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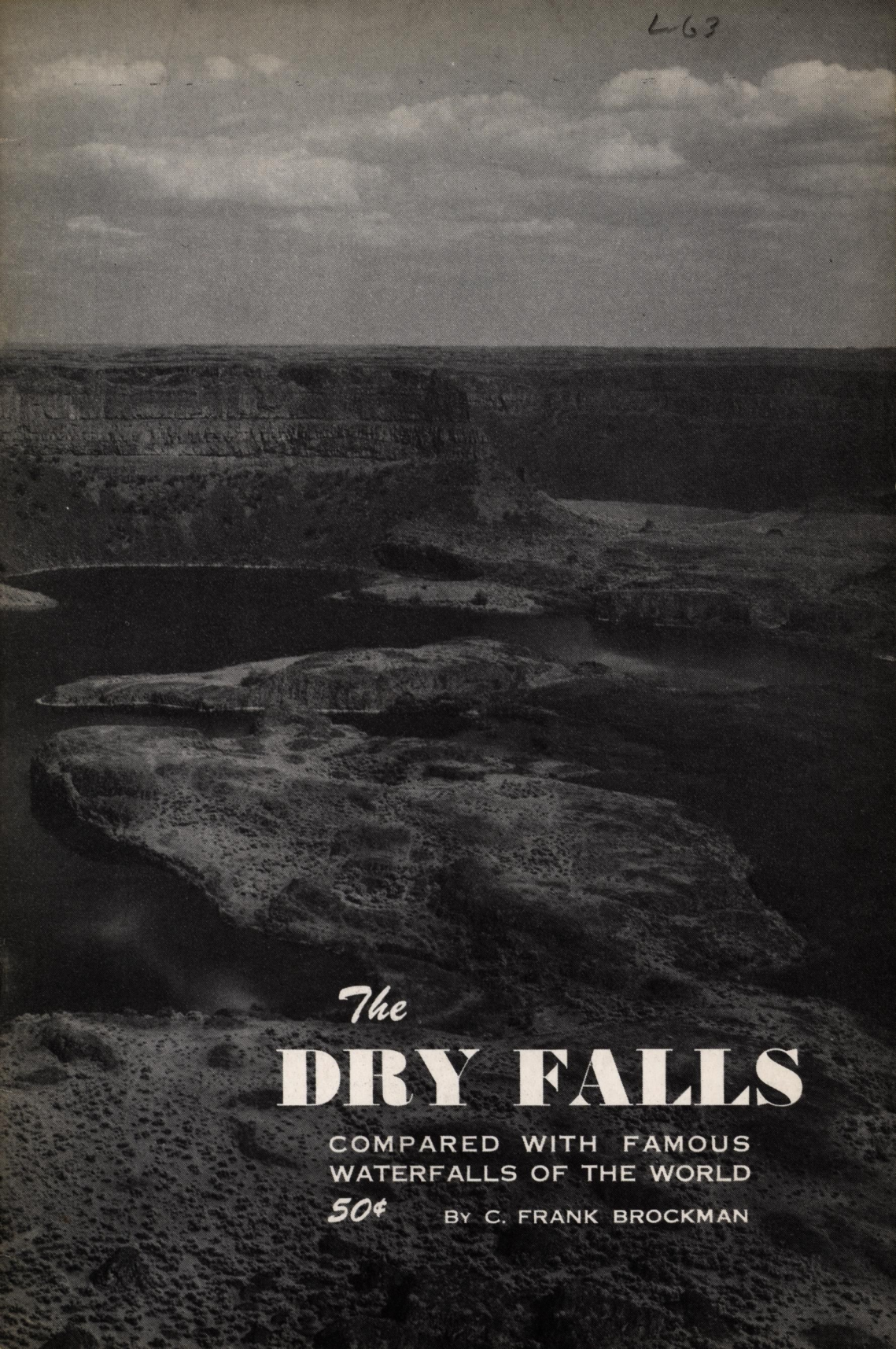

