, certainly in the United States and probably in Canada, that it is not the truth which is important, but what people believe. Carrying on the thought a bit further, it is not what the people believe which is really important—in between elections—but what the politicians they have elected to represent them think the people believe.

Mental Attitude of Crowds Big Surprise of Visit

British and American newspaper men on the "pilot" train which ran away—until it neared Washington and developed trouble—a little ahead of the royal train, were amazed at the outpourings. They would be told, not only by the Canadian officials, but by their Canadian newspaper colleagues, that this particular town would not be worth while—that it had been kept on the schedule through a mistake, and that only a few hundred people could possibly be there.

Then they would arrive and the whole surrounding countryside would have apparently turned out, for there would be thousands.

Even more important, it was the mental attitude of the crowds which had been appraised even more accurately in advance. Their majesties had been warned not to expect too much. The people in one community, they were told, would be mostly Scotch, and hence dour and cold, though pleasant, while in another community most of the people would be Poles, Germans, Russians, etc., who could not be expected to be too enthusiastic.

(Bell Syndicate—WNU Service.)

Floyd Gibbons' ADVENTURERS' CLUB

HEADLINES FROM THE LIVES OF PEOPLE LIKE YOURSELF!



"When Clocks Stopped"

HELLO EVERYBODY:
Bryan Carlock of Bloomington, Ill., is one man who knows exactly when his adventure started. Other folks may be a little vague about the exact hour and minute of their life's biggest thrill.

When death is staring you in the face, you don't stop to look at your watches and say, "Ho, hum, if I don't get out of this mess pretty quick I'll be late for dinner." Neither did Bryan, for that matter. But he knows the time.

He knows it because, when the blow struck, all the clocks and watches stopped. It was the end of time. The end of the world! The end of everything! The day was March 10, 1933, and Bryan had arrived in Long Beach, Calif., just that morning, to visit his sister, who was married to an army officer, Lieut. Chester Linton.

She and Bryan had gone down town in the afternoon and returned home at 5 o'clock. The clocks and watches stopped at exactly 5:55!

In the meantime, they were busy getting dinner ready. Chester Linton had come home. Sis was in the kitchen making salad and biscuits. Potatoes were boiling on the stove and the roast was in the oven. The rest of the family was in the living room. Bryan was reading and the children—a girl and three boys—were playing on the floor.

Sis came in and said, "Are you all hungry? Dinner will be ready in a few minutes." And then—

The Building Began to Rock and Sway.

And then—terror! The words were hardly out of his sister's mouth when the building began to sway and rock. There was a roar that sounded like thousands of firecrackers exploding all at once. Tables and floor lamps fell over. Plaster crashed down from the ceiling, and the floor bulged upward and burst open.

Says Bryan: "I thought the world was coming to an end. The whole house was rocking like a boat. I couldn't get my voice for a moment,



When we couldn't run any more, we walked.

and when I did, I cried out, 'What is it?' Then I heard Chester say, 'Earthquake! Get out!' As he said it, the wall beside him crumbled and fell out into the street."

The apartment was on the second floor of a brick building at the corner of Broadway and Linden. They started for the stairway, and Bryan says when he reached it it was moving like an escalator. Sis and the kids were safely at the bottom. The lieutenant was behind him. Bryan was half way down that tottering stairway when his foot went through a broken step and caught there.

He struggled to extricate himself, but the harder he tried, the tighter he seemed to be wedging himself in. Now, the lieutenant was at his side, trying to get him out. Plaster was still falling from the walls and ceiling. At last the lieutenant got him loose, and they ran out into the street.

Across the Street a Neighbor Was Killed.

On the other side of the street, a neighbor was lying dead on the lawn—a great chunk of cornice beside him. He had run out of his home at the first shock of the quake, just as the cornice fell, and it killed him. The whole neighborhood was in confusion. Some men were carrying a woman into the bungalow next door, her leg torn and bleeding.

And then, another terrible cry was passed from mouth to mouth through the stricken area. "Tidal wave coming!" "We were only three blocks from the ocean," says Bryan, "and we took the kids and began running inland. We had had nothing to eat. The roast and potatoes and other food back home had been blown against the north wall of the kitchen.

When we couldn't run any more, we walked. We went on that way for two or three hours, through streets filled with debris and ruin and desolation. Before long, the city was under martial law. About eight or nine o'clock we struck a place that hadn't suffered quite as badly as other sections of the town. They were serving soup, sandwiches, coffee, etc., so we stopped and had something to eat."

They were all exhausted by this time. There was still no sign of a tidal wave and, tidal wave or no tidal wave, Bryan wasn't going to go a step farther. They held a council of war and decided to return to the neighborhood of home.

They wandered back toward the ocean and, within a block of the Lintons' wrecked house they found an apartment building which was still in pretty good shape, and managed to get shelter for the night.

Bryan Noticed His Foot Was Damp.

For the first time, then, Bryan noticed that his right foot was damp. He pulled up his trouser leg and found the foot covered with blood. There was a nail in the calf of his leg. Evidently it had been thrust there when he got caught in the broken stairway.

"There was a doctor in the house," he says, "and he dressed the wound. I was walking like a drunken man, and the doctor told me I was 'earth shocked.'"

The tremors continued all through the night. They stayed in the apartment house, but in the morning they had to move on, for the city's mains had been broken and there was no gas or water. They went to City Hall park, where relief work was getting under way, and there they were put into a truck and sent to Lennox, about 12 miles from Los Angeles where a woman's club had been turned into a dormitory.

"They gave us medical attention there," says Bryan, "and a lot of us needed it. A lot of the women were hysterical. One of the nurses there had been in hospitals in France during the war and had been bombed by the Germans, but she said it didn't affect her nearly as badly as the quake did."

"Our little group got off easily. My sister and her little girl had been hit by plaster and the three boys had their legs skinned. The lieutenant had had the presence of mind to hold a chair over his head, and he escaped without a scratch. But the thing that saved us all from death was our delay in getting out of the house. If we had gone out while the debris was still falling we would have met the same fate as our neighbor across the street."

(Released by Western Newspaper Union.)

College Graduates and Divorce

The divorce rate among college graduates is low, compared with the rate of the country as a whole. In a study made by the office of education of 46,000 alumni over the period from 1928 to 1935, there were 19 divorces per 1,000 marriages. More college women than college men are divorced.

Head-Hunting Persists

Head-hunting is still being practiced. The best-known case of this in present-day times is represented by the Jivaro of South America. There is also good evidence that in spite of governmental pressure, isolated cases of taking heads still occur in remote parts of the Philippine islands and in Borneo.