



(1) X-rays, discovered 50 years ago by Wilhelm Konrad Roentgen, started a spectacular trail of research that produced the atomic bomb. They helped Antoine Henri Becquerel at Paris in 1896 discover radioactivity. Roentgen's X-rays caused certain minerals to glow with a phosphorescence. Becquerel observed some minerals had a natural glow, and discovered that invisible rays from these minerals produced photographs in the dark. A metal plate placed between the mineral and the photographic plate left its image on the plate.



(2) Chief radioactive minerals were pitchblende, an ore containing uranium. Searching for the source of radioactivity in minerals, Pierre Curie and his wife Marie Sklodowska Curie in Paris isolated a small fraction of a gram of radium salt from tons of pitchblende. They also isolated radioactive polonium, and Andre Debierne in France prepared a pure compound of radioactive actinium. All three charged the air around them with electricity.



(3) Radium had startling properties never before observed among the



chemical elements. It was a constant source of heat which seemed never to diminish. Radium compounds could be boiled in water or cooled in liquid air and the rate of heat production remained the same. An enormous supply of energy or power seemed to be contained in an infinitesimal amount of matter. This gave some hint of a new source of power, which later was to become an atomic bomb.

(4) Studying radioactivity, scientists found that the chemical elements, the foundation stones of the universe, were not as unchangeable as the 19th cen-

tury chemists seemed to believe. The 20th century physicists found that radioactive elements, as they gave off their radiations, changed to other elements. The metal uranium changed to radium and radium finally to lead. The heat from these transmutations were believed to be the source of the heat in the earth's interior. It is also believed the heat of the sun is due to this form of atom smashing, and that the sun is actually a huge atomic bomb.

Tomorrow: How Einstein Helped Pave the Way for the Bomb.

Baseball Standings

By United Press

AMERICAN LEAGUE			
	W.	L.	Pct.
Detroit	75	56	.573
Washington	75	59	.560
St. Louis	70	61	.534
New York	69	61	.531
Cleveland	65	62	.512
Chicago	65	66	.496
Boston	63	70	.474
Philadelphia	41	88	.319

NATIONAL LEAGUE			
	W.	L.	Pct.
Chicago	82	47	.635
St. Louis	78	53	.595
Brooklyn	72	56	.563
New York	71	61	.538
Pittsburgh	72	63	.533
Boston	58	74	.439
Cincinnati	51	78	.395
Philadelphia	40	92	.303

PACIFIC COAST			
	W.	L.	Pct.
Portland	101	62	.620
Seattle	94	69	.577
San Francisco	86	77	.524
Oakland	81	82	.497
San Diego	75	90	.455
Los Angeles	68	96	.415
Hollywood	63	100	.387

San Diego Beats San Francisco

By United Press

San Diego defeated San Francisco 4 to 2 Thursday night in the only Pacific coast baseball league game scheduled as the six other teams of the circuit traveled between contests.

Vallie Eaves celebrated his 23rd birthday and also won a \$2,500 bonus check from President Ball Starr by pitching his 20th victory of the season for the Padres. Eaves was pitched against youthful Doug Oliver, making his first start in the coast league. Nervous at times, Oliver pitched five and one-third innings, giving way to Ken Miller in the sixth.

The first-place Portland Beavers, their lead boosted to seven games over Seattle, go to San Francisco Friday to meet the Seals in a doubleheader. The Rainiers, meantime, are traveling to Hollywood for a doubleheader with the cellar-dwellers, and Oakland will play two games Friday at Sacramento.

Los Angeles will unpack its gear at San Diego.

Borowy Makes Yank President Eat Words

CHICAGO, Sept. 7 (UP)—Henry Ludwig (Hank) Borowy, the silent Pole from New Jersey, made President Larry MacPhail of the New York Yankees eat his words today.

Borowy is the whip-armed righthander pitcher whom MacPhail, in a surprise deal, traded to the Cubs with the curt explanation "he won't finish a game after July 4."

A laconic, modest sort of guy, Borowy said nothing. But the remark made him burning mad and the one-time Fordham sensation vowed to himself he would show the red-haired Yankee president "just how much he knows about pitchers."

Since being traded 42 days ago, Borowy has become the hottest pitcher in the national league, winning seven out of nine games to provide the shot-in-the-arm the league-leading Cubs' pitching staff needed.

