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Second Battle of Ypres

During the First World War, the **Second Battle of Ypres** was fought from 22 April – 25 May 1915 for control of the tactically important high ground to the east and south of the Flemish town of Ypres in western Belgium. The First Battle of Ypres had been fought the previous autumn. The Second Battle of Ypres was the first mass use by Germany of poison gas on the Western Front.

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Background

The eminent German chemist Walther Nernst, who was in the army in 1914 as a volunteer driver, saw how trenches produced deadlock. He proposed to Colonel Max Bauer,

Second Battle of Ypres

Part of the Western Front of the First World War



German diagram showing the new front line after the 2nd Battle of Ypres

Date 22 April – 25 May 1915

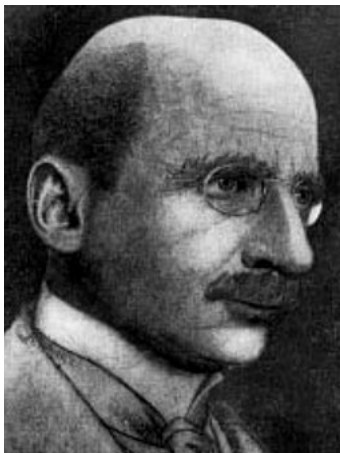
Location Ypres, Belgium
50°53′58″N 02°56′26″E﻿ / ﻿50.90°N 2.94°E﻿ / 50.90; 2.94

Result See *Analysis* section

Territorial changes British withdraw to a new line 3 miles closer to Ypres

Belligerents

- | | |
|---|---|
| British Empire | German Empire |
| <ul style="list-style-type: none"> Canada India | |



Fritz Haber, a German chemist who proposed the use of the heavier-than-air chlorine gas as a weapon to break the trench deadlock

the German general staff officer responsible for liaison with scientists, that they could empty the opposing trenches by a surprise attack with tear gas. Observing a field test of this idea, the chemist Fritz Haber instead proposed using heavier-than-air chlorine gas^[1]

The German commander Erich von Falkenhayn agreed to try the new weapon, but intended to use it in a diversionary attack by his 4th Army.^[2] Falkenhayn wanted to use the gas to cover the withdrawal of Imperial German Army units to the

Eastern Front to assist its ally Austria-Hungary in the Gorlice–Tarnów offensive against the Russian Empire.^[3] The gas would be released by siphoning liquid chlorine out of cylinders; the gas could not be released directly because the valves would freeze; wind would carry the gas to the enemy lines. 5730 gas cylinders, the largest weighing 40 kilograms (88 lb) each, were carried into the front line. Installation was supervised by Haber, Otto Hahn, James Franck and Gustav Hertz. Twice cylinders were breached by shell fire, the second time three men were killed and fifty wounded. Some of the Germans were protected by miners's oxygen breathing apparatus.

The Ypres salient was selected for the attack. It followed the canal, bulging eastward around the town. North of the salient, the Belgian army held the line of the Yser and the north end of the salient was held by two French divisions.^[4] The eastern part of the salient was defended by the Canadian and two British divisions. The II Corps and V Corps of the Second Army comprised the 1st, 2nd and 3rd Cavalry Divisions and the 4th, 27th, 28th, Northumbrian, Lahore and 1st Canadian divisions.^[5]

Battle

In *A record of the Engagements of the British Armies in France and Flanders, 1914–1918* (1923 [1990]) E. A. James used *The Official Names of the Battles and Other Engagements Fought by the Military Forces of the British Empire during the Great War, 1914–1919, and the Third Afghan War, 1919: Report of the Battles Nomenclature Committee as approved by the Army Council*

- United Kingdom

- France

- Algeria

- Morocco

- Belgium

Commanders and leaders

- Horace Smith-Dorrien (replaced by)

- Herbert Plumer (6 May 1915~)

- Arthur Currie

- Henri Gabriel Putz

- Armand De Ceuninck

- Albrecht of Württemberg

Strength

2 French divisions

6 British divisions

7 divisions

Casualties and losses

French: 2,000–3,000 to 21,973

British: 59,275

35,000+



Ypres, a Belgian municipality in the Flemish province of West Flanders

(1921) to provide a summary of each engagement and the formations involved. In The Battles of Ypres, 1915 six engagements involving the Second Army were recorded, four during the Second Battle (22 April – 25 May).