The DRY FALLS

COMPARED WITH FAMOUS WATERFALLS OF THE WORLD

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BY C. FRANK BROCKMAN

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The DRY FALLS

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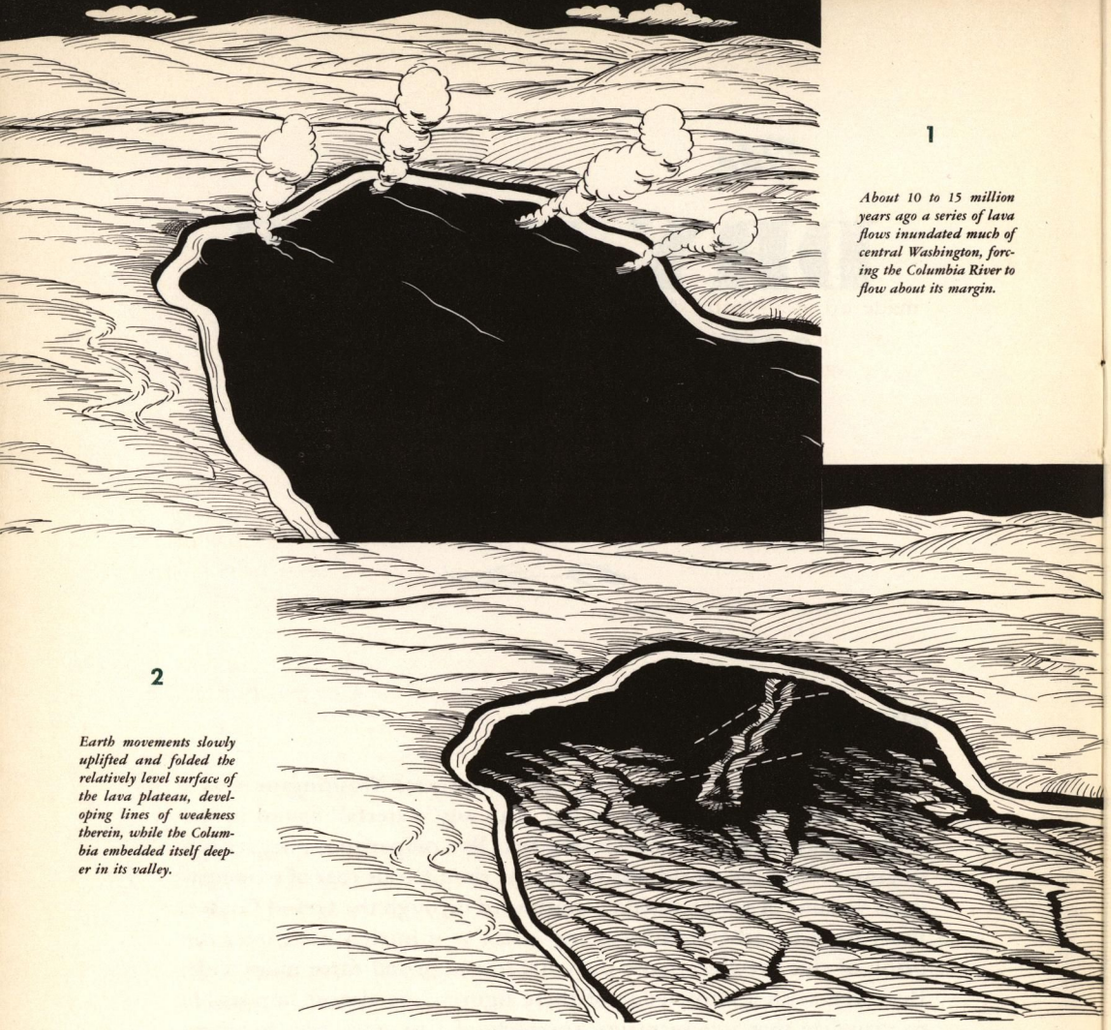
BY C. FRANK BROCKMAN

INTRODUCTION

In pre-historic time the Dry Falls of central Washington was a gigantic cataract far greater in size than any waterfall found in the world today. This is a well known fact. By comparison, Niagara is a pygmy. When the world was young the thunderous roar of a tremendous volume of water, rushing southward through the Grand Coulee, must have reverberated for many miles as it hurled itself over the brink of this precipice more than 400 feet high and three miles wide. But even with a knowledge of these figures it is almost impossible to visualize that awe-inspiring spectacle of a by-gone age. In themselves, figures fail to convey a proper understanding of the huge proportions of that cataract.

To comprehend adequately the size and power of that pre-historic waterfall one should first view the Dry Falls, the "skeleton" of that great wonder of the past, then visualize the figures indicative of its immensity in comparison with modern waterfalls, or with some of the more massive, well known works of man. Only then can one appreciate its magnitude; only then can one appreciate the significance of the geological events which brought it into being and, in turn, erased it—leaving the dry, arid cliff, the great coulee, and other related topographical features as mementoes of a distant past.



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About 10 to 15 million years ago a series of lava flows inundated much of central Washington, forcing the Columbia River to flow about its margin.

2

Earth movements slowly uplifted and folded the relatively level surface of the lava plateau, developing lines of weakness therein, while the Columbia embedded itself deeper in its valley.

OUTLINE OF THE GEOLOGY OF THE DRY FALLS AND GRAND COULEE

An appreciation of the magnitude of the Dry Falls is, to a large extent, dependent upon an understanding of the geological processes which, over a period of thousands of years, brought it into being. This highly significant and interesting story cannot be given in detail in the limited space of this small publication. However, in the interest of completeness and clarity, the following outline of the geology of the Dry Falls is given.

1. Formation of the lava plateau; change in the course of the Columbia River.

More than 15 million years ago, before the formation of the Dry Falls and the Grand Coulee, the appearance of the central Washington area was much different from what it is today. This region then was made up of a greatly dissected mass of valleys and low mountains—the southern extension of the present Okanagan highlands of northern Washington and adjacent British Columbia. In addition, the Columbia River probably followed a different course and did not form the great arc which now encloses what is known as the "big bend country".

About 10 to 15 million years ago lava, welling up quietly from fissures in the earth, began pushing northward into what is now central Washington. For ages such volcanic activity alternated with long periods of quiet; but eventually a series of lava flows, accumulating like layers of a cake, developed to a thickness of thousands of feet. These lava flows largely inundated the original terrain of the region, and in the process forced the Columbia River to change its course so that it flowed around the margin of the lava plateau. It follows that same course today.