Pendleton Roundup Will Start Sept. 12

PENDLETON, Sept. 7 (UP)—Pendleton residents and Indians of the Umatilla reservation will re-enact their roles again this fall in the Happy Canyon, night show of the Pendleton Round-Up. Several new features are planned—including use of the Singing Sentinels of the Kaiser shipyards in the Portland area. The Round-Up begins Sept. 12.

LA GRANDE EVENING OBSERVER
Phone 600

SPORTS

Complete Local Reports

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Both Pennant Races In Critical Stage

NEW YORK, Sept. 7 (UP)—Major league pennant races are at the "if" stage and the burden of proof rests squarely upon the contending teams, with the leading Tigers and Cubs now able to take advantage of time, which rapidly is running out.

The tougher job belongs to the Tigers. Their lead in the American league has been reduced to a game and a half because they split a double header at New York yesterday while the second place Senators took two from the Browns at Washington.

Can Hold Pace
However, if the Tigers continue their pace and win 14 out of their remaining 23 games, Washington will have to win 14 of its 20 to gain a tie. An important factor in favor of the Tigers is that they have a three game edge in the losing column with 56 losses compared with 59 for the Senators.

If the third place Browns harbor any hopes of catching the Tigers they will have to win 19 out of 23 to tie them, while the fourth place Yankees must take 20 out of 24, provided the Tigers can hold their pace at 14 and 9.

Senators Rise
The task of the Cubs is much simpler. Now five full games in front they could drop below the .500 mark, winning 12 and losing 13 of their remaining games and the Cardinals would have to take 16 and lose seven of their remaining games to tie, a pace which they haven't managed to hit this season.

Washington provided evidence it isn't to be counted out and at the same time dealt a mid-riff blow to Brownie hopes by beating last year's champions, 2 to 0 and 3 to 2. John Niggeling was author of a five-hit shutout, topping Newman (Tex) Shirley in

Cleveland all but faded out of the picture at Boston, losing 9 to 3 as the Red Sox made 15 hits off three Indian pitchers to give George Woods an easy win. White Sox and Athletics split, Philadelphia winning 5 to 5 then losing 2 to 1. Orval Grove then won his 13th game.

Wins 16th
Bill Nicholson, apparently emerging from a long slump, hit a two-run homer to spark Hank Borowy to his seventh Cub victory, 6 to 1 over the Giants.

Boston teed off on ex-team mate Charley Barrett for a six-run inning and a 9 to 1 victory over the Cards at St. Louis, after which the world champions won the second game 7 to 3 with 14 hits. Rookie Ed Wright gave the Cardinals only three hits. Ken Burkhardt won his 16th game for St. Louis in the nightcap.

Pittsburgh drubbed the visiting Dodgers, 17 to 5. Manager Leo Durocher and outfielder Luis Olmo of Brooklyn were ejected for arguing. The Reds topped the Phils at Cincinnati, 4 to 1 before only 346 paying fans.

Chandler May Pitch For Yanks Again

NEW YORK, Sept. 7 (UP)—Spurgeon (Spud) Chandler, Yankee pitcher due to be released from the army next week, was working out with the team today and with American league permission may be able to go into regular competition immediately.

Chandler is on a furlough which extends beyond his release date and if the league gives an okay he may get into the important series with Detroit or in one of the games with the Cleveland Indians.

Harmon Takes Job As Sports Announcer

DETROIT, Sept. 7 (UP)—Tom Harmon, university of Michigan football star of 1938-40 and decorated army flier, today embarked on a career as a football radio announcer after rejecting numerous offers to play professional football.

Harmon was signed by radio station WJR yesterday to broadcast accounts of all university of Michigan football games this fall. Before entering the army, Harmon had done some football broadcasts of Michigan games.

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BILLIARDS AND BOWLING ALLEYS

Elm and Adams — Downstairs

Your GI Rights Problems of Men In Service

By DOUGLAS LARSEN
NEA Staff Correspondent

WASHINGTON, Sept. 7 — Return of congress to Washington this week will see revived interest in several new veterans' bills which were introduced but not acted on before congress went home for vacation.

Chief point to be cleared up in pending legislation concerns rights of veterans to take jobs without having to join unions. Because of the great amount of post-war legislation to be considered, however, immediate action on any of the pending veteran's bills is not expected, and clarification of controversies on job rights will still be made most rapidly through local rulings and direct negotiation between ex-servicemen and their employers.

Here are a few of the typical questions which have come into Washington on such questions in the past few days:

Q. I wanted to enlist in the navy, but couldn't pass physical. So I signed on with the merchant marine. But now that the war is over is there any chance to get back to my old job on shore? They tell me now that the GI Bill of Rights doesn't protect us men in the merchant marine.

