



THE
CALIFORNIA
HOME

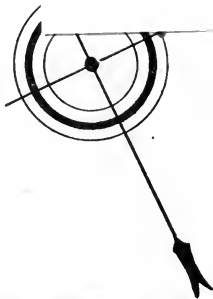
Our California Home



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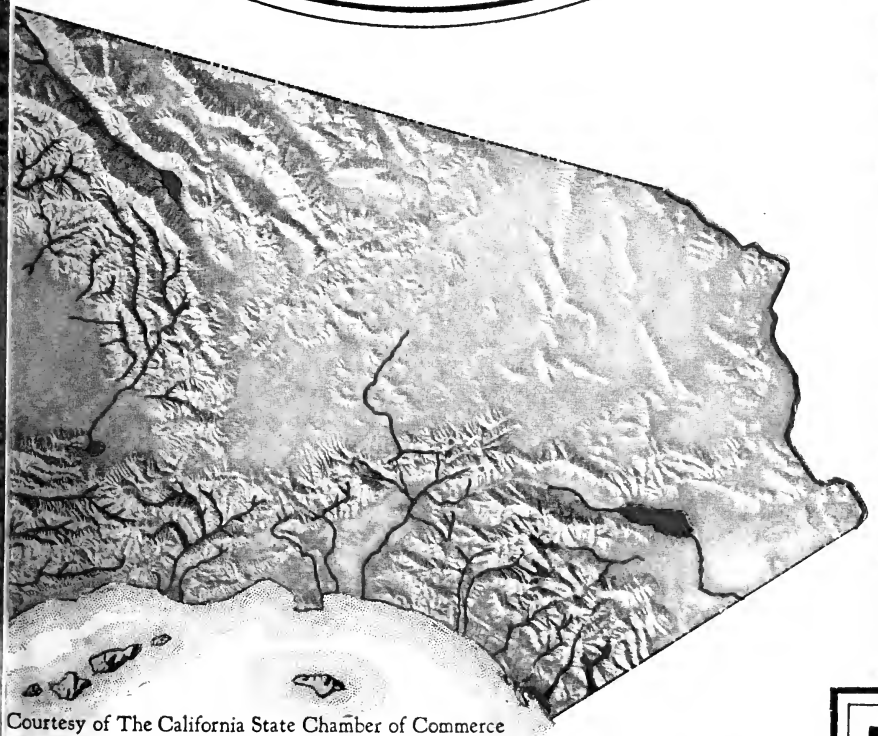


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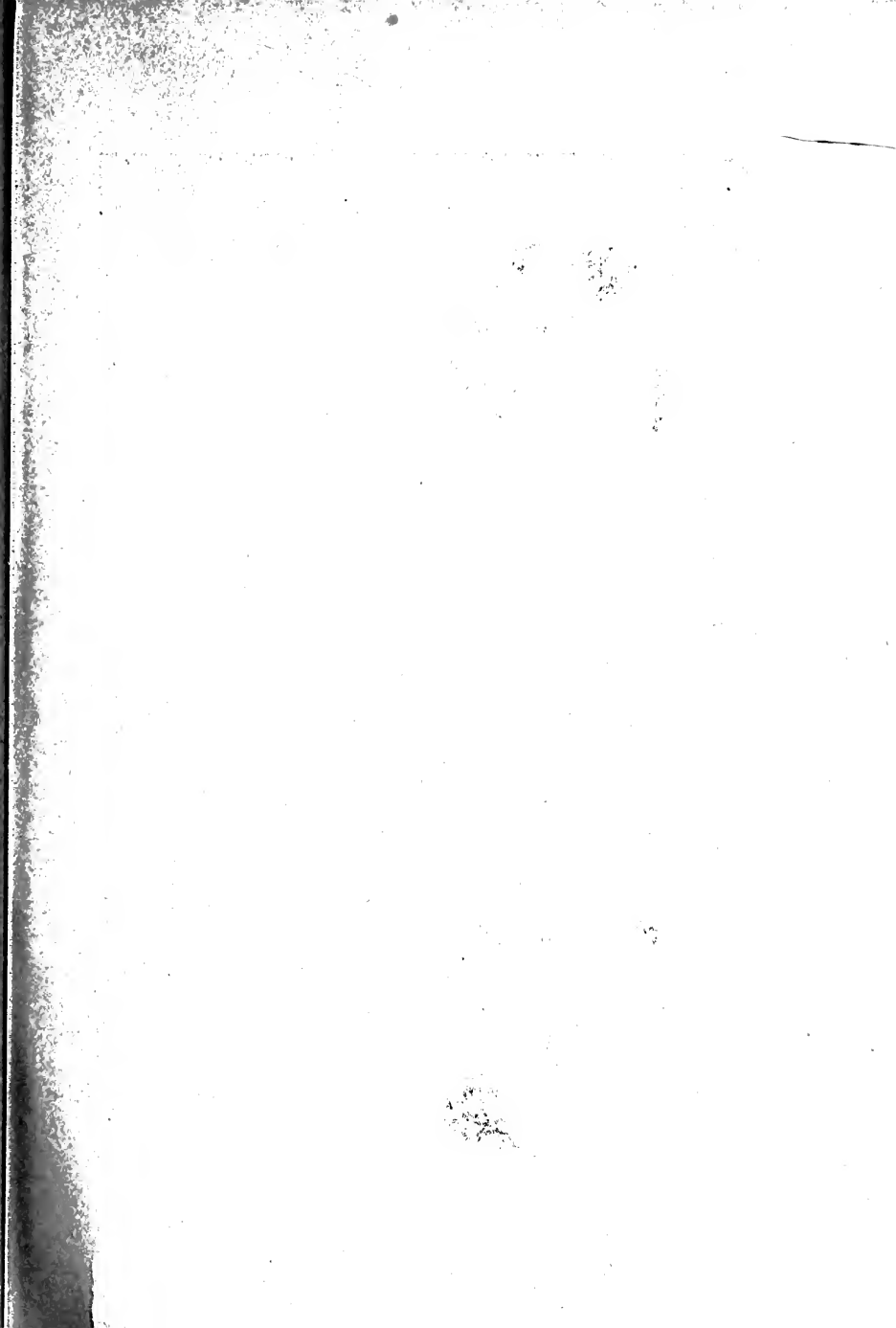
MAP *of California*