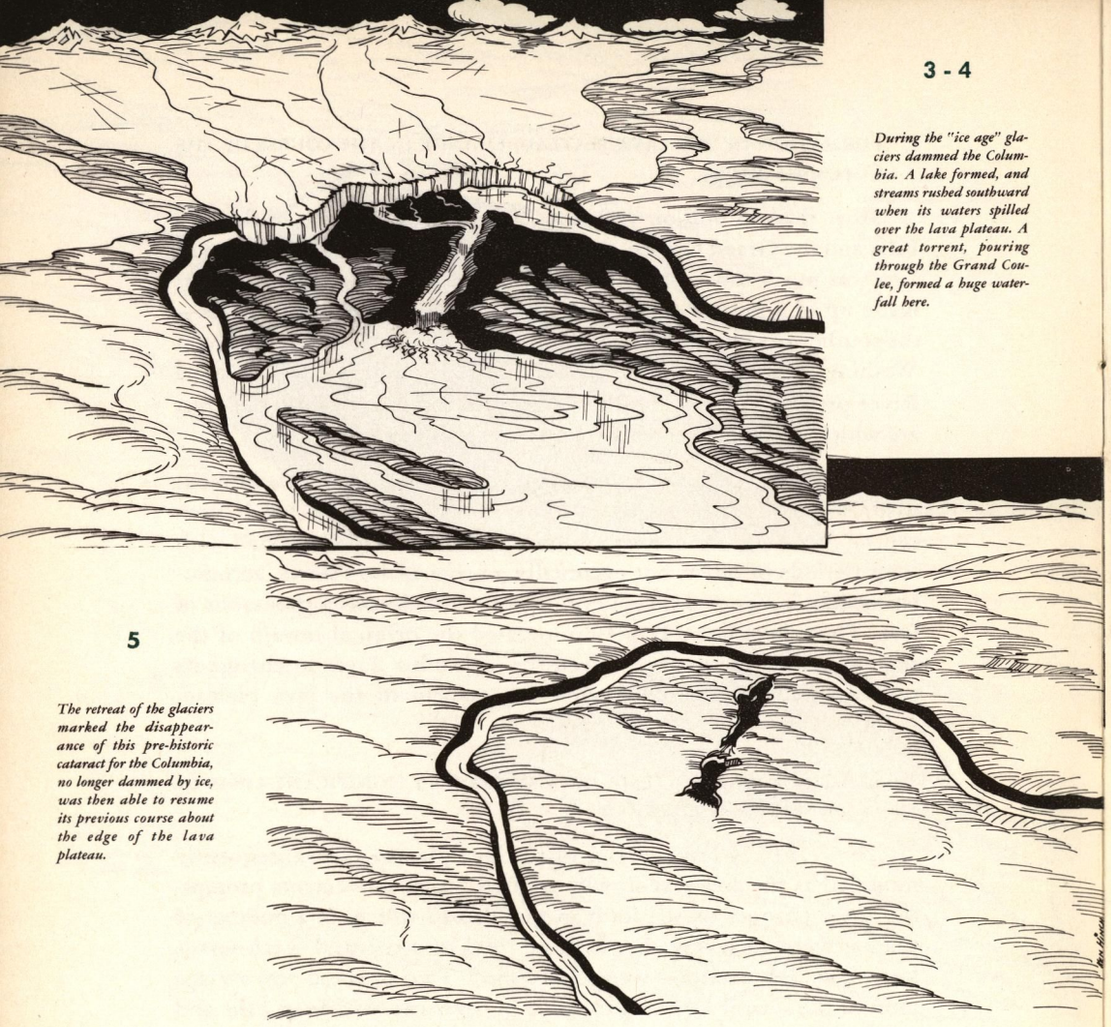
2. Uplift of lava plateau; development of significant lines of weakness in the terrain.

The relatively level surface of the lava plateau was subsequently modified as the area was slowly uplifted. Earth movements prompting these changes caused folds in the plateau which, in a number of places, were so severe that definite lines of structural weakness—known as downwarps—were established. Two of these downwarps crossed the Grand Coulee area—one in the vicinity of Soap Lake and another just north of Coulee City. The location of these downwarps is highly significant since, at a later geological period, rapid erosion by water at one of those locations gave rise to the Dry Falls.

While all that was taking place the Columbia River, flowing around the edge of the lava plateau, had deepened its valley by several hundred feet. The stage was now set for a series of dramatic events from which the Dry Falls finally evolved.

3. Effect of glaciers; damming of the Columbia River by ice.

During the "ice age" great glaciers, which formed to the north, gradually pushed southward. Eventually a portion of that mantle of ice reached the central Washington region and dammed the Columbia River at a point somewhere in the vicinity of the northern section of the present "big bend". As the glaciers continued to push forward the ice barrier developed to tremendous proportions and a lake was



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During the "ice age" glaciers dammed the Columbia. A lake formed, and streams rushed southward when its waters spilled over the lava plateau. A great torrent, pouring through the Grand Coulee, formed a huge waterfall here.

5

The retreat of the glaciers marked the disappearance of this pre-historic cataract for the Columbia, no longer dammed by ice, was then able to resume its previous course about the edge of the lava plateau.

formed behind it in the valley of the Columbia. That lake eventually increased in size and depth until it overflowed upon the lava plateau, and its waters, thus released, rushed southward. By following lines of least resistance, a series of torrents cut across the "big bend" to form the coulees which characterize this region today. One of those rivers followed a course now indicated by the Grand Coulee; it created the great waterfall whose precipice is known today as the Dry Falls.

4. Formation of the great cataract at Dry Falls.

As that great volume of water tore southward through the Grand Coulee, cascades formed at the two downfolds along its course—one near Soap Lake and the other just north of Coulee City, as already noted. There, the less resistant structure of the steeply inclined

terrain reacted to the great erosive power of the rushing water of this tremendous torrent, and waterfalls soon developed. The Dry Falls which one views today was the ultimate product of such erosion, first manifest at the lower incline near Soap Lake. The upper fall, which originated at a point north of Coulee City, was subsequently destroyed as continued erosion caused a gradual but relentless northward recession of its precipice. Evidence points to the fact that at one time that upper fall was some 1200 feet high—even greater in size than the one whose present dry cliffs cause us to ponder in wonderment and awe. That upper waterfall eventually destroyed itself by cutting its way northward through the upper coulee to the lake which at that time, filled the valley of the Columbia. During that same period the lower fall receded approximately twenty miles from its point of origin near Soap Lake to approximately its present location.

5. Retreat of the glaciers; disappearance of the cataract at Dry Falls.

Eventually the climate moderated and the glaciers began a slow retreat from this area. For a long time, however, the Columbia River remained dammed by ice; and water, derived from the resultant lake, continued to give life to the great cataract at Dry Falls. But in time the glaciers completely disappeared from this region. When that occurred the ice dam, which had interrupted the normal flow of the Columbia River, disintegrated; and once more that river was able to flow unimpeded toward the Pacific through its previous channel around the "big bend country" upon the margin of the lava plateau. Thus the lake which supplied the water to the Grand Coulee and its great waterfall ceased to exist. Numerous watercourses across the "big bend"—of which the stream in the Grand Coulee was one—were thus left high and dry upon the lava plateau, several hundred feet above the level of the Columbia River. Today numerous coulees; the semi-arid, giant precipice of the Dry Falls; and the limpid waters of a series of small lakes are all that remain as readily visible evidence of those pre-historic torrents—mute evidence of the relentless geological changes which are constantly taking place about us. Thus, we may view in the arid, dust-blown precipice of the Dry Falls the "skeleton" of one of the greatest cataracts ever to exist upon the earth.

