Pr. Gabriel Richet

Start with Paris 2012.

Dear reader, the following is the faithful transcription of an interview with Gabriel Richet on ..... We purposely kept it in its original style to preserve the spontaneity of speach.

I've always had a lot of luck. I did a lot of silly things and generally, the result was quite joyful. That's about it. I was very bold during the war in 39-40 and in 44-45 and also the time in between, but it was a little different in between. I was injured, a bullet entered the top of my right thigh and was found against the left femoral artery, 60 centimeters of stitches and then 60 days later, I went back to the front! That is to say that I am a rather adventurous character.

Medicine? I don’t know why I chose to study medicine, but when I was in sixth form – (I was 16), on a Tuesday morning, I was bored during the correction of a Latin translation, I decided that I would study medicine, it was a Tuesday morning in February 1933. Of course, there was the weight of my name, my grandfather had been awarded the Nobel Prize for Medicine ... he had twenty grandchildren and I'm the only one to have followed in his footsteps in medicine.

My great-grandfather was Alfred Richet and he was Head of the Medical Department in the Salpêtrière Hospital between 1840 and 1870 and professor of surgery at the Chair of Surgery of the Hôtel-Dieu in Paris; my grandfather was Charles Richet, Nobel Prize winner in 1913 for having discovered anaphylaxis in 1902; my father was a professor at La Pitié Hospital ..... This is the long history that made things easier for me, but which weighed heavily on my behaviour.

... There is nothing to do yet you can do everything, try everything ... You can't get rid of yours ancestors.

My father and mother were both doctors, they had six children and I'm the only one to have studied medicine. I think since my birth it was written in my genes.

Nephrology? This is because I was a student of Pasteur Vallery-Radot ... I can show you a photograph in 1937 ....  
I started my career at Broussais Hospital with Pasteur Vallery-Radot but I was not very happy there so therefore was enthusiastic to follow Jean Hamburger when he left Pasteur Vallery-Radot in 1950 to go to Necker Hospital for ten years.

So, starting to practise a speciality that did not exist... – there was no nephrology in 1945 – Why do you think there is a speciality when there is no treatment?  
The Nephrology clinic was created, and was created well, when there were the « snipers » who were involved in the treatment of uremia, of acute uremia to be more exact, but they were wrong because they put all their efforts in chronic uremia, it was hopeless.

You need to focus on the adventure of others and I can tell you that when you look at
the first Kolff’s work that was published in French in the medical press in April 1944, he put in his dialysis solution, just water and sodium chloride. Potassium?... Nobody knew...! Acid base? Nobody knew...!
And this is something extraordinary for Kolff and Alwall to have committed so many knowledgeable negligences, while the electrolyte composition of the blood was well known for a long time.

This error has allowed us to rediscover the concept of the internal environment of Claude Bernard and others. This is to show you that we always start something after a mistake has been made...
I knew Henri Roger who was the Dean of the Faculty of Medicine of Paris around 1925 – I was at school with his son – I read a piece he wrote, which I kept, repeating : "Medicine in particular is a science that makes progresses through errors that have been corrected and not by making great discoveries."

Medical residents wrote a song, it was in 1956, we were at Necker Hospital and the dialysis residents mocked dialysis by saying in their song: ".... in the artificial kidney, Gabriel pissed ....".
Well, I don’t think I exposed myself to this error changing knowledge of the artificial kidney and dialysis bath!

Medicine is made to cure diseases, so if you find something that you can’t use for healing, it could be very interesting, but you must go to the Faculty of Literature of Paris.
But if you want to heal patients, to be able to administer an intelligent therapy you must know a little therapeutic and biological basics.

When we arrived with Jean Hamburger at Necker Hospital in January 1951, (you need to know how the electrolyte balance was held with contempt). We didn’t know yet that urea and other nitrogenous wastes did not cause death, but the cause of death was the retention of potassium.
We had forgotten the work of Feltz and Ritter who in 1881 wrote a 300 pages book on the toxicity of potassium.
You’ve probably never heard of these two people, you’ve probably never read this book ... but so what, I must continue my education, and yours at the same time!