- Battle of Gravenstafel: Thursday 22 April – Friday 23 April
- Battle of St. Julien: Saturday 23 April – 4 May
- Battle of Frezenberg: 8–13 May
- Battle of Bellewaarde: 24–25 May

Battle of Gravenstafel Ridge (22–23 April 1915)

On 22 April 1915 at about 5:00 p.m., the 4th Army released 171 t (168 long tons) of chlorine gas on a 6.5-kilometre (4.0 mi) front between the hamlets of Langemark (50°55′N 02°55′E﻿ / ﻿50.891°N 2.979°E﻿ / 50.891; 2.979) and Gravenstafel (50°55′N 02°55′E﻿ / ﻿50.891°N 2.979°E﻿ / 50.891; 2.979) on the Allied line held by French Territorial and *Troupes coloniales* (Moroccan and Algerian troops) of the French 45th and 87th divisions.^[6] The French troops in the path of the gas cloud suffered 2–3,000 casualties, with 800 to 1,400 fatalities.^[7] Troops fled in all directions,

...haggard, their overcoats thrown off or opened wide, their scarves pulled off, running like madmen, directionless, shouting for water, spitting blood, some even rolling on the ground making desperate efforts to breathe.

— Colonel Henri Mordacq, 90th Infantry Brigade^[8]



Depiction of the German gas attack on French Territorial and soldiers of the *Troupes coloniales*, which was launched on 22 April

A 6 km (4 mi) gap in the French front was left undefended. German infantry followed well behind the cloud, breathing through cotton pads soaked with sodium thiosulfate solution and occupied the villages of Langemark and Pilkem, where they dug in, even though they might have occupied Ypres almost unopposed.^[9] They had taken 2,000 prisoners and 51 guns. Canadian troops defending the southern flank of the break-in identified chlorine because it smelled like their drinking water. The Germans released more chlorine gas at them the following day. Casualties were especially heavy for the 13th Battalion of the Canadian Expeditionary Force (CEF), which was enveloped on three sides and had over-extended its left flank after the Algerian Division broke.^[10]

In an action at Kitcheners' Wood, the 10th Battalion of the 2nd Canadian Brigade was ordered to counter-attack in the gap created by the gas attack. They formed up after 11:00 p.m. on 22 April, with the 16th Battalion (Canadian Scottish) of the 3rd Brigade arriving to support the advance. Both battalions attacked with over 800 men, in waves of two companies each, at 11:46 p.m. Without reconnaissance, the battalions ran into obstacles halfway to their objective. Engaged by small-arms fire from the wood, they began an impromptu bayonet charge. The attack cleared the former oak plantation of Germans at a 75 per cent casualty rate.^[11] The British press were confused

by the attack:

The Germans set fire to a chemical product of sulphur chloride which they had placed in front of their own trenches, causing a thick yellow cloud to be blown towards the trenches of the French and Belgians. The cloud of smoke advanced like a yellow low wall, overcoming all those who breathed in poisonous fumes. The French were unable to see what they were doing or what was happening. The Germans then charged, driving the bewildered French back past their own trenches. Those who were enveloped by the fumes were not able to see each other half a yard apart. I have seen some of the wounded who were overcome by the sulphur fumes, and they were progressing favourably. The effect of the sulphur appears to be only temporary. The after-effects seem to be a bad swelling of the eyes, but the sight is not damaged.

— *The Daily Mail* (26 April 1915)^[12]

Dusk was falling when from the German trenches in front of the French line rose that strange green cloud of death. The light north-easterly breeze wafted it toward them, and in a moment death had them by the throat. One cannot blame them that they broke and fled. In the gathering dark of that awful night they fought with the terror, running blindly in the gas-cloud, and dropping with breasts heaving in agony and the slow poison of suffocation mantling their dark faces. Hundreds of them fell and died; others lay helpless, froth upon their agonized lips and their racked bodies powerfully sick, with tearing nausea at short intervals. They too would die later—a slow and lingering death of agony unspeakable. The whole air was tainted with the acrid smell of chlorine that caught at the back of men's throats and filled their mouths with its metallic taste.