THE DRY FALLS IN COMPARISON WITH LARGE, WELL-KNOWN MAN-MADE STRUCTURES

Among the most familiar works of man significant for their size are the capitol of the United States in Washington, D. C., the Empire State Building in New York City, the pyramids of Egypt, and the Coulee Dam in the State of Washington. Each of these is dwarfed by comparison with the Dry Falls.

Our nation's capitol building—from the bottom of the first step to the top of the statue at the apex of the dome—is 268 feet high. The maximum width of that structure is 751 feet. Thus, a series of aproximately twenty-one capitol buildings could be placed side by side in a row upon the canyon floor at the base of the Dry Falls; and at no point would the arid cliffs of this pre-historic waterfall tower less than 100 feet above the capitol building's greatest height.

The largest of the three famous pyramids of Gizeh in Egypt measures 756 feet across the base and 481 feet high. Assuming that one could bodily transport this monumental structure to the canyon floor at the base of the Dry Falls simple arithmetic will indicate that, while the apex of the pyramid would rise 76 feet above the brink of the precipice, the width of the Dry Falls would be sufficient to accommodate twenty additional pyramids placed side by side.

In a similar fashion the width of the Dry Falls would accommodate approximately thirteen Empire State Buildings laid end to end upon their sides; for that tall slender structure is slightly more than 1200 feet tall with a maximum width at the base of 425 feet—only fifteen feet greater than the height of the Dry Falls.

The Coulee Dam, one of the most massive of man-made structures, never fails to capture the interest and imagination of those who view it, particularly during the flood period when the thunder of torrents of water pouring through the numerous spillways greatly enhances its aspect of monumental bulk and vast power. But even this spectacle would take a poor second place in comparison with the deafening roar of that pre-historic cataract which once characterized the present Dry Falls. The total length of the Coulee Dam, from one bank of the Columbia to the other, is 4300 feet—less than one third of the total width of the Dry Falls. The Coulee Dam, from the Columbia River to the roadway across the top, is slightly more than 375 feet in height—roughly thirty feet lower than the precipitous cliff of the Dry Falls where, millions of years ago, the diverted waters of the Columbia River hurled themselves into a seething caldron below.

NIAGARA FALLS CHAMBER OF COMMERCE.

Niagara Falls is bisected by Canadian-U. S. boundary.

THE DRY FALLS IN COMPARISON WITH EXISTING WATERFALLS

For a number of reasons it is difficult, if not impossible, to arrive at a valid basis for the comparison of waterfalls—and consequently, their relationship to the size of the Dry Falls. In the first place, accurate data on height and other related factors is difficult to obtain; equally reliable references vary greatly in many instances. This is largely due to the fact that—unlike the system used in computing the height of mountains (which are always based upon elevation above sea level)—there is no well-established formula for computing the height of waterfalls. Also, many waterfalls leap over a series of intermittent precipices in the course of their total descent. This lends confusion to estimates, for it is difficult to determine whether the height of such waterfalls should be rated on the basis of one fall or a series of cascades. Likewise, width is a varying factor. Great cataracts, resulting from the plunge of a broad river, almost invariably are divided at the brink by islands which separate the water into several segments, and one finds himself in a quandry as to whether or not to include these islands in computing the width of the fall.

In short, waterfalls do not follow an established pattern. They exist in a great variety of forms, making it impossible to arrive at reliable standards for computing measurements.

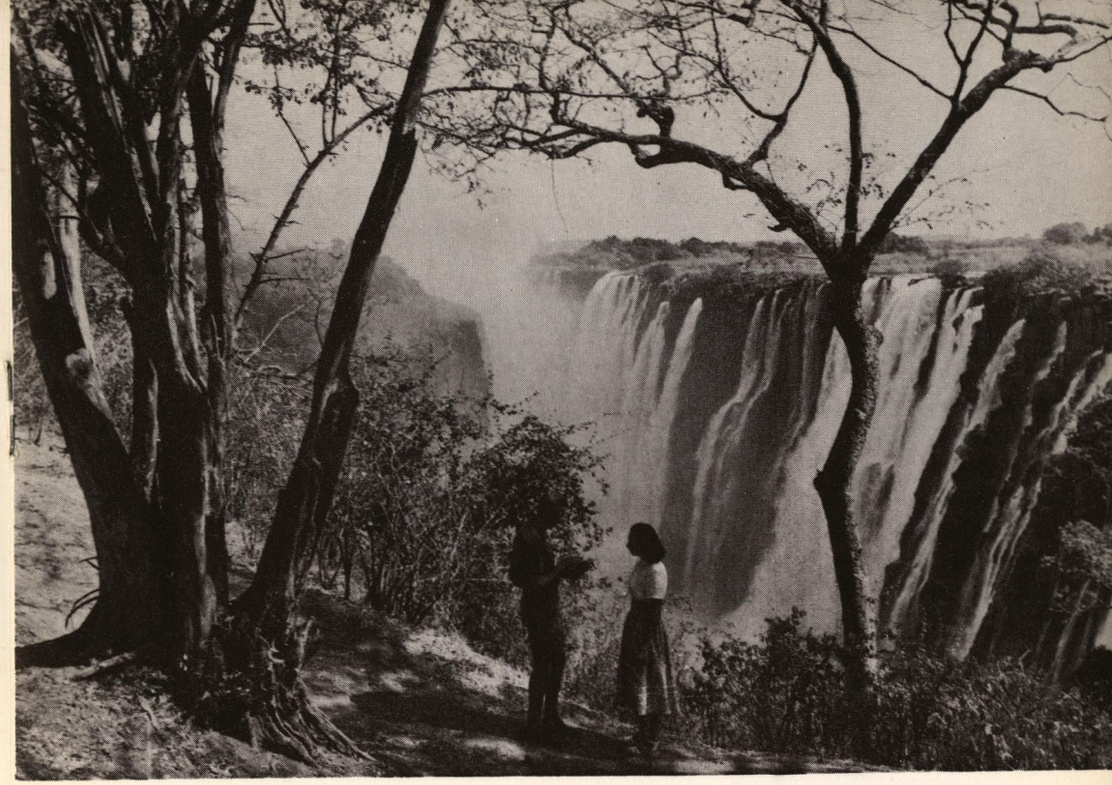
Great height and delicate beauty typifies one type of waterfall, as in the case of Yosemite Falls in California. In contrast, another group is characterized by vast power, great volume, and width—as epitomized by Niagara. Many embody certain attributes of each of the foregoing. Waterfalls are individualists, their forms determined by the size and character of their rivers and the nature of the terrain where they occur.