And why has potassium been discovered? Because there were portable electrocardiographs. I knew of the electrocardiogram immediately after the war in general practice. When we wanted to do an electrocardiogram, devices weighed as much as your technicians’ equipment which were there because they had very heavy batteries.
And suddenly, after the war, there were portable electrocardiogram devices with direct printing at the patient's bed side, and when we had one, we had pointed T waves of hyperkalemia and everything changed for the better.

So this is to say that, first, it’s necessary to be specialized and secondly, it's necessary to have a very open mind. How do you keep an open mind?
Well it’s very simple, it’s by examining your patients that you find surprising facts.
From the time I worked with Mr R., I had the bad habit of saying... "You're crossing the boulevard of the Italians with the Boulevard Montparnasse", but one is on the
right bank and the other on the left bank of the Seine, they do not intersect".

The right to astonish oneself, the need to astonish oneself, to find an anomaly in the reasoning process, by thinking outside of the lines.... I think this idea is still present in our speciality, and when our speciality evolves, we must have the courage, which I did not have, to abandon all the knowledge you had, the unresolved issues against which you found yourselves, and you have to make the correct choice at the right time in order to solve a problem.

I remember one of my bosses whose name I will not mention ... When I started to practice in '45, returning from the war, we were all doing internal medicine and there was someone a little older who had back pain who was given large doses of vitamin D and it worked. This boss told me: "I administered it but I do not know how it works, but empirically, it works" and then we learned that these patients had uremic osteopathy with all that it entails, and the kidney was an organ that transformed vitamin D ...

As you know, we also tackled acute uremia, the whole school of Paris tackled acute uremia, then we realized that there was an acute uremia which intervened between severe infection and death, and that acute uremia could heal as the toxic mercury chloride uremia did, by sublimate or by carbon tetrachloride. It was encouraging ... there were a few patients who could have been saved but were dying because we could not keep them alive for as long as two weeks. And that is something that is very important because it changed the medical way of thinking more broadly, beyond nephrology, as we shall see later.

The first attempt which was made in France in 1947 and was successful; was the exchange transfusion, seven or eight litres of blood, and this was due to the work of Paul Milliez in the service of Pasteur Vallery Radot. He succeeded him one decade later.

This method did not last because there were difficulties in obtaining enough litres of blood, we only knew the Rh factor apart from other major blood groups, and the effectiveness of exchange transfusion on humoral disorders was poor so they were abandoned.

The second attempt was made in particular at the Necker Hospital. It was the intestinal infusion by a naso-jejunal probe with discharge by natural means. And then at that point, there was a patient whom I remember. She came to Necker on June 6th, 1951: She was a mother of four children, her last child was born a few days early and she got a severe pelvic infection that was cured with penicillin, she was also anuric.

But then we were doubly lucky: she was a robust peasant, I would say like a Verdun soldier or the equivalent, and secondly she had a husband who used to behave like a brute.

So there were two rare things that occurred...... let me explain : We gave her an infusion probe. After 24 hours, she couldn’t stand the probe any longer and she ripped it out. Her husband came to see her at the end of the morning and Prof Hamburger
told him: "We're sorry, but your wife just riped out her probe and it was her only chance of survival."

Her husband answered: "Fine", went to see his wife who was nearby, only 4 or 5 meters away, and said: "You bitch" – which was not a very nice thing to say – "You cost me a lot of money in ambulance and transport fees to come to Paris from Loir-et-Cher (near Blois), and then you rip out your probe, what am I going to do with our four kids?" and he gave her two slaps across the face just as my mother did to me on several occassions.

After this she kept her infusion probe for 11 days and she was cured.
I can tell you that this case study, which we published in the Société Médicale des Hôpitaux, taught us all about spontaneously reversible acute renal failure. So ... Not only this technic kept her alive, but it also kept a mother by her children, a wife by her husband, whose strength she admired.

She served as a reference for future cases: a number of times I came back and was able to describe a phenomenon from these cases ...... So this is, for example, the production of endogenous water by the destruction of the kidney by anuria.

During anuries fat burns and to burn 1g of fat, the body produces 1g of water, so that if you do not evacuate the water as it does with new artificial kidneys with ultrafiltration, you get water overload, which is a phenomenon that might be studied ...... but there should be the will to. I won't insist.

Then there was peritoneal dialysis.
The first peritoneal dialysis, I don't know where they happend, but in France they began in '47 with a man called Pierre Tanret who tried intestinal dialysis, it was an amazing DIY (Do It Yourself)...