A. Your rights are protected. Although the selective service act does not provide reinstatement rights for men who have left jobs to serve in the merchant marine, your rights are protected under another law. The war shipping administration, department of commerce building, Washington, has responsibility for administering this law, doing the same things done by the veterans' bureau for men in the armed services.

Q. Before going in the army I was a machine operator in an electrical plant, but in the army I have learned to be a radio repairman. When I go back to my former employer, can I demand a better job, or do I have to start in where I left off?

A. Most employers are genuinely interested in you, grading returning service men. There is, however, no regulation requiring your old employer to give you a better job than the one you had.

Q. I got out of the service a year ago and got my old job back in the auto plant, but now comes a lay-off and out I go. As a vet, don't they have to keep me on the job as long as there is any work?

A. A New York court has just ruled that in the one year after discharge period of reemployment, veterans have super seniority rights. Veterans are therefore entitled to work on any day there is work to be given and no nonveterans shall work when such work can be done by a veteran.

Three WAVes Get Point Discharges

FAIRBAGUT, Ida, Sept. 7 (UP)—Three women from the Portland area today became the first WAVes to be discharged from this U. S. naval center. All were petty officers with more than two years of service.

The three, sent here Tuesday from the naval air station at Astoria for discharge, are Mrs. Nellie E. English, specialist 1st of (0436 North Fourth street) Portland; Miss Helen Bush, specialist 1st, Mrs. Frances Brown, specialist 1st, or (Route 2) Vancouver, Wash.

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RED-HEADED, TOO — Apparently it took just three hand-dances to make up the costume in which red-haired Mrs. Darleen Demos, above, of Jackson Heights, Long Island, will represent Queens County, N. Y., in 7th annual "Mrs. America" contest in Palisades Park, N. J.

Marine Faces Charge Of Theft Of Plane

EUGENE, Sept. 7 (UP)—State police have a warrant issued today for Pfc. Lloyd Kenneth Ingram, USMC, now in Corvallis naval hospital, in connection with the theft of an army airplane at Eugene airport Saturday.

The army plane, stationed at Eugene for use by army smoke chasers, crashed near Creswell. Ingram was rushed to a local hospital for treatment of burns which he said were sustained when he tried to rescue occupants from the wreckage. No trace of any occupants has been found yet.

SILKWORMS TAUGHT HIM

Comte Hilaire, de Chardonnat, father of the rayon industry, based his research on silkworms, copying their natural silk producing by mechanical means. He even obtained his first cellulose from mulberry leaves, as do silkworms.

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ELK HORN BEER

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Today's Sport Parade

By CARL LUNDQUIST

UP Staff Correspondent

NEW YORK, Sept. 7 (UP)—Sam Bredon's knack of building championship Cardinal baseball teams for St. Louis is an unchallenged talent, but there are some persons ready to suggest he could take a cue from Broadway producers on where to stage his "hit shows."

There isn't any doubt his Cardinals teams have made a lot of money, especially in recent years, but unless his civic pride for the steaming city on the banks of the Mississippi river is something he won't compromise, it would seem time for him to seek greener pastures.

No Attendance
From the number of players the Cardinals have in the service they are almost certain to be perennial contenders for years to come, yet season after season the St. Louis fans reward his efforts with mediocre attendance.

It seems obvious by now St. Louis, like Boston, because of population trends, has lost its right to be a two team baseball city.

All three of the one-city teams in the American league have greater population as of 1945 than St. Louis and Boston.

47 Brutalized Prisoners Home

OAKLAND, Calif., Sept. 7 (UP)—Forty-seven emaciated, weary navy and marine officers and enlisted men, liberated from Japanese prison camps but still bearing the marks of sadistic brutality, were back in the United States today to tell for the first time the story of the submarine Tang.

Mos of the men had broken teeth, head wounds, bruises and scars.

The Tang's story was told by MM 2/c Clayton O. Decker, Oakland, Calif., who said Cmdr. Richard O'Kane, San Rafael, Calif., and three other officers who were on the bridge when the torpedo hit, were dashed overboard.

A Japanese destroyer picked up three officers and six enlisted men, Decker said, and announcing "it is well known submarine men don't get enough sunshine," tied them to the deck of the destroyer for hours until all were blistered by the hot sun.

"The Nips would stick lighted cigarettes into our nostrils, beat us and push us around for hours," Decker said.

If a transport pilot should stay off an airway for three months, his authority to fly over it is automatically cancelled.

Granada

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