Approached from this point of view, and recognizing that there can be no really accurate comparison of waterfalls of different types, the material noted on the following pages will indicate the characteristics of some of the principal waterfalls of the world which have, for one reason or another, impressed themselves upon the mind of man. Keeping in mind the character, size, and immensity of the Dry Falls, a glance at the following data will emphasize the fact that the great cataract which existed here in past geological time was, truly, a prodigious spectacle!

GREAT CATARACTS OF THE WORLD

The three greatest existing cataracts which most nearly rival the huge waterfall which once occupied the site of the Dry Falls are *Niagara,* shared by the United States and Canada, *Victoria,* in British South Africa, and *Iguassu,* found on the Brazil-Argentina border. Like the great cataract once found here, each of these modern giants is produced by a large river pouring great volumes of water over the brink of a broad precipice. But when these three tremendous water spectacles are compared with the size of the Dry Falls—over 400 feet high and three miles wide—it is easy to see that our most magnificent modern cataracts are readily eclipsed by their prehistoric counterpart.

Niagara Falls, discovered by Father Hennepin in 1678, varies in height from 158 to 165 feet. The total width, including Goat Island, is approximately one mile. Although not so high as either Victoria or Iguassu, Niagara surpasses both of these in volume, visibility, and opportunity for general study. In addition, unlike both of its principal rivals, it has little fluctuation in volume at various seasons; and in winter it is embroidered with icy lacework on a grand scale. It lies between Lake Erie and Lake Ontario and is bisected by the International Boundary. Near the brink, the Niagara River is divided by Goat Island so that but six percent of the water is diverted into that portion of the channel leading to the American Falls, 167 feet high and about 1000 feet wide. The Canadian Falls, carrying the bulk of the water, forms a great horseshoe—158 feet high and about 3000 feet wide.



Victoria Falls—South Africa. SOUTH AFRICAN TOURIST CORP.

Victoria Falls has a vertical drop of from 256 to 343 feet. Located in the heart of Africa, about midway in the course of the Zambesi River, it was discovered by David Livingstone in 1855. The Zambesi, according to the National Geographic Magazine (July 1926) is "the greatest river in the world which casts itself in full volume over a precipice". At Victoria Falls the mile-wide, regal Zambesi, with a thunderous roar, abruptly hurls itself into the narrow confines of a deep chasm at right angles to the river's course. The opposite side of this chasm is only 80 to 240 feet removed from the precipice over which the river pours, and the churning waters send up clouds of spray which rise high into the air and which can be seen for many miles. A narrow channel, little more than 100 feet wide, provides the only means of escape for the imprisoned waters which produce great rapids and whirlpools of tremendous force. Below this gorge, the river changes direction several times as it rushes through a narrow canyon on its way to the Indian Ocean.

Victoria Falls is higher than either Niagara or Iguassu. At its brink the waters of the Zambesi are diverted into four channels by three islands, somewhat as Goat Island divides Niagara's waters. Although magnificent at any time, the volume of the Zambesi varies between

BRAZILIAN GOVERNMENT.

Iguassu Falls—South America.

the wet and dry seasons. During the flood period the clouds of spray from the falls are so dense that it is impossible properly to observe and appreciate this spectacle.

Iguassu Falls, with a height of from 210 to 230 feet, is the third in the world's triumverate of great cataracts. It is found in the heart of South America, on the Iguassu River, at a point where the boundary of Brazil merges with that of Argentina. Although smaller in volume than either Niagara or Victoria, Iguassu has greater breadth; and many consider it the most picturesque.

The Iguassu River is about one half mile wide some distance above the falls but broadens as it approaches its great precipice. Including the numerous islands which divide the river into a number of watercourses, Iguassu Falls has a total width of nearly two miles, and embraces several distinct falls. Generally speaking, the river has two principal channels. The narrower and deeper one forms the Bazilian and Union Falls while the other, after describing a great arc on the Argentine side, drops in a series of two leaps to form the San Martin Falls. The greatest volume of water passes over Union Falls (213 to 230 feet high) which lies partly in Brazil and partly in

Argentina. San Martin Island, which occupies a position comparable to that of Goat Island, forms the main division between the two principal sections of the Iguassu cataract. Unfortunately, this prevents a comprehensive view of the entire falls from any one point.

Although they by no means approach the proportions of Niagara, Victoria, or Iguassu, there are a number of other waterfalls of the same general type which should not be overlooked. Perhaps the most noteworthy of these is *Kaieteur Falls,* found on the Potaro River in an isolated section of British Guiana. This is one of the highest waterfalls in the world produced by a river of considerable size. At the brink of the falls the Potaro is 400 feet wide. Its waters flow lazily to that point, then plunge abruptly in an almost perpendicular curtain for a vertical distance of 741 feet.