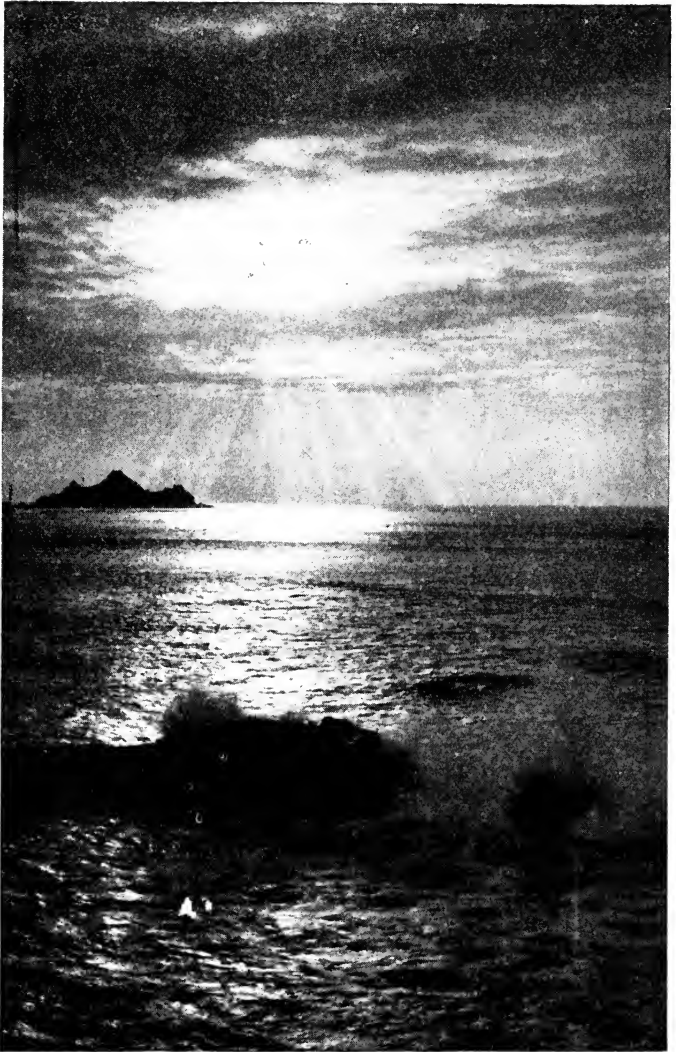
This map shows the mountains, valleys, lakes, rivers and harbors of our California home.



Courtesy of The California State Chamber of Commerce

NO 25





The Kingdom of the Great Gray Sea.

Our California Home

*A Social Studies Reader for
Intermediate Grades*

BY
IRMAGARDE RICHARDS



HARR WAGNER PUBLISHING COMPANY
SAN FRANCISCO, CALIFORNIA

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IRMAGARDE RICHARDS



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DEDICATED TO
THE REAL BARBARA
WHO HELPED EXPLORE THE STATE
AND WRITE THE STORY

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FOREWORD

OUR CALIFORNIA HOME

STUDIES of the geography of California — that is, of her topography, climate, and resources — are grouped around the central idea of the watersheds of the state. The stories of the inhabitants of the state — Indian, Spanish, and American — are developed upon the same theme: history as determined to a great extent by water conditions and by the gradual social control of these conditions through irrigation, power development, flood control, and the use of waterways for transportation.

The introductory chapters deal with the use of water in the child's own home, on ranches, and in cities, and with the sources of this water. The remainder of the book is divided into three regional studies — the Great Valley, including the Sierras and the San Francisco Bay Region; the Coast Regions; Southern California, including the Desert Regions. The study of the geography, history, and social development of each region is, as far as possible, complete in its own section of the book.

These studies are presented in the form of stories told to a group of California children by their grandfather, who is the son of an American pioneer and a Spanish Californian mother.

Through this story of water an attempt has been made to set before children, in a form which they can readily grasp and enjoy, the story of man's relationship to Nature. The children are led to picture the natural features of our homeland, and man in this setting. They learn that for the most part Nature has aided man and has given him generous wealth, but that in some ways she opposed him and made him suffer. They learn the story of man's social development, and how, through increasing co-operation, he is more and more controlling Nature and winning from her happiness and prosperity for all of us.

The geographical and historical material of the book is made subordinate to this main theme—the social coöperation of men for the control of natural forces.

Ideas to be functional must be integrated into each child's experience. The work and study plans offer suggestions through which provision is made for the child's individual reaction to the material presented. Group activities are suggested to provide for the socializing experiences so necessary to develop attitudes of coöperation and group consciousness. The experience becomes vivid and meaningful in proportion to the opportunity for creative self-expression afforded to the child. The teacher should not permit these suggestions to re-

place spontaneous activities which may develop out of the interest of the group.

The list of reading references at the end of the chapters will offer opportunity for the child who reads easily and rapidly, to enrich the experience presented by the text. The references are selected from books that will be at hand in most schools and that are easily within the reading ability of the capable fourth grade child.

