SUN OFFERS FOOD AND FUEL; HOPE TO TAP IT SOON

Hardship Is Due for All Mankind If Effort Fails, Belief.

By David Dietz
NEA Service Writer.

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The future happiness of our great-grandchildren lies in the sun. This is the opinion of leading students of the population problem. These students see a world in 100 years or so which will be crowded to capacity unless science comes to the rescue with new ways of feeding it and furnishing it power.

Without these new methods, the world will be filled when the population reaches 5,200 million. With the new methods, a population of 10,000 million would not be crowded.

And it is in the sun, scientists believe, that salvation lies.

The scientist hopes to make direct use of the sun's energy.

Food From the Air

Many studies are now under way to learn how this may be done.

The process by which trees and plants grow has been named photosynthesis. The plants, with the aid of sunlight, take the carbon dioxide out of the air and turn it into the carbohydrates of their tissues.

An intensive study of photosynthesis is going on at the plant physiology laboratories of the Carnegie Institution. Dr. D. T. MacDougal is director of these laboratories, at Tucson, Ariz., and Carmel, Cal.

Eventually, it is hoped it will be possible to duplicate the process.

When that day arrives, it will be possible to build food factories out on the deserts where the sunlight is strongest.

The scientist also hopes to utilize more directly the energy of sunlight.

Sun Pumps Water

Near Cairo, Egypt, a solar engine is being used to pump water from a well. It is a steam engine. Mirrors concentrate the sun's light on the boiler and heat its water to the boiling point.

At Mt. Wilson, Cal., Dr. C. G. Abbot built what he calls a solar cooker. It is a stove which utilizes the sun's energy. The top of the stove is a reservoir of oil. The oil flows down through a pipe which lies above a curved mirror.

The mirror centers the sun's rays on the pipe, heating the oil inside. The apparatus is so arranged that the heated oil com sain at the top of the reservoir. As a result sufficient heat is obtained to make cooking possible.

Other Sources

There are also other sources of energy which the scientist hopes to tap eventually.

A study of the electricity in the earth's atmosphere is being made. It is known that atmospheric electricity reaches a potential of about a million volts at a few miles above the earth's surface.

In other words, the air is full of electricity. The scientist hopes some day to find a way to get it out.

Another possible source of energy lies in the atoms of matter. Astronomers feel certain today that much of the energy of our sun is due to the transformation of hydrogen into helium within the sun.

They think that if we could find a way to duplicate that process the energy released by turning a pint of hydrogen into helium would be sufficient to drive an ocean liner across the Atlantic.

Wise Cracks Slap Back at Al Jolson

By United Press

NEWPORT, R. I., July 2.—Al Jolson, blackface comedian, will play an indirect role in the Budlong divorce case when trial is resumed here, Tuesday.

When Mrs. Milton J. Budlong barricaded herself in her husband's New York apartment last year and tossed messages, pinned to her husband's shirts, into the street, Jolson commented humorously on the incident from the stage.

He will explain his references in a statement scheduled to be read to the court, Tuesday. Budlong, suing his wife for divorce on the ground of extreme cruelty, claims he was deeply hurt by Jolson's fun.

FEED SUBSTITUTE

By the addition of calcium carbonate, prairie hay can be substituted for alfalfa in cattle fattening ration, according to an experiment reported to the Kansas Agricultural College.

The bone frame of the average whale weighs about forty-five tons.

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Today's Best

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WAHG, Richmond Hill (316 M.), 8 P. M., Eastern Daylight—Organ recital by Maurice Garrabrant.

WLS, Chicago (345 M.), 9 P. M., Central Daylight—Stephen Foster song program.

WBAL, Baltimore, (246 M.), 9 P. M., Eastern Standard—City park orchestra.

KOA, Denver (322 M.), 8 P. M., Mountain Standard—Municipal band concert.

WGY, Schenectady (380 M.), WMAK, Buffalo (258 M.), 7:15 P. M., Eastern Standard—WGY players.