Gersoppa Falls is one of the most famous in India. It is 830 feet high and is found on the Sharvati River which, at the brink of the falls, is 200 feet wide. Actually the river forms four separate falls which drop from various levels—these being known as the Raja, the Roarer, the Rocket, and La Dame Blanche. The first, which makes an essentially clear leap from the brink of the cliff, is the highest (830 feet). The latter is considered the most beautiful, being characterized by lacy cascades which stream over the rocky precipice.

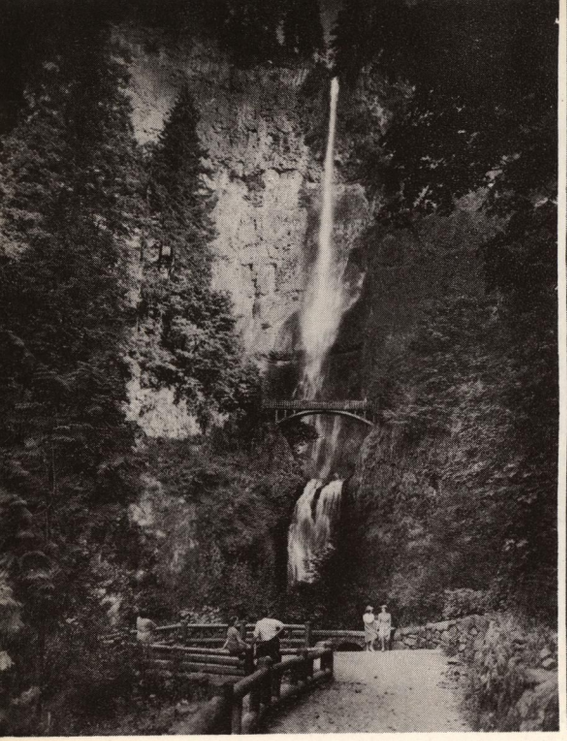
Grand Falls in western Labrador is second to Niagara among North American cataracts. It is formed by the Hamilton River which, for about four miles above the falls, passes over a series of boisterous rapids. Then it plunges over a precipice 200 feet wide and drops abruptly 245 feet into a narrow canyon.

WATERFALLS FAMOUS PRIMARILY FOR HEIGHT

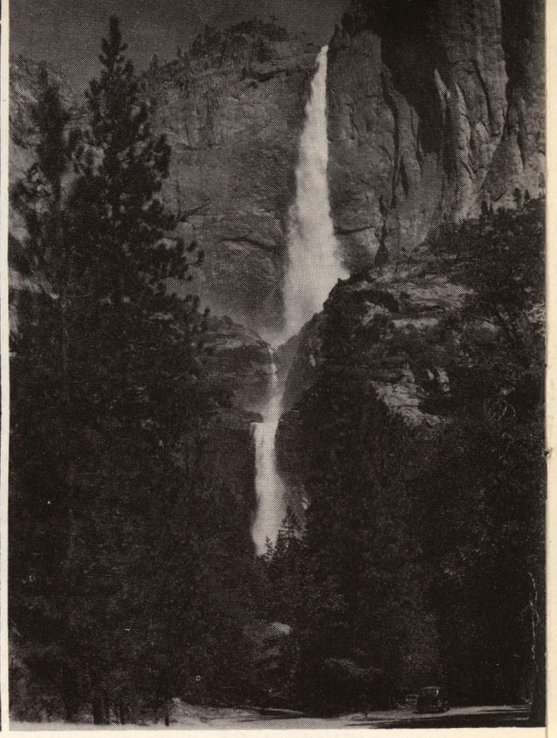
Contrasting sharply with the waterfalls of great breadth and power are those characterized by great height and beauty. These, including many which embody certain characteristics of both groups, are found on streams of relatively small size rather than along broad rivers.

NORTH AMERICAN WATERFALLS

The area which, for its size, is one of the most outstanding in the world for its waterfall display is Yosemite Valley, a part of Yosemite National Park, California. Here monumental, precipitous, granite cliffs foster free-leaping waterfalls and numerous cascades. This is particularly true during the spring and early summer when the streams, fed by waters derived from melting snowbanks, achieve



Multnomah Falls—Oregon.
PORTLAND CHAMBER OF COMMERCE



Yosemite Falls—California.
ANDERSON, NATIONAL PARK SERVICE.

their greatest volume. During the dry season, however, many of these waterfalls are either greatly reduced in volume or even nonexistent.

Outstanding in this superb water spectacle are *Yosemite, Bridalveil, Nevada,* and *Vernal falls*—each of which is different in type and appearance. Yosemite, which descends a total of 2425 feet, is formed by a series of three drops—the uppermost being 1430 feet, with a lower fall of 320 feet and an intermediate cascade of 625 feet. Bridalveil Falls, one of the finest examples of a free-leaping waterfall, drops a vertical distance of 620 feet. Nevada and Vernal falls are, respectively, 594 and 317 feet in height. Two others not so well known are *Illilouette Falls* (370 feet) and *Ribbon Falls* (1612 feet)—the highest single waterfall in this area. Among many others in Yosemite Valley whose total height is characterized by a series of cascades are *Sentinel Falls* (2000 feet), *Staircase Falls* (1300 feet), *Royal Arch Cascade* (1250 feet), and *Cascade Falls* (500 feet).

Noteworthy waterfalls also exist in other parts of the United States. Perhaps the most famous of these is *Multnomah Falls,* well known to those who have driven along Oregon's famed Columbia River Highway east of Portland. The total height of 650 feet is composed of two drops—the upper being 541 feet and the lower 79 feet. Equally interesting are the two falls of the Yellowstone River in Yellowstone National Park, Wyoming. This stream makes two impressive leaps within a distance of one-half mile. Upper Yellowstone Falls is 109 feet high while *Lower Yellowstone Falls,* largest and better known of the two, is 310 feet in height.