By the inclusion of these references, and of the lists of important facts, it has seemed possible to omit many stories found in books widely used in California schools, and to limit the narrative to those materials of our history that bear on the main theme of the book—the social control of our natural resources.

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Our California Home

CHAPTER I

THE CHILDREN OF THE GREAT VALLEY AND THEIR HOME

“I want a drink of water! I want a drink of water!”

“Oh, Billy, please try to go back to sleep! I gave you a big drink when I came to bed.”

“But Mother, I want a——”

“Hush, Billy, don’t wake Mother again. Keep still, and I’ll get you a drink.”

Barbara slipped out of her bed on the big sleeping porch and felt for her slippers in the dark. She crept into the hall and passed her mother’s door very quietly, trying not to wake her again. But she bumped her knee on the bannister post and it hurt.

“Here’s the bathroom door at last. Oh, how nice to have it light!” For when her hand felt the door, Barbara easily found the switch, pressed the button, and filled the room with light. She took the glass from its rack and turned on the faucet. How cool and sparkling the water looked as it dashed into the white bowl! Barbara filled her glass and carried

it easily down the hall, now lighted dimly from the bathroom. She gave it to Billy, who was sitting up waiting for her. He gulped it down.

“Thank you. It tastes good! I *was* so thirsty!”

“Well, now go to sleep, Billy.” Barbara covered her little brother, gave him a pat on the shoulder, and took her glass back to the bathroom.

It was a hot night. She let the water run into the glass and overflow and splash on her hands and wrists. She, too, drank thirstily.

“It does feel good! It feels good, it tastes good, and how beautiful it looks, shining and splashing and cool!”

She dried her hands, turned off the light, and felt her way back to bed. For a while she did not go to sleep, but lay quietly, thinking to herself.

“How hot it is! But I feel cooler now, and comfortable. And Billy is sound asleep again. Suppose there wasn’t any water! Suppose we were both still thirsty and there wasn’t any water anywhere! Being thirsty is the most awful thing in the world. Being dirty is awful, too. Suppose there wasn’t any water to bathe in, or wash your clothes, or—anything! Like desert children! I’m glad we have faucets that run and splash. I’m glad——”

She was fast asleep, dreaming now. Dreaming of a great fountain of water that went shooting up into the sunshine, and splashing back into the pool,

gay and happy. It splashed so loud that Barbara turned over and opened her eyes, in the first rays of morning sunshine! Jimmy's bed was already empty.

"Oh, that's what I heard!" said Barbara with a laugh. "Hurry up there, Jim, my turn next!" For, sure enough, there *was* a loud splashing. The shower bath was running full force and it did sound gay and happy, for mingled with the cool, strong dash of the water was Jimmy's voice, singing clear and loud.

The noise of the water and the song stopped together and in a moment Jim was coming down the hall, his hair damp and glistening and his cheeks red.

"Beat you this morning, Barbs!" he cried, as his sister passed him on the run.

"Oh, I don't know; you're not dressed yet!"

Sure enough, in spite of his head start, Jim lost so much time finding his old shoes, and then un-tangling the laces, that he and Barbara raced down the stairs abreast and out into the garden.

"Oh, Granddaddy, are you out already?" and "Oh, Granddaddy, first day of vacation, ten weeks of vacation, hurray!" cried the two children together. A tall man with silver hair and smiling blue eyes turned to greet them.

"Hello, early birds! Looking for worms?" He

was holding the garden hose and he turned the stream of water toward them as though he were going to soak them.

“Ow—wow!” shouted Jim as he slipped out of reach, and “Oh, Granddaddy,” cried Barbara, “we’ve had our baths—have a heart!”

“All right, no more showers then. But look at this.” Granddaddy turned the hose nozzle till the stream came out in a wide soft spray. It caught the level beams of the early sun, and there in the spray was a rainbow, perfect in all its bright colors.

“Oh, how lovely!” Barbara almost whispered, she was so surprised by this sudden beauty.

“That’s better than a worm!” laughed Jim.



The ranch home in the Great Valley.

“You must have been up before daylight, Granddaddy; you’ve soaked the whole garden.” Barbara went dancing down the gravel walk. She was happy in the freshness of the cool damp air, the beauty of the wet grass, and the gay flowers, each sparkling with drops of water in the sun.

At the gate she called back, “I’ll run you a race to the mail box, Jim! Give me a head start.”

They flew down the road, and Jim, although he was older and a boy, had to do his best to catch up with his fleet little sister.

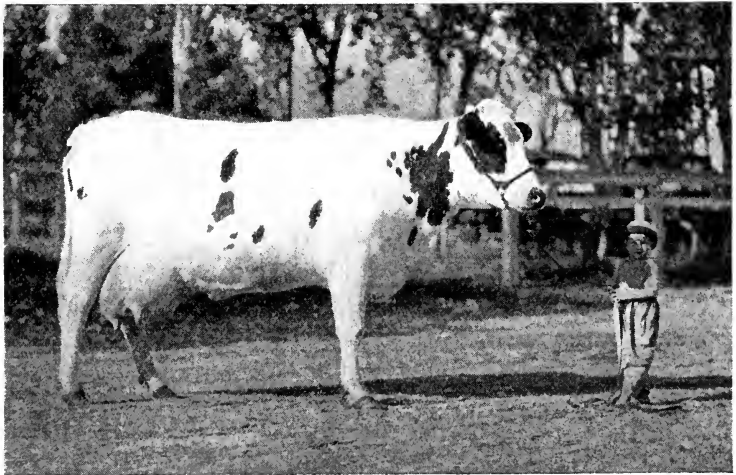
They took the morning paper out of the box and started back slowly. Very slowly, for Barbara was out of breath and Jim had his nose buried in the paper. Jim was a great swimmer, and he was keen to know who had won in the Pacific Coast final meet held last night in San Francisco. Barbara did not bother him. She was stepping carefully in the deep dust of the roadside and thinking, “How hot it is! The pasture field here is as dry and brown as if it had forgotten that it was full of thick green grass and wildflowers only two months ago. The cows loved it then, and got fat and sleek. They would starve in here now. It’s a good thing Daddy has plenty of alfalfa.”