— Captain Alfred Oliver Pollard, *The Memoirs of a VC* (1932)^[12]

The Germans reported that they treated 200 gas casualties, 12 of whom died. The Allies reported 5,000 killed and 15,000 wounded.^[13]

Within days the British were advised by John Scott Haldane to counter the effects of the gas by



Langemark-Poelkapelle:
 Photograph taken from a position just west of Langemark German war cemetery, facing approximately north, towards the former location of the German trench from which the first gas attack was launched on 22 April 1915. In this area, the German trench system ran approximately from the farmhouse on the left to the group of willow trees on the right.

urinating into a cloth and breathing through it. Both sides set about developing more effective gas masks.

Battle of St. Julien (24 April - 5 May)

The village of St. Julien (now Sint-Juliaan; 50.890°N 2.937°E﻿ / ﻿50.890°N 2.937°E) was in the rear of the 1st Canadian Division until the poison-gas attack of 22 April, when it became the front line. Some of the first fighting in the village involved the stand of lance corporal Frederick Fisher of the 13th Battalion CEF's machine-gun detachment; Fisher went out twice with a handful of men and a Colt machine gun, preventing advancing German troops from passing through St. Julien into the rear of the Canadian front line. He was killed the following day.^[14]

On the morning of 24 April, the Germans released another gas cloud towards the re-formed Canadian line just west of St. Julien. Word was passed to the troops to urinate on their handkerchiefs and place them over their nose and mouth.^{[15][a]} The countermeasures were insufficient, and German troops took the village.^[17] The next day the York and Durham Brigade units of the Northumberland Division counter-attacked, failing to secure their objectives but establishing a new line closer to the village.^[18] On 26 April 4, 6 and 7 Battalions, the Northumberland Brigade, the first Territorial brigade to go into action, attacked and gained a foothold in the village but were forced back, having suffered 1,954 casualties.^[19] Despite hundreds of casualties, the 2nd Battalion Royal Dublin Fusiliers participated without respite in the battles at Frezenberg and Bellewaarde. On 24 April the battalion, subjected to a German gas attack near St. Julien, was nearly annihilated.

The German Army first used chlorine-gas cylinders in April 1915 against the French Army at Ypres,^[b] when yellow-green clouds drifted towards the Allied trenches. The gas had a distinctive odour, resembling pineapple and pepper. The French officers, assuming at first that the German infantry were advancing behind a smoke screen, alerted the troops. When the gas reached the front Allied trenches, soldiers began to complain of chest pains and a burning sensation in the throat.

Captain Francis Scrimger of the 2nd Canadian Field Ambulance may have passed the order to use urine to counteract the gas, on the advice of Lieutenant-Colonel George Gallie Nasmith. Soldiers realised they were being gassed and many ran as fast as they could. An hour after the attack began, there was a 1,500-yard (1.4 km) gap in the Allied line.^[20] Fearing the chlorine, few German soldiers moved forward and the delay enabled Canadian and British troops to retake the position before the Germans could exploit the gap.^[21]

After the first German chlorine-gas attacks, Allied troops were supplied with masks of cotton pads soaked in urine; it had been discovered that the urea in the pad neutralised the chlorine. The pads were held over the face until the gas dispersed. Other soldiers preferred to use a handkerchief, sock or flannel body-belt, dampened with a sodium-bicarbonate solution and tied across the mouth and nose, until the gas passed. Soldiers found it difficult to fight like this, and attempts were made to develop a better means of protection against gas attacks.^[22] By July 1915, soldiers received efficient gas masks and anti-asphyxiation respirators. Private W. Hay of the Royal Scots arrived in Ypres just after the chlorine-gas attack on 22 April 1915:^[22]

We knew there was something was wrong. We started to march towards Ypres but we couldn't get past on the road with refugees coming down the road. We went along the

railway line to Ypres and there were people, civilians and soldiers, lying along the roadside in a terrible state. We heard them say it was gas. We didn't know what the Hell gas was. When we got to Ypres we found a lot of Canadians lying there dead from gas the day before, poor devils, and it was quite a horrible sight for us young men. I was only twenty so it was quite traumatic and I've never forgotten nor ever will forget it.