Radio Programs

5:30 P. M.—WTAM—Orchestra.
6:00 P. M.—KYW — Music. WCAP — United States Navy Band. WDAF — "School of the Air." WEBH—Orchestra; concert. WJZ—Sundial Orchestra; Bonnie Laddies. WJR—Orchestra; soloists. WLIB—Dinner concert; "Almanack." WLS—Lullaby Time; violin; harp. WMBB—Artists; home songs. WORD—Musical program. WQJ—Orchestra, vocal.
6:15 P. M.—WCOO—Dinner concert. WGN —Paul Ash's Show. WGY—Play, "The Anti-Banters," also WMAK.
6:30 P. M.—WEAF—Concert. WJR — Music.
6:35 P. M.—WGHP—Children's chat.

Dancing

7:30—WEEI, WHAS.
8:00—WBBM, WEBH, WPG, WTIC.
8:30—WJZ, WMC, WOO.
9:00—WADC, WCX.
10:00—KTHS, WEEH, WTAM.
11:00—WENR, WGHP, WHO, WSM.
11:45—WDAF.
12:00—WQJ.

8:50 P. M.—WADC—Story man. WOAW —Orchestra.
7:00 P. M.—KFNF—Sunday school. KFH —Music. KYW — Artists. KDKA — Stockman-Farmer news. KMOX—Orchestra; entertainers. WADC—Studio. WAHG—Baritone; violin. WBBM—Safety play. WBAL—Soprano; violin; piano. WCAU—The Reginas; Jolly Four; songs. WCAP—Markets; science talk; studio program. WENR—Moody Hour. WDAF—Orchestra; to WOO. WEEI. WGBS—Music. WGN—Music. WGY—Studio. WHB—Orchestra. WJZ —Music. WLIT—Program. WLS — Surprise Time; dance. WMCA—Orchestra; serenaders. WMAQ—George Simons, tenor. WNYC—Concert program; talk. WPG—Concert orchestra. WRNY—String quartet. WSM—Bedtime stories; trio. WSOE—Dinner music. WTAM—Orchestra. WWJ—Orchestra; soloists.
7:30 P. M.—KDKA—Concert. KOA — String orchestra. WAHG—Mixed quartet. WBAP—Concert. WOAF—Studio. WCCO—Josh Gray. WEEI—Musical Chefs. WGR—Beautiful. WGHB — Organ. WHAS—Orchestra. WHO—Orchestra. WMAQ—Trio. WOC—Theater. WMC—Clinton Choral Club.
7:45 P. M.—WRNY—Ensemble. WSOE —Mass singing.
8:00 P. M.—KMOX — Orchestra; light opera. WSO—Joy Makers; talk. WAAM —Dance music. WAHG—Trio; dance. WBBM—Harmony Time. WBAL—City Park Orchestra. WCAU—Songs. WEBH —Orchestra; soloists. WENR—Popular songs. WEAF—Music to WEEI. WCAP. WTAM. WGN. WJAR. WTAG. WOAE. WOO. WDAF. WCCO. WWJ. WOC. WGR. KSD. WCSH. WGBF Program. WJAZ—Studio; dance. WJR —Orchestra. WLIT—Morning Glory Club, orchestra. WHAS—Male quartet. WHO—Vocal and instrumental. WLS —Stephen Foster Anniversary. WPG—Dance. WSM—Ensemble singers. WSB —Concert. WTIC—Orchestra.
8:15 P. M.—WRNY—Novelty night.
8:20 P. M.—WOS—Varied program.
8:30 P. M.—KFAB—Out-of-town artists. KOA—Sunday school. WBZ—Orchestra. WCAP—Studio. WCAU—Musical architects. WCCO—Music. WDAF — Varied music. WEAF — Orchestra. WEEI—Orchestra. WFAA — Schubert Choral Club. WGY—Orchestra; cornetist. WGR—Soprano; tenor. WGN — Phantom violin. WHAD—Music. WHN —Music; orchestra. WJAD—Music. WJZ—Orchestra. WLIT — Rufus and Rastus. WMC—Orchestra. WMAK — Music. WOC—Baritone; tenor. WOO —Dance. WPG—Dance. WBVA — Edgeworth Party Night. WTAM — Studio. WTIC—Mail Bag; The Debutants.
9:00 P. M.—KMA — Popular program. KOA—Denver Municipal band. KFNX—Music. KMOX—Soloists; scores; talk. KTHS—Scores; organ; ensemble. WAHG—Dance. WADC—Dance. WCX —Dance. WEAF—Dance. WGN—Sam 'n' Henry; music. WGR—Lopez Orchestra. WGHP—Entertainers; dance band. WJJD—Studio. WJAR—Dance. WLIT —Music. WLS—Ford and Glenn. WMCA—Music. WOAW—Puritan Hour. WOK—Theater; popular program. WPG —Organ. WQJ—Orchestra, vocal. WSOE —Revue.
9:15 P. M.—WHT — Features; Sunbeam Girls.
9:30 P. M.—KYW—Carnival. WBAP — Music. WCO—Tourists' bulletin.
10:00 P. M.—KTHS—Dance. KFI—Organ. KMOX—Music Lovers' Hour. WEBH—Dance. WHT—Sport gossip. WHN—Silver Slipper Revue. WLIB—Dance; popular program. WLS — Organ. WMCA—Entertainers. WSM — Studio. WTAM—Dance.
10:05 P. M.—WCCO—Dance.
10:30 P. M.—WSM—Organ.
10:45 P. M.—WSB—Concert.
11:00 P. M.—KFI — Hawaiian music. WENR—Frolic. WGHP — Orchestra. WGBF—DX Club. WHT—Your Hour League. WHO—Orchestra. WMC—Orchestra. WSM—Orchestra.
11:30 P. M.—WJJD—Settin'-Up Hour.
11:45 P. M.—WDAF—Nighthawk Frolic.
12:00 M.—KFI—Ballad Hour. WQJ — Popular program.