The children passed the stretch of bare brown pasture and came to a great field of alfalfa, divided by fences into smaller fields. In one the alfalfa

stood tall and dark. In another it had been newly cut and raked away. A stream of water was flowing into the field and flooding the short alfalfa, which drank it thirstily.

Now the children were passing the orchard. "I suppose there are no more cherries left," Barbara said to herself. It was no use talking to Jim because he was still reading about the swimming races. "But I know there are apricots. I think I'll go get some before breakfast. Oh, what fine peaches there will be soon!"

Now they were back at the garden path. Barbara drew a deep breath of happiness as they turned out of the dusty road and hot early sunshine into the



Little Billy and Daddy's best cow. This cow has plenty of good alfalfa to eat. She gives a great deal of milk.

cool, green garden and the shade of its wide trees.

“Goodby, Jim; I’m going out in the orchard to get some apricots before breakfast.” But she didn’t go after all, for in the orchard, too, a stream of water was flowing. Around the base of each tree a sort of basin had been made in the soil, and these basins were being filled with water.

“Well—” said Barbara, as she watched the water slipping along among the trees, “no fruit for me—too muddy. I wonder if the trees are as thirsty as I was last night? I wonder if they are glad, too, that they live where there is plenty of water?”

As she turned back to the house she listened to the strong, steady hum and thump of the big pump.

“It’s like a heart,” thought Barbara, “beating and beating, and sending the water all over the place. If it stopped, the ranch would die, I suppose.”

When Barbara reached the house the family was gathering for breakfast. Jim was coaxing his mother——

“It’s the first day of vacation, Mother. May we go to Sacramento? I want to have a swim in the plunge in the park. I’ve never been there. May we go today?”

“Can’t do it, son. Daddy is irrigating this morning, I have my hands full, and it’s too hot to ask Granddaddy to drive you in.”

“Oh, I don’t know.” Granddaddy’s voice sounded quite *cool* and hopeful to the eager children. “I think I’d rather like to drive in. How about it?”

“Oh, hurray!” and “Oh, Granddaddy, you darling!” and “Here, hold on a minute, Jim.” Barbara and Jim and Daddy were all speaking at once. “I expect some help from you this vacation, Jim. You are old enough now to do all sorts of things around the ranch, and I need your help.”

“That’s just what I was thinking about Barbara,” said Mother.

Jim and Barbara were silent, but their eyes were fixed hopefully on Granddaddy’s face.

“Fair enough, fair enough, youngsters,” said he, “but summer days are long, and it’s early. Hop out with your Dad, Jim, and see how hard you can work for him, and you, Barbara, clear the table quickly and tackle the dishes. At ten o’clock I’ll come and speak to your parents and see what kind of helpers you have been.”

Daddy and Mother, too, were watching his face, and they smiled and looked so satisfied with Granddaddy’s little speech that the children understood very well what he meant. If he got a good report at ten o’clock, they would have their trip to Sacramento. Barbara jumped up and began to pile dishes so fast that she almost upset little Billy in his high

chair. Jim knocked his chair clear over as he obeyed the command to "Hop out!"

"Come on, Dad, what's the job?"

"Rubber boots, Jim, we're going to clean the dairy barn first."

"Not so bad, I like that job!" came Jim's voice as he dashed upstairs for his boots. Barbara was already rattling the dishes into the sink.

"What horrible things dirty dishes are!" She banged down the draining rack and turned the faucet. The hot water rose among the dishes in the sink. The soap foamed up into bubbles that shone with all the colors of the rainbow. Out came the clean soapy dishes. More hot water, and there they stood in the rack, rinsed and warm and shining.

"Dry already," said Barbara as she put the dishes in the pantry. "I'll say that's quick work. It's rather fun, like magic—first a horrid messy heap, then nice rows of shining china on the shelves!



Plenty of hot water for laundry and dishes.

It's having all the water you want and as hot as you want that makes it fun. Then dishes aren't so bad. Next job, Mother!"

Mother was flying around upstairs making beds.

"Through already? Fine! Come on up and tidy the bathroom for me, please."

The bathroom was rather messy, too. Jim always left the basin grimy, towels were soiled, tooth paste was splashed around.

"Well," said Barbara, "old friend water, I need you again, and let's invite the Dutch lady to help us!"

A little scouring powder, hot water, and the good young muscles in Barbara's arms soon made the bathroom shine, all spick and span. A last polish on the mirrors, soiled towels whisked into the hamper and clean ones on the rack, and Barbara's task was done. She stood in the door looking at the bright room a minute.

"I think I like this job the best of any in the house. How in the world *do* people get along without showers and tubs and water splashing into them day or night, whenever they want it?"

"Through with the bathroom, Barbs?" called Mother, who was now back in the kitchen. "Come down, I have a *very* important errand for you."

Barbara liked the tone of Mother's voice. It sounded like something special and nice. She went

down the stairs two at a time. Mother was taking a pan out of the oven.

“Oh, what a heavenly smell!” cried Barbara.

“Two for you, two for Jim, and one for little Billy out in the yard. Please mind Billy and keep him out of mischief till ten o’clock!”

Barbara took the crisp, hot cookies and skipped out the door.

