

SCIENCE NEWS

*Science Service, Washington, D. C.*COMET LOST FOR PAST TWENTY YEARS
FOUND AGAIN

A COMET lost for the past twenty years has been found by Dr. George Van Biesbroeck, of the Yerkes Observatory, observing at McDonald Observatory in southwestern Texas. It is comet d'Arrest, not seen since 1923, which inadvertently helped the amateur astronomer, Leslie C. Peltier, of Delphos, Ohio, to find the comet Diamaca last month. Dr. Van Biesbroeck himself had asked Mr. Peltier to look for comet d'Arrest, and it was just after giving this up as a hopeless task that Mr. Peltier picked up the comet.

In a wire to Harvard College Observatory, Dr. Van Biesbroeck gives the magnitude of the new comet as the twelfth, making it too faint to be visible without telescopic aid, hence of interest only to professional astronomers.

Its position, right ascension 20 hours, declination minus 28 degrees, places it so far south of the celestial equator that Mr. Peltier's inability to find it is not surprising. From McDonald Observatory, however, the comet appears at present much higher in the southern sky, a fact which must have facilitated Dr. Van Biesbroeck's re-discovery.

Inasmuch as the orbit of comet d'Arrest had long since been predicted, astronomers knew fairly well where to look for it, but it appears to have passed close to the sun about two days ahead of schedule.

At the request of Dr. Van Biesbroeck, Mr. Peltier had spent several evenings in search for comet d'Arrest, lost since 1923. When his search appeared fruitless, Mr. Peltier resumed his regular program of comet seeking on the night of September 18, with fortunate results. Half an hour after he stopped looking for comet d'Arrest he observed a faint, ill-defined object in the constellation of Draco. Five minutes of watching through his telescope clearly showed the motion of this comet, a new one for Mr. Peltier, although it had been discovered by Diamaca, a Rumanian, some nine days earlier. However, Mr. Peltier's find was extremely important, as he was the first American to see the comet since news of its discovery had been received at the Harvard Observatory several days earlier. It is possible that he made the only observations of the comet from the Western Hemisphere, for he reports that by September 22 its magnitude had dropped from tenth to thirteenth, making it very difficult to locate.

Mr. Peltier states that the Diamaca comet was somewhat brighter at the center but without any suggestion of nucleus or tail. His observations confirmed the path of the comet as indicated by the original discoverer, although its motion was exceedingly rapid. This, and the rapid fading of its light, explain why the comet proved so elusive. However, European astronomers observed it well enough for an orbit to be computed. From this it appears that the comet is already on its way out into the depths of space, having passed nearest to the sun on August 21.—CHARLES A. FEDERER, JR.

THE COAL SHORTAGE

RESERVE coal stock piles are reported low in various sections, and low temperatures may result in many homes this winter unless increased production and shipments meet the daily needs. Even the quota allowed to retailers by government officials, 90 per cent. of last year's supply, may not be available in certain communities.

The reason is a coal shortage which will probably grow worse as the activities incident to war continue to expand, unless production can be increased. For a substantial period the production has fallen below the level of national requirements.

The best proof of this statement rests in the fact that in the period from January 1 to September 1 of this year, consumers' stock piles of bituminous coal were reduced from 85,889,000 tons to 75,292,000 tons. Production in that period lacked 10,597,000 tons of equalling requirements, and the difference had to be made up from reserves. That is only half the story. During the same period last year stock piles were increased by nearly 20,000,000 tons as protection against future requirements. This year, instead of building up reserves, production did not meet current needs and consumers were forced to burn stock piles intended for future use.

In September, 1942, it was estimated by the Federal Solid Fuels Administrator that 600,000,000 tons would be needed for 1943. Consumption so far shows this estimate to be close to the mark. Production as of October 1 was a little less than 445,000,000 tons. Even without strikes it would be a practical impossibility to reach the 600,000,000 goal now.

The anthracite situation is even worse than the bituminous coal situation. It was estimated at the beginning of the year that 65,000,000 tons would have to be mined to meet all requirements. This is an increase of 10 per cent. over production the previous year. Actual increased production to date is less than 1 per cent.

Anthracite is the number one household fuel in the North Middle Atlantic States, and large quantities are used in New England, although fuel oil was the most used fuel there in normal times. New England now is reported to be in a bad situation, with many communities whose local stock piles are exhausted.

The price factor does not enter into the present coal situation to any considerable extent. Ceiling prices established by the Office of Price Administration permitted an increase of about 25 cents a ton for bituminous coal and 50 cents for anthracite to meet mining adjustments. Otherwise there is little change from the prices of last year.

REMEDIES FOR UNPLEASANT NOISES

If noise gets on your nerves, a few things that you can do about it are suggested in a report by Dr. Carey P. McCord and John D. Goodell, of Detroit, which appeared in the *Journal* of the American Medical Association.