Wave Lengths

KDKA	309	WCAR	263	WJZ	455
KFAB	340	WCBD	345	WKRC	326
KFDM	316	WCCO	416	WLIB	302
KFJR	268	WCX	517	WLIT	395
KFI	409	WDAF	366	WLS	345
KFKX	288	WEAF	492	WLW	422
KFNF	263	WEAR	399	WLWL	288
KFUO	545	WEBH	370	WMAQ	448
KGO	361	WEBJ	273	WMBB	250
KGW	492	WEEI	349	WMC	500
KHJ	405	WEMC	286	WNCA	341
KJR	384	WENR	265	WNYC	526
KDLS	441	WFAA	476	WOAI	395
KMA	252	WFBM	268	WOAW	526
KMOX	280	WFI	395	WOC	484
KNX	337	WGES	250	WOK	274
KOA	322	WGHP	370	WORD	272
KOIL	278	WGN	303	WOS	441
KPO	428	WGR	319	WPG	301
KPRC	297	WGY	380	WQJ	448
KPSN	316	WHA	333	WRC	469
KSD	545	WHAI	275	WREO	286
KSO	224	WHAS	400	WRM	248
KTHS	375	WHAZ	380	WRVA	256
KYW	545	WHB	366	WRW	278
WAHG	316	WHN	361	WSAI	326
WAIU	294	WHO	526	WSB	428
WBAL	246	WHT	400	WSM	288
WBAP	476	WIBO	226	WSMB	319
WBBM	536	WIP	508	WSOE	246
WBBR	273	WJAR	306	WTAG	268
WBCN	266	WJAX	337	WTAM	389
WBZ	333	WJAZ	322	WTIC	476
WCAE	461	WJR	517	WWJ	373
WCAI	337	WJY	405		

Silent Today

Central—KFRC, KFUO, KLDS, WLW, WSAI, WOI, WCBD, WKRC, WSMB.
Eastern—WBER, WEAO, WFI, WGBS, WHAZ, WIP, WREO, WDRC, WOR.
Far West—KPSN, KGO.

Concert Music

7:30—KDKA, WTIC.
8:00—KMOX, WEAF, WOC, WCAE.
8:30—WFAA, WGY.
9:00—KOA, KMOX.
9:30—KYW, WBAP.
10:00—WLS, WSM.

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EXPECT RULING IN BARRETT LAW CASE NEXT WEEK

Rucker Charges Treasurer 'Unwittingly Guilty' of Embezzlement.