There were very complicated technics: intestinal dialysis, peritoneal dialysis and artificial kidney. We went from biology to very simple physico-chemical laws: it was called dialysis, described in 1825 by Dutrochet. It was famous, but it was forgotten ..... We forgot that there were people who worked before the end of the Second World War.
Peritoneal dialysis still exists and works very well, and it is at the Hôtel-Dieu that peritoneal dialysis in France became the extraordinary treatment of acute renal failure. It was replaced by the artificial kidney ...

Later, in Europe, began methods of renal replacement therapy, extra-corporeal ...... I'll tell you a typical story of what happened to me. In the United States, the artificial kidney has benefited from the work of a person who has done a good job, I mean Merrill of Boston, who in 1952 published an excellent article in "Medicine" about it. But everywhere else, nobody cared about dialysis, everyone, or almost everyone thought that conservative treatment was the only kind of treatment that could work and put aside all the troubles of the first artificial kidney – and they were considerable – and the difficulties of peritoneal dialysis, this method, it was thought, could not be used for surgical cases concerning the abdomen, even though it does work very well.

Well, I was in New York and a senior in '54 told me: "Why the hell did you go to Boston to learn the handling of the Kolff Merrill artificial kidney, while in New York we
don't need it anymore?"

They told me: "These are the descendants of the ship that brought Puritans to Boston.

They told me that in 1954, and why? It's interesting to know why: because these patients were at this time treated in internal medicine, who used to see a case of anuria every 6 months, while Merrill used to accept the anuric patients sent to him by plane from all around the United States.

And for us, who at that time were at war in Algeria, with injured people that often were highly infected, we accepted patients at Necker coming from all over France, from Algeria and even from Chad, as the French Social Security paid their transport fees, while private hospitals in America had many difficulties at this time for a refund. It's fun and it's interesting to see when social policy is involved in wide or narrow implementation of treatment. Through French social policy, in Paris, then quickly in Lyon and Toulouse, and everywhere in France, we have gained experience of medical treatment with these patients. I will not discuss thus except to say that in 1957, ie three years later, I went to South America to install in Sao Paulo the first artificial kidney, because there was a South American student who spent a while with us at Necker.

Then the same year, I was invited to represent the French group at a meeting organized by the U.S. military for the treatment of acute renal failure, and here is the photo with the names of all of those who were there. There were two Europeans, one who despised the artificial kidney, and myself who advocated dialysis. I brought a statistic that exceeded all American statistics largely because patient numbers were concentrated in one area in France.

And you will find the same problem during development of renal biopsy. There comes a time, when you want to get ahead and get right down to applying a new observation, a new treatment, where patients must be grouped together so that you know immediately how to get and interpret the results.

I told you that we received many patients; at this time, the artificial kidney, the treatment of acute renal failure by dialysis, was the basis of the principle of intensive care.

I'll show you later and I'll quickly find a book of intensive care that I published with Hamburger and Crosnier, which we wrote in September '52, which was printed in March '54 by Flammarion; it was the first book concerning reanimation, the gateway to the ICU.

And so, that's why we started with this. After I'll tell you why we abandoned it.

Why did we start with this?
Because during the return of summer holidays of 1952, we made a case review. The big boss Jean Hamburger was there some of the time while I was on vacation, and then he went on holiday when I came back. We then pointed out what was happening, we did not yet have the artificial kidney, we had in mind that there were other diseases than renal disease, that were potentially life-threatening, but they were possibly reversible. It was in this case necessary to have these theoretical and practical notions, prepared in our minds as in our material. And thus the case was launched.
And I think this is another demonstration that the systematic study of cases, in all specialties, lead to new ways of thinking.
Hamburger and I were driving to visit a patient at the American Hospital of Paris, and we went through the Bois de Boulogne; it was the normal route, and during this trip, we did not need to pay more attention than if we were on any one way circular road .... Hamburger said, "Well, we organize a day or two for reanimation, must we continue up that path or give up?"
And I must say that it is completely on his own merits. He asked me the question, I said "Why not? Continue."
We talked again a few days later and he said: "We should stop, because you should never have two goals in life," and I told him that when I came to the commandos, an old lieutenant told me: "If you have two goals, you'll reach none and there is a high risk of being killed, never accept a second goal."