“Come along, Billy, let’s find Jim,” she shouted, and, taking the little fellow’s hand, they went out to the milking barn.

“Oh, Jim, aren’t you most done? Look what we have!”

Jim had already cleaned the floor of the barn. He had shoveled the litter and manure into the big litter carrier and pushed it out into the corral. Now he was holding the hose and dashing a strong stream of water down the concrete floor of the barn.

“It’s clean now; I’m just giving a last rinse. Come along quick with those cookies!”

He washed his hands and turned off the hose. The water drained out of the barn, leaving it spotlessly clean, fresh, and sweet-smelling. The children sat down on the edge of the concrete manger, where the cows ate their grain at milking time, and began to munch the cookies.

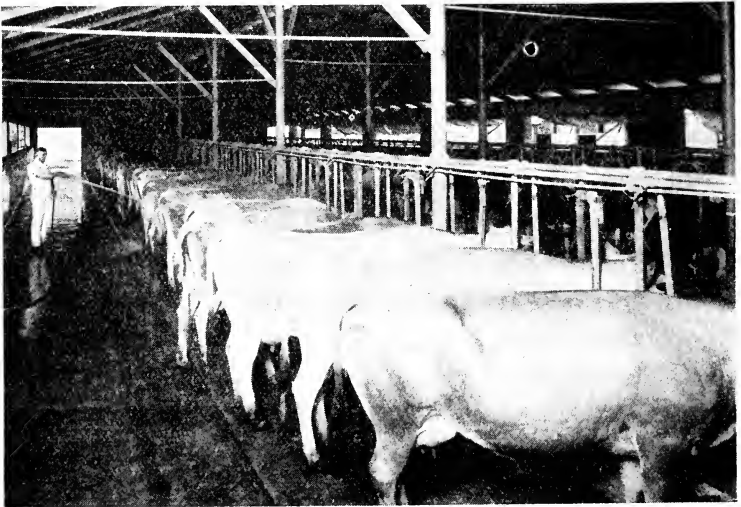
“Jim, your barn looks *almost* as clean and shining as my bathroom did when I finished with it.”

“Well, it should be clean. I scrubbed it hard enough. I love this barn. I like to think how clean it is when the cows are milked. There are no dirt or flies or smells to spoil the milk. Good old hose!” he said, patting the nozzle beside him.

“My old friend water, again,” thought Barbara. “Whoa, Billy, where are you going?”

“Wanta see fizz-fizz,” cried Billy, who was headed for the milk room as fast as his fat legs would carry him.

“Oh, Bill, you’ll be drowned and scalded to death, both, you rascal. Hold on!” Jimmy caught his little brother and picked him up in his arms.



The cows are washed before they are milked. This helps to keep the milk clean.

"Hello, Jerry! Billy wants to see the fizz-fizz. May we come in? I have my rubber boots on."

"All right, but be careful."

Inside the screened door of the milk room, a great splashing and swishing and hissing was going on. The big steel milking pails, the milk cooler, and the tall milk cans were being cleaned by Jerry. It was his job to take care of the milk and all the things that were used in handling the milk. He, too, had a hose in his hand and was flooding the pails and cans, rinsing them free of milk, and then scrubbing them in hot water. After a second rinse from the hose, they went on the racks and John turned on them another hose that shot out scalding steam. This was the "fizz-fizz" that Billy wanted to watch. Billy shouted with delight as the steam hissed and sizzled up and down the shining milk things. Finally Jerry turned it off.

"They do look clean, sure enough," said Jim.

"Clean?" cried Jerry. "They are more than clean, they are sterile! No bacteria in our milk!"

"Sterile? Bacteria? What does that mean, Jim?" asked Barbara as they went out of the dairy house.

"Oh, it means *extra* clean. I don't understand exactly, but everything is so clean that the milk is always good and pure, and keeps sweet and can't make you sick. But it takes a lot of water! Cold

water, hot water, and scalding steam! Oh, there's Granddaddy!"

In the drive stood the roadster. Granddaddy was at the wheel.

"I have spoken to your mother and daddy and it seems you have both done your work well. Jump in!"

There was a wild scurry to change boots and shirt and for Barbara to get into a clean dress. Then they were off down the highway to town.

WORK AND STUDY PLANS

Things You Can Do Alone

If you are a girl, make a list of all the things a girl might do in one day with water.

If you are a boy, make a list of all the things a boy might do in one day with water.

Things You May Do Together

Make a long picture on wrapping paper that will show a boy, a girl, and all the things each of them do with water in their home.

Important Facts You May Need

We must have pure water to drink.

Water keeps us clean.

Water keeps our homes clean.

Water keeps dairies clean and milk pure.

Water makes things grow.

Books You May Want to Read

- “We and Our Health,” Book I. E. G. Payne. Page 63.
- “We and Our Health,” Book II. E. G. Payne. Pages 63 to 67.
- “Health Readers,” Book II. Summers & Schawe. Page 27.
- “Child Story Readers,” Book IV. Page 455.
- “Home Folks,” J. Russell Smith. Pages 12 to 15. Page 77.

CHAPTER II

A CITY IN THE GREAT VALLEY

In less than half an hour they crossed the bridge over the great, quiet river, flowing full from bank to bank. Then the roadster whisked through the busy city out through a new part of town to McClatchy Park. Children swarmed all over the playground, but Jim did not want to stay for anything. He was eager for his swim. The car was parked and "in a jiffy," as Barbara would say, both children were in the plunge, Granddaddy watching them carefully from the side.