The State of Washington possesses many interesting waterfalls. Mount Rainier National Park claims *Narada Falls* (168 feet), *Sluiskin Falls* (300 feet), *Comet Falls* (200 feet), and *Fairy Falls.* The latter consists of three drops aggregating 700 feet, but like many others is rarely seen and consequently is not well known. *Snoqualmie Falls,* twenty-nine miles east of Seattle, is 270 feet high; in eastern Washington one finds *Spokane Falls* (73 feet high and 260 feet wide) in the heart of the City of Spokane, and *Palouse Falls* (197 feet) in Palouse Falls State Park.

Southwestern United States is rarely associated with waterfalls. Yet in Grand Canyon National Park, Arizona, are *Mooney Falls* (192 feet) and *Havasu Falls* (93 feet).

Fall Creek Falls (265 feet) in the Cumberland Mountains of Tennessee is the highest waterfall east of the Rocky Mountains.

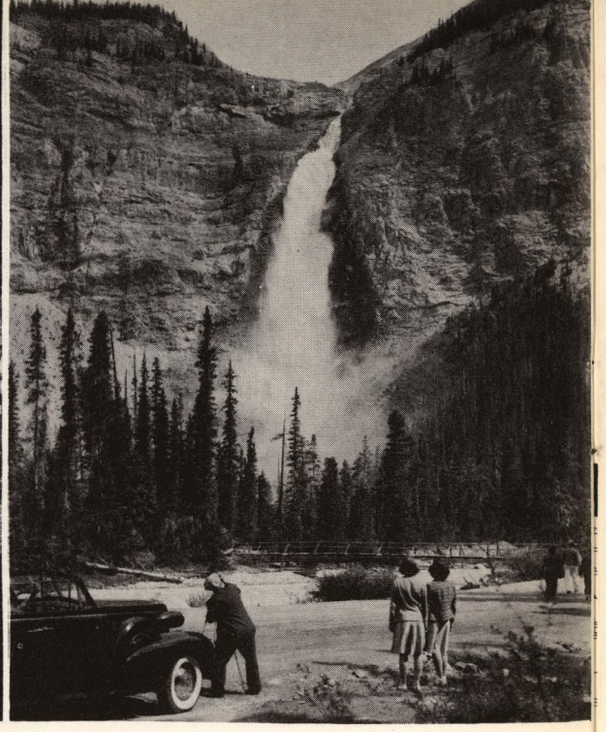
Our neighbors to the north can also claim spectacular water displays. *Takakkaw Falls,* with a total height of 1650 feet, is among the best known of many waterfalls in the Canadian Rockies. Found in the upper Yoho Valley of British Columbia, in Yoho National Park, its total height includes a partially free leap of from 900 to 1000 feet. In the same vicinity is a noteworthy companion—*Twin Falls,* said to be 600 feet high. Nearer the Pacific Coast, in the upper Bella Coola Valley, is a great, but little known leaping waterfall. Little exact data is available on *Bella Coola Falls* but it is said to be 800, or possibly 1000, feet high.

To the south, in Mexico, is *Basaseachic Falls* which is regarded as one of the more outstanding waterfalls in the world. Characterized by an essentially clear leap, height estimates range from 827 to 986 feet. It is found in the Sierra Tarahumara in the State of Chihuahua.

SOUTH AMERICAN WATERFALLS

The Venezuela-British Guiana-Surinam-northern Brazil borderlands form another area famed for the existence of high waterfalls. However, due to their remoteness and inaccessibility, few people have seen them; no accurate instrumental surveys of their heights have been made; and, consequently, there is little exact, truly reliable data concerning them. However, one of these—*Angel Falls* in

Angel Falls—Venezuela; highest in the world.
UNITED PRESS.



Takakkaw Falls—British Columbia.
CANADIAN GOV'T TRAVEL BUREAU.

Venezuela—is of particular importance for it is undoubtedly the highest known free-leaping waterfall in the world.

James Angel, explorer-aviator and soldier of fortune, discovered it in 1937. It is formed by a stream which plunges over the edge of Mount Auyentepui, a lofty tableland, which rises abruptly from grassy savannahs separating it from the jungles of the lower elevations. Members of a Venezuelan government expedition, who viewed it from the air in 1939, estimated its height at 3300 feet. Photographs of this waterfall indicate that it is unbroken by ledges for the greater part of its descent. Thus, if this and other estimates—which range upward to "a mile high"—are even approximately correct, Angel Falls readily qualifies as the highest free-leaping waterfall in the world.

Others in this same remote region include *Kukenaam Falls* (2000 feet), *King George IV Falls* (1600 feet), *Roraima Falls* (1475 feet), *King Edward VIII Falls* (840 feet), *Marina* (500 feet) and *Chamberlain Falls* (300 feet).

Elsewhere in South America are several others of importance. *Tequendama Falls,* 456 feet high, is found only about fifteen miles from Bogata, capitol of Colombia, at a point where the Bogata River hurls itself over a sheer precipice. In Brazil are the *Herval Cascades* which boast a total height of 400 feet.

WATERFALLS OF NEW ZEALAND AND AUSTRALIA

New Zealand claims many scenic attractions, not the least of which are three spectacular waterfalls—Sutherland, Bowen, and Sterling. All three are located on rivers which empty into Milford Sound on the southwestern coast of South Island.

Highest and most noteworthy of these is *Sutherland Falls,* formed by the Arthur River, which descends a total of 1904 feet in three giant steps—from top to bottom, 815, 751, and 338 feet in height. None, with the possible exception of the lower fall, makes a clear leap; however the general appearance of Sutherland Falls resembles that of Yosemite, with which it has often been compared. *Bowen* and *Sterling* falls are, respectively, 550 feet and 504 feet high.

In New South Wales, in the nearby continent of Australia, is *Wollomombi Falls* which, with a height of 900 feet, is said to be characterized by a spectacular clear leap.