— Private W. Hay of the Royal Scots^[12]

The French soldiers were naturally taken by surprise. Some got away in time, but many, alas! not understanding the new danger, were not so fortunate, and were overcome by the fumes and died poisoned. Among those who escaped nearly all cough and spit blood, the chlorine-attacking the mucous membrane. The dead were turned black at once. About 15 minutes after letting the gas escape the Germans got out of their trenches. Some of them were sent on in advance, with masks over their heads, to ascertain if the air had become breathable. Having discovered that they could advance, they arrived in large numbers in the area on which the gas had spread itself some minutes before, and took possession of the arms of the dead men. They made no prisoners. Whenever they saw a soldier whom the fumes had not quite killed they snatched away his rifle and advised him to lie down "to die better."

— *The Daily Chronicle* (26 April 1915)^[12]

Battle of Frezenberg (8-13 May)

The Germans moved field artillery forward, placing three army corps opposite the 27th and 28th Divisions on the Frezenberg ridge (50.868°N 2.950°E﻿ / ﻿50.868°N 2.950°E﻿ / 50.868; 2.950).^[23] The German attack began on 8 May with a bombardment of the 83rd Brigade in trenches on the forward slope of the ridge, but the first and second infantry assaults were repelled by the survivors. However, the third German assault of the morning pushed the defenders back. Although the neighbouring 80th Brigade repulsed the attack, the 84th Brigade was pushed back; this left a 2-mile (3.2 km) gap in the line. The Germans were prevented from advancing further by Princess Patricia's Canadian Light Infantry (PPCLI)'s counter-attacks and a night move by the 10th Brigade. The PPCLI held the line at a steep cost; their 700-man force was reduced to 150, who were in no shape to fight. After this, their unofficial motto—"Holding up the whole damn line"—is still used today.^{[24][c]}



George Nasmith, the head of the field laboratory for the Canadian Expeditionary Force, advised a Canadian field ambulance officer to pass the order to use urine to counteract the gas.



Artillery barrage on Allied trenches at Ypres. The Germans began an artillery bombardment of the forward slope of Frezenberg ridge on 8 July.

Battle of Bellewaarde (24-25 May)

On 24 May the Germans released a gas attack that hit Shell Trap Farm and to the area around the north west, which was affected the most by the attack. A report of the event by Captain Thomas Leahy, of the 2nd Royal Dublin Fusiliers, shows that their C.O. Lieutenant Colonel Arthur Loveband suspected a gas attack and had warned all company officers. Later the Germans threw up red lights over their trench, which would signal a gas release.^[25]

We had only just time to get our respirators on before the gas was over us.

— Captain Thomas Leahy

German forces managed to advance and occupy the British line to north and left of the Battalion. The Battalion was now under heavy fire from the German forces. But with shellfire and the aid from the 9th Argyll and Sutherland Highlanders they managed to hold their trenches to the end.^[25]

Germans advancing under cover of enfilade fire, in small parties, finally occupied Battalion line by 2.30pm. Shelling ceased but rifle and M.G. fire remained accurate and constant, whenever a target presented itself, until dusk.

— *The War Diary*



Grave in Kells, County Meath, Ireland of a Leinster Regiment soldier who died at Bellewaarde

Aftermath

Analysis

By the end of the battle, British forces had withdrawn to a new line 3 miles closer to Ypres, thereby resulting in a compression of its surrounding salient.^[26] The city, bombarded by artillery fire, was demolished. Although poison gas had been used on the Eastern Front, it surprised the Allies and about 7,000 gas casualties were transported in field ambulances and treated in casualty clearing stations. In May and June, 350 British deaths were recorded from gas poisoning.^[27] Both sides developed gas weapons and counter-measures, which changed the nature of gas warfare; the French and British used gas at the Battle of Loos in late September.^[28] Gas protection was somewhat improved with the issue of improvised respirators made from cotton waste pads impregnated with sodium hyposulphite, sodium bicarbonate and glycerin. The respirators made little difference, however, due to lack of training and the use of local contraptions and poorly made items imported from Britain. The "P helmet" (or "Tube Helmet") soaked in sodium phenate was issued by December 1915, and the PH helmet (effective against phosgene) was issued in early 1916.^[29]

Although many French troops ran for their lives, others stood their ground and waited for the cloud to pass. Field Marshal Sir John French, Commander-in-Chief of the British Expeditionary



The city of Ypres before (left), and after (right) the Second Battle of Ypres. Bombarded by artillery fire, most of the city was demolished.