Barbara liked the water and she could swim a little, but she was glad that there was a safe pool on one side with a railing, so that she would not suddenly slip off over her depth. But Jim had run at once to the end of the deep pool and plunged in, swimming easily with a strong, sure stroke. Granddaddy had taught him to swim, and he loved it more than any other kind of sport, better even than baseball or football. Barbara forgot to swim herself, she was so thrilled watching her big brother. He was out of the water now, up on the high diving stand.



The pool where Jim and Barbara went swimming.

“Oh, dear!” thought Barbara. “He is going to dive from ’way up there! It looks terrible. Oh!” She caught her breath with fear as Jim started out on the board, took three quick, steady steps, then, with a clean spring from the end, shot up into the air, curved, and came down into the pool, cutting the water so straight with his hands and head that almost no splash broke the surface of the pool. Granddaddy clapped his hands as Jim’s sleek head rose from the water.

“Splendid!” he cried. “We’ll make a champion of you yet!”

Barbara was so proud of her big brother she wanted to shout out loud to all the children, “That’s *my* brother, diving over there!”

As lunch time drew near, Granddaddy had a hard time to get Jim out of the pool and dressed, but at last the three of them were in the roadster again.

“I know a fine place for lunch,” said Granddaddy.

“Oh, step on it, then!” cried Jim, “I’m starving!”

Granddaddy *didn’t* step on it (he never did!), but the little car swung suddenly in the road as Barbara caught the driver’s arm. Fortunately, they were passing through a new part of town, where the streets were just being finished and there was no traffic at all, so no harm was done.

"Oh, Granddaddy," Barbara was saying, "what's that machine? Please, can't we look at it?"

"Yes, you may, young lady, but *never* grab my arm like that when I'm driving. It's dangerous! But jump out and let's look at this monster."

A machine like a tractor was roaring along very slowly, and great iron teeth were digging into the ground, tearing it out, while a moving band of buckets carried the loosened earth up and dumped it in an even line beside the deep ditch dug out by the iron teeth. Beside the road lay piles of pipes, each two feet long and a foot wide inside.

"What are they doing, Granddad?" asked Jim. "This is a new kind of tractor to me!"

"It's a trenching machine. It digs this ditch or trench deep and straight and even, faster than dozens of men could do it. And those piles of pipe, Barbara, are part of the housekeeping job of the city. They are sewer pipes. They will be laid down in the bottom of this trench, joined together end to end, and every house along this street, as each one is built, will have a smaller pipe running into this big sewer, and all the waste water from the sink and the toilets and the baths and washbasins will be carried out of the house and down into the sewer main, as this big pipe will be called.

"It's really these servants of ours, deep down in the ground, that keep our homes clean and sweet-

smelling and healthy to live in. But every house must have plenty of water to race down the sewer pipes and to carry away all the dirt that we don't want in our homes. It takes lots of water to keep a city clean! But now let's get some lunch!"

The children got into the car and asked no more questions as Granddaddy guided them into the busy part of the city, and parked the car.

"Oh, how delicious!" sighed Barbara, as they came out of the hot sun into a cool lunch room. Electric fans hummed softly, driving cooled air about the room. Ice clinked in the glasses of water. After the glare and heat of the sun, Barbara was right, it *was* delicious.

They had a good lunch (with *plenty* of ice cream!) and then Granddaddy drove them to the park that grows all around the great Capitol buildings. Tall trees made a thick shade. They left the car and strolled through the beautiful grounds and admired the splendid, high, white buildings.

At last Granddaddy said it was time to start home. "Oh, Granddaddy," sighed Barbara, "I don't want to leave this lovely park!" It was lovely. There were great trees, green lawns and flowers, all fresh and cool. Sprinklers in every direction were drenching the ground with water so that one could almost forget the hot, dry California summer that burns the world so brown and dusty.

“And look, Granddaddy, what is that across the street?—a fountain—oh, it’s like the one I dreamed about—please let’s see it before we go home!”

They crossed the avenue and entered the plaza between the beautiful new state buildings. There, sure enough, was the fountain of Barbara’s dream, a lovely jet of water shooting up into the sunshine, high and joyous, swaying a little as it leaped, and falling back into the pool with a splash of diamond spray. All around the wide, green pool smaller jets shot out in low, level curves to meet the rushing spray that leaped up in the center.

For a long time they watched the joyous beauty of the fountain in silence. Then Barbara said, “It’s the loveliest thing I ever saw!”

And Jim said, “It must take a lot of water to keep that running day and night!”

And Granddaddy said, “Come, we *must* be on our way toward home!”

They drove back to the main street of the city, and down to the “water front,” that last street that runs along the edge of the great river.

“Do you want to stop and see the docks?” asked Granddaddy, and of course they did!

Long, covered sheds were filled with every kind of thing one could imagine. Fruit and boxes of canned food, and sacks of grain and hay, and machinery—millions of things, waiting to be loaded



The State Capitol and the fountain in the plaza.

onto the river steamer, or just arrived off the steamer. Men with hand trucks, moving goods of all kinds, charged around, and big motor trucks loaded or unloaded along the edge of the platforms.

On the other side of the dock, next the river, a big steamer was fastened with thick ropes. Her name was written across a little house, high up above the rest of the steamer, *Delta King*. All along the side of the steamer they could see dozens of little rooms for passengers. Down below, over a sort of bridge that Granddaddy called the "gang plank," men were traveling steadily with hand trucks, filling the steamer with freight.

The children watched all this rush of work, their eyes as busy as the men on the dock!

"What heaps and heaps of things we send away, don't we, Granddaddy?" said Jim.