We turn to the third chapter, which is the renal biopsy.
Renal biopsy was developed a little bit everywhere at the same time, not at Necker Hospital. There was a nephrologist from Siena (Italy) that we saw doing a renal biopsy in Necker; he was passing through, I forget his name, he was a very shy boy and he was crushed by the bulldozer style personalities of the city. You know very well, I don’t need to make you a picture, the industry always wins.

We brought to Paris Claus Brun who wrote an article on renal biopsy. There was the group which at that time was in a suburb of Chicago in Cook County Hospital, with Kark who was the English boss of this department of medicine, and there were Muehrcke and Pollak next door, who were rather more nephrologists and who had done some renal biopsies.
I heard in Atlantic City in May 1954, Muehrcke present 5 or 6 renal biopsies of very different diseases but without making the "conversion", as Latin scholars would have said, or obstetricians when they speak of the child they had to deliver.
This conversion, I spoke of it with Hamburger, we established it immediately.

We were doing renal biopsies to determine the initial lesions of kidney disease, but not to do something in place of pathologists, who observed autopsy kidneys that were completely destroyed.
And as it was us who did the biopsy, we knew we were looking for something to lighten a dark night of knowledge, therefore we did it with a particular spirit.
That was the first thing.

The second thing we'll see is the beginning of the electron microscope, we have developped at the same time electronic microscopy and usual optical microscopy.
This allowed us to identify all cells, to rediscover mesangial cells which had been forgotten, and of which we now know the importance.
And from '55-'56 in Paris, we had a definitive certitude on renal lesions, the cellular anomalies, structure anomalies, because there are not just cells in the kidney, but also arrangement structures which are immensely important.
It was already something quite remarkable, given the fact that there was in '54-'55 only one electron microscope in Paris for the clinical research, and those who had installed this microscope were oncologists, a Professor of cancerology at the College
de France, and a pathologist.
And then our friend Paul Michielsen worked with this microscope between midnight and 4 am, as this was the only time day or night that it was not being used.

When pathologists and clinicians don’t speak the same language, the first thing to do is to establish a common language.
To establish this common language, we had to observe biopsies all together at the same time, clinicians and pathologists. And at that time there was a pathologist who said: "I found this type of injury"; another asked "What do you call this type of damage and why do you say that?" And after a few weeks, we all spoke a common language and this common language has led to the description of the extramembranous glomerulonephritis, pyelonephritis with medullar abscess in the kidney, and focal segmental glomerulosclerosis.

It’s for this reason that the Necker Hospital imposed renal biopsy and became the temple of the pathological anatomy of the kidney. And of course, the biopsy was also imposed on the rest of the world, because the moral authority of Hamburger was enough to blow the sails of the boats crossing the Mediterranea. You should know that, practically, when renal biopsy spread worldwide nephrology, we could start to study not uremia but renal pathology, we could investigate not the fatal kidney disease but kidney disease which may give 20-year survival.
What I can say is that there is no research in renal pathology without iterative renal biopsy.

The history of medicine is incredibly important.
It is acceptable not to know the history of medicine of the 19th century but at the moment, nobody knows the history of the past 10 years, so you can imagine... In your opinion, when were the flame photometer and pHmeter invented?

Well, you know, the entire beginning of Nephrology at Necker was done without pHmeter or flame photometer. Just think, without electrolyte balance pHmeter or flame photometer! Everything changed with the dosage of potassium twice a day, the sodium dosage to avoid moisture problems...

Now let’s finish with the case of Marius Renard.
Marius Renard, his story tells you nothing.
On December 18th, 1952 Marius Renard, who lived in a small village 60 km at the North of Paris, near Beauvais, was an apprentice roofer who fell from a roof three stories high on his right kidney which exploded, so the surgeon removed it, because he had huge hematuria and he was in anuria.
What the surgeon did not know was that this poor kid had only one functioning kidney.
He was taken to Paris to the urology department, Necker urologists addressed him to us because they did not know what to do. His mother proposed to donate one of her kidneys because she had seen a movie where there was supposedly a kidney transplant.
You must take into account all social life factors as well as all new developments in medicine.