Ruling on a demurrer to a complaint filed by Alvah J. Rucker, city corporation counsel, against County Treasurer Edward A. Ramsay for a temporary restraining order preventing Ramsay from retaining interest on Barrett law funds and for appointment of a receiver to administer the funds will be made some time next week, Judge James A. Leathers of Superior Court One said today. Arguments on the demurrer were heard Thursday.

Rucker, attacking the legality of Ramsay's use of the interest, declared "the county treasurer is unwittingly guilty of embezzlement and could be prosecuted criminally."

"What about John Duvall, your mayor?" demanded James D. Ermston, attorney for Ramsay.

Guvall Guilty Too

"He's guilty, too, and so would you be if you were in the same situation," retorted Rucker. Mayor Duvall was county treasurer prior to Ramsay.

Rucker asserted a 1-cent tax levy is made each year to make up the deficit caused by lack of Barrett law fund interest. The petition seeks to have the interest diverted into the city treasury.

"Ramsay is squandering and wasting a trust fund," said Rucker. "He's taking funds of the people of Indianapolis and putting it in his own pockets. That, your honor, is sufficient cause for the appointment of a receiver."

Ermston pointed out that the appointment of a receiver would demoralize and destroy the treasury department.

Ramsay Ready

"Ed Ramsay stands ready to make good any money he holds and which the law says he must make good," said Ermston.

While Rucker contended Ramsey was "pocketing" interest from a trust fund, Ermston challenged him to "produce a single act where the fund is spoken of as a trust fund." It's a separate and special fund, he said. Ermston declared it had been a custom since the adoption of the Barrett law for the treasurer to hold the money. Ramsay, he said, can invest the money and the interest does not belong to the city.

Declaring that the statutes allow the county treasurer only $5,000 annual salary, Ermston contended it was understood the treasurer may invest and use the interest. Ramsay is under bond of more than $450,000 and must each day pay his bondsman from this interest, said Ramsay.

Ermston declared the question of what to do with the interest was not a question for the courts to decide, but a question for the Legislature to consider. It was an "open secret" and the people knew that the county treasurer was getting this interest, said Ermston.

Rucker declared that while Ramsay may be paid a $5,000 annual salary the interest on Barrett law and delinquet taxes gave him an income in excess of $50,000.

SOIL GAS MEASURE

An instrument has been developed to measure the oxygen content in non-flooded soils. The instrument obtains a soil sample without disturbing the contained air which is later analyzed chemically.

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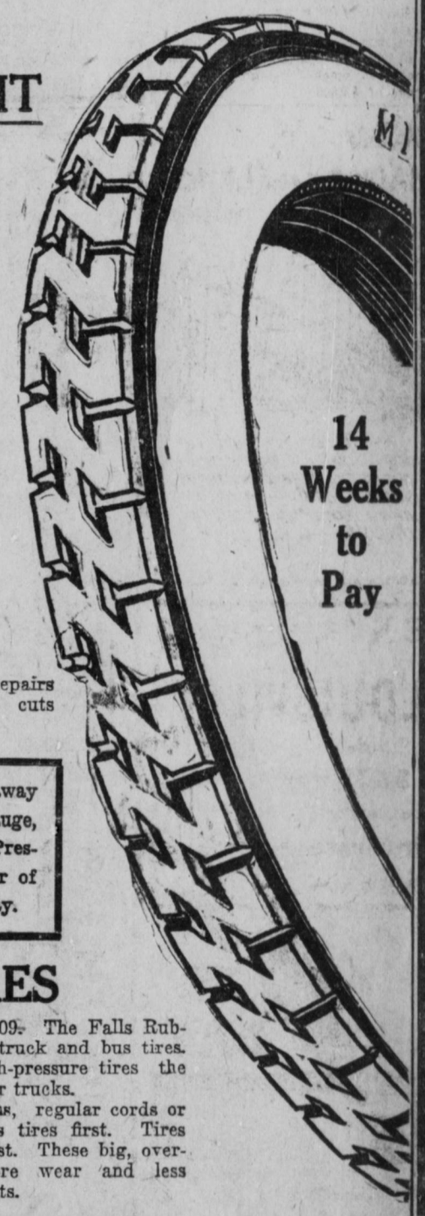

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