"We certainly do, Jim, and this is only one steamer loading here. There are barges and smaller steamers all up and down the river carrying freight, and besides that, railroad trains and motor trucks. But, in the old days, before roads or railroads were built, the river carried all the freight. Everything that was needed in Sacramento and this big valley came up the river from San Francisco. All the things that we wanted to sell went down the river to the bay. There were even more ships along the water front then than there are now, all sorts of

boats, steamers, and sailing boats and barges and little launches, and even rowboats. And in those days——”

Just then Granddaddy was interrupted by a loud clanging and the scream of a siren out on the street.

“Fire department! Oh, oh, a fire, a fire! Please Granddaddy, oh please, can’t we see where it’s going?”

Granddaddy really didn’t want to race his car through crowds to see a fire, but he couldn’t hold out against Jim’s excitement and his coaxing. Back they hustled into the car and followed the crowd of machines and running people as far as they could drive. Then they parked the car and rushed along nearer and nearer to the great engines that were already fighting the fire.

An old wooden building was burning. Smoke and flames burst out in all directions. Already, tall ladders had been run up on the houses on either side of the burning building. The firemen were soaking their roofs. Great lines of white canvas hose lay all around the street and sidewalk. From two or three big brass nozzles the streams of water shot out. Such huge, strong streams they were! At each nozzle two or three men stood to hold it steadily, for the water came rushing with such force, one man alone could not hold the nozzle.

After all their rush and trouble to get there, it

was not a very exciting fire. The flames had no chance against those great streams of water. In a few moments there was only a mass of dripping black timbers where the old house had been, but the houses on both sides were safe, and the fire was out.

“Granddaddy, you *are* a dear to let us come!” said Barbara, as they got back into the car. “And it was exciting while it lasted. But the fire didn’t have much chance, did it?”

“Lucky for Sacramento, it didn’t,” said Jim. “Almost everything down here is built of wood, isn’t it, and if that fire company hadn’t been right on the job—oh, wow! What a fire there’d have been!”

“Well, in any case, I think we have all had enough excitement for one day, and this time we’re going home!”

Granddaddy let in the clutch and the little roadster sped swiftly over the long bridge and out into the country, homeward.

WORK AND STUDY PLANS

Things You Can Do Alone

Describe a playground in your own city or town.

Make a list of the things a city does to make children happy and safe.

Tell two things that water does to make city people safe.

Tell two things that water does to make people happy.

Make a list of things we should do to help prevent fire.

Things You May Do Together

Make a book of pictures out of magazines to show people in a city using water.

Important Facts You May Need

Some cities make plunges for the people.

Some cities provide beautiful parks and fountains.

Good sewers keep the city clean and healthful.

Fire departments protect cities from fire.

The cities must have plenty of water for sewers, fire protection, parks, fountains, and plunges.

Books You May Want to Read

“Ourselves and Our City,” Carpenter. Chapters 4, 5, and 6, and Pages 80 to 82, and 116 to 120.

CHAPTER III

THE USES OF WATER

Supper was over. Billy was asleep on the porch upstairs. Daddy and Mother had driven off to a meeting of the Farm Center. Granddaddy and the children were enjoying the summer evening, lounging in the hammocks of the big, cool porch.

Granddaddy was silent. He usually was, unless some one coaxed him to talk. Jim was so tired from his swim that he was half asleep. But Barbara was, as always, chatting along happily. Barbara was almost never silent! If no one wanted to talk to her, she didn't mind. She just buzzed on cheerfully by herself.

"Didn't we have the most wonderful day? I wish I could swim as well as Jim. Maybe I will, some day. What did you like the best—the swim, or the park, or that lovely fountain, or the docks, or the fire?"

Jim didn't answer. He was nearly asleep. Barbara went on, "The swim, the fountain, the fire-fighters, the river! That's funny, now, isn't it? We wouldn't have any of these exciting things if there were not water everywhere, rivers and rivers of water, everywhere, all day." She stopped and laughed a little. "All day, sure enough. Billy

began it before it was daylight, wanting that drink of water! Granddaddy, when you come to think about it, this has been the funniest day!"

Granddaddy wasn't asleep at all. He was listening to every word, but he knew he did not need to make any answer. Just as he expected, Barbara went right on: "You know, Billy began it. He waked me up wanting a drink, and, after I got his drink for him, I lay awake thinking what a good thing water is. Then I dreamed about water. After I was up, all day long it seems to me, I've been doing something with water every minute, until now.

"First, we all had a shower bath, and then when we came out you were soaking the garden. The alfalfa was flooded and ditches were running in the orchard. I must have used a *river* of water doing the dishes and the bathroom, and I'm sure Jim used an *ocean* in the barn, and so did Jerry in the milk house. Then in town—why, Granddaddy, there couldn't *be* any town without all that water, just rivers of it, everywhere! My goodness, Granddaddy, where in the world does it all come from?"

Jim must have waked up, for now he gave a little laugh, and said, "Well, what a silly you are! As if anyone couldn't *see* where it comes from! It comes out of the well, here on the ranch, and out of the river in Sacramento!" Jim wasn't really being

impolite, but big brothers sometimes talk to their sisters that way.

Barbara admired her big brother so much that she didn't mind at all when he laughed at her. In fact, she went right on thinking out loud. "Well, yes, I know it, but where does the river come from, and keep coming and coming and coming? What fills the well full, always full, with that big pump thump-thumping all day and almost all night?"

Jim wasn't quite so ready with an answer this time. Now it was Granddaddy who laughed.

"You've got him now, Ducky! It will take some fast thinking, young man, to answer that question." When Granddaddy called her "Ducky," Barbara knew that she had asked a *very* sensible question. He loved to explain things for her, when she asked sensible and useful questions. When he was specially pleased, he called her "Ducky." But this time he did not begin at once to explain about the river and the well. He was thinking of what Barbara had said before she asked that question.