Force, wrote,

... I wish particularly to repudiate any idea of attaching the least blame to the French Division for this unfortunate incident. After all the examples our gallant Allies have shown of dogged and tenacious courage in the many trying situations in which they have been placed throughout the course of this campaign it is quite superfluous for me to dwell on this aspect of the incident, and I would only express my firm conviction that, if any troops in the world had been able to hold their trenches in the face of such a treacherous and altogether unexpected onslaught, the French Division would have stood firm.

— French^[30]

The Canadian Division mounted an effective defence but had 5,975 casualties by its withdrawal on 3 May. The division was unprepared for the warfare prevailing on the Western Front, where linear tactics were ineffective against attackers armed with magazine rifles and machine guns. The Canadian field artillery had been effective but the deficiencies of the Ross rifle worsened tactical difficulties. The Canadian Division received several thousand replacements shortly after the battle.^[31] At Second Ypres, the smallest tactical unit in the infantry was a company; by 1917 it would be the section. The Canadians were employed offensively later in 1915 but not successfully. The battle was the beginning of a long period of analysis and experiment to improve the effectiveness of Canadian infantry weapons, artillery and liaison between infantry and artillery.^{[32][d]}

Casualties

After the war, German casualties from 21 April to 30 May were recorded as 34,933 by the official historians of the *Reichsarchiv*. In the British Official History, J. E. Edmonds and G. C. Wynne recorded British losses of 59,275 casualties, the French about 18,000 casualties on 22 April and another 3,973 from 26 to 29 April.^[33] Canadian casualties from 22 April to 3 May were 5,975, of whom about 1,000 men were killed. The worst day was 24 April, when 3,058 casualties were suffered during infantry attacks, artillery bombardments and gas discharges.^[34] In 2003, Clayton wrote that thousands of men of the 45th and 87th divisions ran from the gas but that the number of casualties was low. The Germans overran both divisions' artillery but the survivors rallied and held a new line further back.^[35] In 2010, Humphries and Maker, in their translated edition of *Der Weltkrieg* recorded that by 9 May, there had been more than 35,000 German casualties, 59,275 British between 22 April and 31 May and very many French casualties, 18,000 on 22 April alone.^[36] In 2012, Sheldon gave similar figures and in 2014, Greenhalgh wrote that French

casualties had been exaggerated by propaganda against German "frightfulness" and that in 1998, Olivier Lepick had estimated that 800–1,400 men were killed by gas in April out of 2,000–3,000 French casualties.^[37]

Lance Sergeant Elmer Cotton described the effects of chlorine gas,

It produces a flooding of the lungs—it is an equivalent death to drowning only on dry land. The effects are these—a splitting headache and terrific thirst (to drink water is instant death), a knife edge of pain in the lungs and the coughing up of a greenish froth off the stomach and the lungs, ending finally in insensibility and death. The colour of the skin from white turns a greenish black and yellow, the tongue protrudes and the eyes assume a glassy stare. It is a fiendish death to die.

— Cotton^[38]

Subsequent operations

The First Attack on Bellewaarde was conducted by the 3rd Division of V Corps on 16 June 1915 and the Second Attack on Bellewaarde, a larger operation, was conducted from 25 to 26 September 1915 by the 3rd Division and the 14th Division of VI Corps. The Battle of Mont Sorrel (2–13 June 1916) took place south of Ypres with the 20th Division (XIV Corps) and the 1st, 2nd and 3rd Canadian divisions of the Canadian Corps.^[39] The Third Battle of Ypres, also known as the Battle of Passchendaele, was fought from 31 July to 10 November 1917.^[40]

Commemoration

Canadian participation in the Battle of Gravenstafel is commemorated on the Saint Julien Memorial in the village. During the Second Battle of Ypres, Lt. Col. John McCrae M.D. of Guelph wrote "In Flanders Fields" in the voice of those who perished in the war. Published in *Punch* 8 December 1915, the poem is still recited on Remembrance Day and Memorial Day.^{[41][42]}



Canadian participation during the Second Battle of Ypres is commemorated at the Saint Julien Memorial.