AFRICAN WATERFALLS

In addition to the great cataract, Victoria Falls (see page 9), Africa contains other waterfalls which, although of different type, nevertheless are of considerable interest. Greatest of these is *Tugela Falls,* located on the Tugela River in Natal. While references to its height vary widely most agree on 1800 feet. Also in Africa is *Kalambo Falls* (1400 feet) considered to be one of the most beautiful in that region. Formed by the Kalambo River, which defines the boundary between Northern Rhodesia and Tanganyika Territory, this waterfall consists of two principal drops—the upper being 1200 feet and the lower, and minor, fall being approximately 200 feet high.

Other noteworthy African waterfalls are *Chirombo Falls* (880 feet) in Northern Rhodesia; *Maletsunyane Falls* in Basutoland, with a total height of 630 feet; *Tisisat Falls* (459 feet) in Ethiopia; *King George Cataract* in Cape Province, which has a total drop of 450 feet; and *Horwick Falls* (364 feet).

WATERFALLS OF EUROPE

The scenic beauty of many mountain regions in Europe is highlighted by beautiful waterfalls. *Garvarnie Falls,* on the French side of the Pyrennes, boasts the greatest height among European waterfalls—1385 feet. During most of the year it descends in a series of cascades divided broadly into two units, 958 and 427 feet respec-

tively; but during the period of high water it is said to have a clear leap for the entire distance. Garvarnie's principal rival is *Krimmler Falls* near Salzburg in Austria. While references to its total height vary, the figure of 1230 feet seems most nearly correct. Formed by a stream which has its source in the Krimml Glacier this fall descends in a series of three steps, the uppermost being 460 feet high. Also found in Austria are several other spectacular waterfalls, including *Tauern* (660 feet), *Stuibenfall* (500 feet), *Gastein Falls* (487 feet), *Schleierfall* (330 feet), and *Waldbachfall* (330 feet).

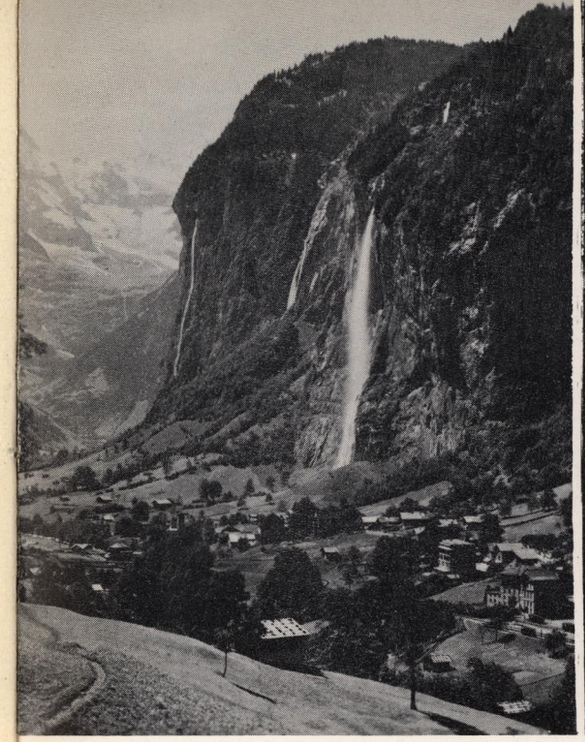
In the Sauterbrunnen Valley of Switzerland is *Staubbach Falls,* one of the most beautiful and widely known of European waterfalls. It is of the slender Yosemite type and drops 980 feet in a single leap from the lip of a giant precipice. Two others in the same country which rival Staubbach in height, if not in drama of setting, are *Giesbach* (980 feet) and *Trummelbach* (950 feet).

In Italy is *Marmore's Cascade.* It is found near Terni, on the Velino River, and descends an estimated distance of nearly 700 feet in a series of three falls—the first being 300 feet high.

As one might expect, the irregularly incised coast of Norway is also famous for spectacular cascades of great height. Among the most noteworthy of these are *Vasenden-fos* (1310 feet), *Valur-fos* (1150 feet), *Rembisdel-fos* (893 feet), *Vettis-fos* (853 feet), *Skykia-fos* (650 feet), *Maradals-fos* (650 feet), *Rjukan-fos* (555 feet), *Voring-fos* (535 feet), *Afdal-fos* (525 feet), and *Skjaeggeldal-fos* (525 feet).

OTHER WATERFALLS OF INTEREST

Many other features of this kind, which embody great interest and beauty, are found elsewhere in the world. Among these are *Hiilawe* (500 feet) and *Akaka* falls (400 feet) on the island of Hawaii, T. H., *Stimson Falls,* a cascade of about 500 feet, and *Pagsanjan Falls* (approximately 200 feet) in the Philippine Islands, and *Kegon* (330 feet) in Japan. Others deserving brief mention are *Seven Falls* (266 feet) in the State of Colorado, *Montmorency Falls* (265 feet) in Quebec, *Dettis-fos* (257 feet) in Iceland, *Harsprang* (246 feet) in Sweden, *Taughannock Falls* (215 feet)in the State of New York, *Foyers* (205 feet) in Scotland, *Myitinge Falls* (131 feet) in Burma, *Kerka Falls* (130 feet) in Yugoslavia, and *Scale Force* (120 feet) in England.



Staubbach Falls—Switzerland.
SWISS NATIONAL TOURIST OFF.

Sutherland Falls—New Zealand.
NEW ZEALAND GOV'T TRAVEL COMM.

Fall Creek Falls—Tennessee; highest east of Rockies.
MOORE, TENN. CONS. DEPT.

Garvarnie Falls—France; highest in Europe.
FRENCH GOV'T TOURIST OFFICE.

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The

DRY FALLS

COMPARED WITH FAMOUS WATERFALLS OF THE WORLD

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BY C. FRANK BROCKMAN