The mother had almost all groups and all subgroups identical to those of her son and
a kidney transplant was carried out on December 25th at 9 pm at the Necker Hospital. A few days later, the news spread in the press, we’ll see later : the kidney worked but the glomerular filtration was never very good. The urea clearance was 25ml and dropped dramatically to 18ml 20 days after transplantation, ie long after and then it stopped suddenly. We reoperated to find out if there was not a surgical complication, but there was nothing, and death came.

And with this story we had three conclusions:

First, there was the HLA system that we did not know about yet, Dausset was just beginning his early work. There were small differences in subgroups, it was ultimately the same as a crash incompatibility transfusion intellectually.
Secondly, there were a number of small signs: the kidney became a little bigger, blood pressure measured every hour rose 5 millimeters during the last 2 days, from the 19th to 20th day. There was just one little thing, there was a trace of albumin in the urine, which did not exist before. Therefore, there were all the clinical signs which lead to the diagnosis of rejection which we well described at this time.
Third, a global social impact! Marius died, at his funeral, in his village, 50 meters of street were blocked by flowers coming from all over the world ... All over the world, people sent telegrams, because at that time there was no email, there was just nothing! Others said they were ready to donate a kidney to attempt a second transplant for Marius. This was the consequence, you know, world public opinion told Medicine: "Find a solution for kidney transplants."
And it is always thinking about well observed unique cases, which makes us progress in medicine.

The institution "Assistance Publique-Hôpitaux de Paris" considered immediately Necker Hospital, the Nephrology department of Necker as the place where it was necessary to do renovation work, and we went from 40m² to 100m² and so on. And seven years later, in '59, there was the Merrill transplantation technique, followed by the Hamburger's transplantation but at that time I was not a witness or an actor.

That's what I can tell you about how amazing this DIY was ... it's necessary to have an educated mind, but with an education that has not demolished the thinking process, because as Roger Martin du Gard wrote in "The Thibaults": "Let's hurry not be certain ..." I think it's in the "Father's Death" (1929) ; Martin du Gard awarded the Nobel Prize for Literature in '35 or something like that. You will understand the life of the French bourgeoisie in 1910.
If I only told you that, and if you let yourselves be seduced by the old man that I am, do read "The Thibaults" which has 2000 pages ...

Well that's what happened. The Necker team had friendships with most of all European countries, the United States and Canada, of course. But there gradually were Societies of Nephrology which were born in Western
Europe, mainly in England, Germany, Italy, Spain and Francophones have played a more important role in Switzerland and Belgium. There is no doubt that the nephrologic knowledge became international and it was necessary for us to have international recognition, which was not the case because until 1960 the United States and Canada did not want to consider Nephrology like an individual speciality.

So then, Hamburger – thanks to the strong reputation that he haloed – had simply decided one day at a dinner party where Jean Hamburger, Jean Cottet and I were, that: "We need to organise an international congress of nephrology." Jean Cottet was a great friend of Hamburger, he was a MD in Evian, a well known water source town, who worked on kidney care, and I was there as an assistant to Hamburger.

Hamburger said "We need to have an interview with the CEO of Evian," because there was a significant amount of money to put into the adventure. What happened some time later, was that we decided to have a conference in Geneva and Evian to immediately give an international label in facts and not simply in words.

We organized this conference, with two presidents: Jean Hamburger and René Mach, who was a professor of internal medicine in Geneva, and who was widely known, because he had written a book on sodium and water in pathology, which was published in 1946. This book was a very important starting point in understanding the hydroelectrolytic metabolism in renal disease.

This conference was held on 1, 2 and 3 September 1960, and was attended by 400 people, including a number of famous Americans in our profession, who sometimes came along with their families as facilities were available to them. They were extremely surprised by the thought intensity in Europe, even in countries of Eastern Europe, not just in England, Holland, Sweden and Germany. I mention Italy especially because Migone was the Italian representative on this committee. And all this was organized with the purpose of tourism for our American friends, but for an knowledgeable purpose for others.

If I could just tease a little, and that mainly because there was an American who arrived with his wife and six children. Well ... You understand that the goal was clearly defined. I might add that at this time, there wasn't a Society of Nephrology in the world outside of Europe. And that in the U.S., it was necessary for Merrill to use his authority in order to create a Society of Nephrology, and we know how important the American Nephrology later became, if not only due to the wonderful discovery of Scribner, which surpassed everything and this was due to the absolute need to find ingenuity for using the artificial kidney chronically.