If the loud ticks of a watch on a tabletop keep you awake, hang it up and you may be unable to hear it. The principle involved is that the tabletop acts as a sounding board and amplifies the noise of the watch.

The public needs to be convinced that noise is unnecessary. Many law-abiding citizens, who would not contemplate the sending up of a rocket flare on a public street, or turning a flood light on an apartment house to attract the attention of a friend, will unhesitatingly blanket a house or an entire block with resounding noise from a badly designed automobile horn. Automobiles should have horns that do not frighten people with shrieking noise, the report suggests. Just as it is possible to train a dog to wag his tail when he hears a pleasant word, so human beings could be educated to respond to a simple non-irritating sound as a danger warning. Use of a mellow horn on modern diesel locomotives instead of the shrill steam whistle of past years was cited as such an advance.

Sound reduction and air conditioning are closely allied as in the modern air-conditioned trains and buildings. By eliminating the necessity for open windows for ventilation, it is possible to exclude almost all exterior noise. Relatively quiet operations or devices may be substituted for those causing noise in some cases. Examples are: Use of welding instead of riveting in building, use of light signals instead of telephone bells and other noisy devices intended to attract attention. Installation of acoustic material on the walls or elsewhere, such as the increased use of carpets, wall hangings and drapes, is also useful in noise control.

These and further measures were suggested in the report of the Committee of the American Medical Association's Study of Air Conditioning for the purpose of showing that much current noise is needless; that effort against noise is a widely neglected but legitimate portion of over-all warfare; that methods of noise control are practical and no longer technically mysterious; and behind some of the more publicized evils of the day, such as wilful absenteeism, may be found the insidious disturbances from noise.

TOOTH DECAY

EVIDENCE that one dream for the post-war world, freedom from tooth decay, is very likely to come true through use of fluorides in drinking water has appeared in reports by Dr. H. Trendley Dean, of the U. S. Public Health Service, and Raymond J. Faust, assistant engineer of the Michigan State Department of Public Health.

"Carefully made epidemiological studies by the U. S. Public Health Service," Dr. Dean reported to the New York meeting of the American Public Health Association, "show that school children using domestic waters containing as little as one part per million of fluoride experience only half to a third as much dental decay as comparable groups using a water that contains no fluoride. Lake Michigan, the Ohio, Mississippi and Potomac rivers are illustrations of fluoride-free waters, but of course there are many more. Far-reaching mass control of dental decay in large population groups begins to loom up as a distinct possibility."

The amount of fluorine necessary to stop dental decay is not enough to cause the disfiguring mottled enamel that is found among users of water with higher fluorine concentrations. In fact, it is no more and in some cases less than the amount in water supplies now used daily by more than a million people in the United States.

Dr. Dean added one word of caution: Communities should not be hasty about adding fluorine to their water supply until careful studies show the safety of this measure in relation to other aspects of community health.

On the practical side, adding fluorine to public water supplies should not prove difficult or expensive, according to Mr. Faust. It could be done with chemical feeding equipment of the type already in use and familiar to water plant operators. The cost per person per year would be about seven and one-half cents. For a family of four the cost per year would be about 30 cents. A simple, accurate color test must be developed, so that water plant operators with little technical education could routinely check the water to make sure the right amount of fluorine was being fed into it.—JANE STAFFORD.

ITEMS

THE daily weather map, with its old familiar isobars and isotherms, plus the newer symbols indicating the location and nature of air masses, will be available again, according to a report of the U. S. Weather Bureau in response to a Science Service query. Security questions are now being cleared up with Army and Navy authorities. It is felt that with recent easing in the U-boat situation, weather information can be distributed in this way, as well as through press and radio, without giving out information useful to the enemy. It might become necessary to renew the restrictions, but at present this does not appear to be too serious a prospect.

THE sun can actually appear rose-colored instead of golden, and this isn't just a trick of the imagination. When a large cloud of nearly transparent dissipating smoke comes between the sun and observer, it may take on a rosy tint, according to an article by Dr. C. C. Wylie, of the University of Iowa, printed in *Popular Astronomy*. Through dust, the sun's image appears colorless or yellowish, and through haze it may even appear bluish. When projecting an image of the sun on a piece of white cardboard with a 5½-inch refracting telescope, Dr. Wylie and a group of students were surprised to see the entire image of the sun turn to a distinct rose color, the entire disk being uniformly colored.

WILD guayule shrubs are being gathered in southwest Texas by the U. S. Forest Service to contribute to the natural rubber supply needed by the armed services. The quantity which can be collected is small, but it will help. The shrubs will be processed in the government guayule plant in California. The general area from which the guayule is now being gathered once produced a commercial rubber which was processed in a guayule mill at Marathon. It closed in 1926. Some 2,000 tons of shrubs, it is estimated, may be secured now in rough country surrounding the area harvested for this mill.