Victoria Cross recipients

- Lance Sergeant D. W. Belcher, London Rifle Brigade (TF), 11th Brigade, 4th Division^[43]
- Captain E. D. Bellew, 7th Battalion, British Columbia Regiment, 2nd Canadian Brigade, 1st Canadian Division^[44]
- Jemadar Mir Dast, 55th Rifles (att. 57th Rifles), Ferozepore Brigade, Lahore Division^[45]
- Lance Corporal F. Fisher, 13th Battalion Royal Highlanders of Canada, 3rd Canadian Brigade, 1st Canadian Division^[14]
- Company Sergeant-Major F. W. Hall, 8th Battalion, Winnipeg Rifles, 2nd Canadian

Brigade^[46]

- Private J. Lynn, 2nd Lancashire Fusiliers, 12th Brigade, 4th Division^[47]
- 2nd Lieutenant W. B. Rhodes-Moorhouse, 2 Squadron, Royal Flying Corps^[48]
- Captain F. A. C. Scrimger (Canadian Army Medical Service), 14th Battalion, Royal Montreal Regiment^[49]
- Corporal I. Smith, 1st Manchesters, Jullundur Brigade, Lahore Division^[45]
- Private E. Warner, 1st Bedfordshires, 15th Brigade, 5th Division^[50]

See also

- First Battle of Ypres
- Chemical weapons in World War I
- Saint Julien Memorial
- Battle of Passchendaele
- List of Canadian battles during the First World War

Notes

- The order is attributed to a Medical Officer, Capt. F.A.C. Scrimger.^[16] Memoirs of two individuals at the battle do not recount this episode (see Nasmith, 1917 and Scott, 1922), though Nasmith, a chemist and bacteriologist who was commissioned in the C.A.M.C. as a laboratory and sanitation officer, recognised the gas on sight as chlorine and the following day began work on devising an effective way to counteract the gas. Urea in urine would react with chlorine, neutralising it by forming dichlorourea. See Chattaway (1908).
- Chlorine gas destroyed the respiratory organs of its victims and this led to a slow death by asphyxiation. One nurse described the death of one soldier who had been in the trenches during a chlorine gas attack. "He was sitting on the bed, fighting for breath, his lips plum coloured. He was a magnificent young Canadian past all hope in the asphyxia of chlorine. I shall never forget the look in his eyes as he turned to me and gasped: I can't die! Is it possible that nothing can be done for me?" Chlorine made the victim cough and therefore limited his intake of the poison. Both sides found that phosgene was more effective, since only a small amount was needed to make it impossible for the soldier to keep fighting. It also killed its victim within 48 hours of the attack.
- The battle was immortalized in a painting by William Barnes Wollen which depicts Princess Patricia's Canadian Light Infantry as they fought to halt the German attack on Frezenberg. The original mural hangs in the Senate of the main Parliament Building in Ottawa, Ontario, Canada. In the battle, 2/3 of the regiment were either killed or wounded and all but two officers were killed or wounded in the battle. By the end of the battle, the regiment was commanded by a lieutenant.
- Another Canadian division joined the British Expeditionary Force in late 1915, joined eventually by two more in 1916. The battle also blooded many commanders, singling out some for praise, such as brigade commander Arthur Currie, and others for criticism, such as Garnet Hughes. The inadequacies of training and doctrine in the early CEF was made obvious by the antique tactics used at Kitcheners' Wood

and St. Julien, though tactics in the British Armies would be slow to evolve.^[32]

Footnotes

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32. [Rawling 1992](#), pp. 35–36.
33. [Edmonds & Wynne 1995](#), pp. 359, 284.
34. [Rawling 1992](#), p. 35.
35. [Clayton 2003](#), p. 68.
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37. [Sheldon 2012](#), p. 116; [Greenhalgh 2014](#), p. 91.
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39. [James 1990](#), pp. 8–9.
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- [Second Battle of Ypres Overview \(https://cjmorton.org/ww1service/ww1/overview/ypres.html\)](https://cjmorton.org/ww1service/ww1/overview/ypres.html)
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