I must say that the first results of Scribner were published at this congress of which we said: "Your results are three months old, so we'll see in a year's time."

There has been significant work on tubular micropuncture, but I realized at that time that microtubules and microtubule punctures did not lead to any practical decisions. There was on one hand the reprogrammed discovery by Michielsen and on the other hand glomerular mesangial cells by Palade and there have been many other works but I can't tell you the exact number ... It was published by the school of Toulouse:
the persistence of a renal blood flow in regressive anuria and no increase in renal blood flow at the time of diuresis resumption, which was a relatively important concept. This created the theoretical aspect of this congress.

I took care of all material and theoretical work, both mixed together at times.... Overall I prepared seating arrangements for all members of Congress for the banquet.
I placed an English physician between two Japanese professors and I learned shortly after that the Englishman had been a prisoner of war of the Japanese for 4 years in Singapore ... You see, sometimes, wanting to do too well, we do silly things...

I would like to talk about Tenon hospital’s school. When I arrived at Tenon, Pierre Ronco was 10 years old, he had not played a big role during the first years at Tenon! We had nothing, I found myself in the same situation as Hamburger at Necker in 1951 when he arrived, but I had accompanied Hamburger, ie I had learned from all the successes and failures we had been through to transform a general medical department into a specialised department and we got there. There were lots of fortunate circumstances that allowed me to advance much faster than some of my colleagues, but that doesn’t matter.

What is important is that as soon as we arrived at Tenon, with Raymond Ardaillou, Claude Amiel and I, we started to do clinical investigations which led to nothing, because we were unknown and results were published in French. Well, it was like that.
But anyway, the intellectual life of Tenon developed, and at the same time some positive circumstances came about, especially the reform by Michel Debré and some other circumstances also, which permitted us to have access to some new infrastructures, rooms and offices, at the same time that nephrology grew and developed.
So we had the chance to begin at a time when there was only Necker, especially as the Hotel Dieu, where Professor Dérot was at that time took care of diabetes more and more and less and less of kidneys, which almost left us without any competition, which I regretted because competition helps progress.

When I think that at Tenon for example, there existed a pathology discipline which was known for its precision, its rapid adaptation to new technologies, which was directed by Liliane Morel Maroger. When she came to see me to obtain a place as a 4th year medical student, firstly she was the mother of three children, including twins, and I think the oldest was two and a half, secondly, she had not yet graduated from pathological anatomy, and thirdly, she had the salary of a student ie virtually nothing, and when I think that she agreed to invest herself in the project...

When I think that, against all logic, Ardaillou and Amiel followed me to work at Tenon, where there was no hope of concrete and creative work ... Then there were others who went and who settled in the provinces or abroad. I think Tenon’s school survived. 25 years ago I left Tenon to retire, and I think Tenon’s school still lives after my departure.

Choose medicine? That doesn't mean especially nephrology, I would say to a student who would ask me the question: “Choose a branch that you love; to love it,
you must know it, therefore, to have measured its past and what can be its theoretical future, at the same time you must simultaneously conduct a creative biological work, but animated, fed by a medical culture”.

We are doctors in order to heal, if we do not have a healing goal, we make beautiful literature, but this I leave to others. What is stupid, profoundly stupid in our medical profession, is to believe that because you are protected by a powerful university hospital physician with a good reputation, that you can also become important. In this case, that kind of importance is shit.

Does poetry exist in our medical profession and if so, where? Well, this is not poetry, because you need to read verses to know if there is a thought that has been expressed with the delicacy and the strength that one wishes.

But I know that without heart, medicine does not exist.

Let me tell you about the time when I was a first year resident in July or August ’39, I was in surgery, the surgeon who had to operate told me after three or four minutes, "Damn, it's too late in the day, I'll let you finish ".... I had never done this type of surgery before.

My patient did not die, maybe he was not called up to go to war, because it was just before the war, and this may have saved his life, but what I can tell you is that I still have nightmares about on sleepless nights.

Computer medicine, it's not possible. It's just like Justice. Why are there still judges and not just computers, it is because there are things you can’t put in a computer.

A doctor is someone who decides; when he writes, he writes a prescription, ie he orders …

Is it possible to give an order and decide regardless of heart?

Unfortunately I know that many do not share my idea, but that's life.....

I am like the Queen of Holland, whose motto is: "I will maintain!"

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