"You are right, Barbara, it *has* been a wonderful day, if you have been noticing for the first time how important water is in our lives. Suppose I ask you both a question. What do you think is the *most* important thing that water does for us? Let's see who can give the best answer. I'll give a prize to the winner!"

“Huh,” said Jim quickly, “that’s easy! If it were not for water, Daddy couldn’t make a living for us all! Water makes the orchard grow, and the alfalfa. Dad sells the fruit and the milk from the cows that eat the alfalfa, and that is what we all live on. There’s nothing more important than making a living, is there? And then: Sacramento. I’m sure there wouldn’t *be* any city there if it hadn’t been for the river, and the boats, carrying freight, bringing into the country things we need, and taking out the things we raise. Why, Sacramento



—Courtesy Tulare County Board of Trade.

Plenty of water in the orchards helps to make a good living for the farmer.



Water gives us beautiful gardens.

makes *its* living, too, from water from the river! Do I win?"

Granddaddy made no reply, and Barbara was thinking hard. It sounded as though Jim were right. Still——

"Well," she said finally, "I suppose that's true, people must make a living for themselves and their families. But what would be the *use* of living if things weren't nice and comfortable and beautiful? Water keeps us comfortable. It is good when we're thirsty, it keeps us clean, and makes us cool when we're hot. And it makes, oh, millions of *nice* things, clean shining dishes and shining bathrooms, and fresh, clean clothes to wear, and lawns and flowers,

and rainbows, and fountains! I know it's important to make a living, but I don't believe I'd *want* to live if things were not clean and comfortable, and if there was nothing beautiful to look at!"

Jim laughed. "A lot you'd care whether your dress was clean or not, if you were starving!" he said. "Besides, I thought of something else that water does, much more important than making things beautiful. It keeps disease away, the way it does in our dairy. It's having water to clean with that keeps the milk pure so that it can't make us sick.

"And do you remember the men working in the sewer in town? You couldn't have a town that was



—Courtesy Sacramento Chamber of Commerce.
Water protects us from fire.

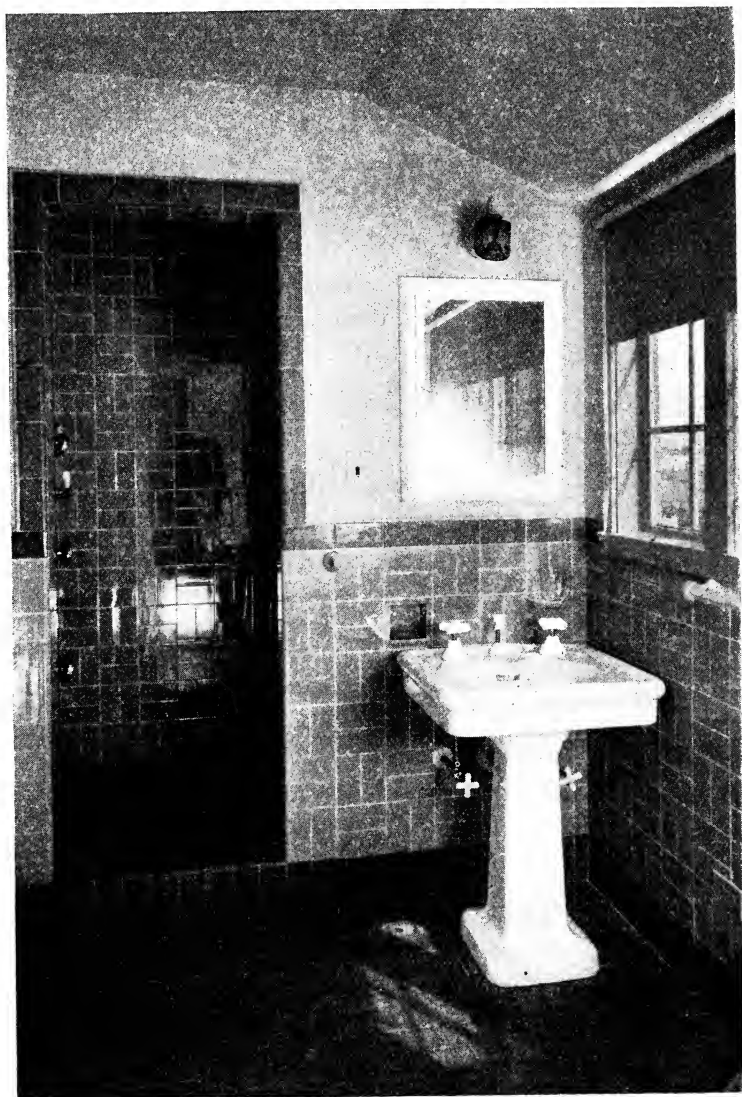
safe to live in without water to run in the sewers, could you, Granddad? And talk about being safe, how about the fire department, and the big hose? I'll bet that old city would burn down every day or so if they hadn't lots of water! There you are, water makes our living and makes it *safe* for us to live! What *is* that prize, Granddaddy?"

"Not so fast, Jim! How about it, Barbara? Have you anything else to say?"

Barbara really thought that Jim had won. He was such a clever boy when he put his mind on anything. Still, she made one more try, this time smiling to herself in the dark.

"I suppose you're right, Jim. Making a living and keeping people safe must be the most important things in the world. But suppose water did all that and yet there were no water at all to swim in, nowhere to swim or dive or have meets, and you couldn't make your team because there wasn't any swimming team to make? How about it? I don't believe you'd be happy, no matter how good a living you had or how safe you were!"

Jim and Granddaddy both laughed at this wise answer, and Granddaddy said, "You will have to divide the prize. No one could decide which is more important, to have a good living and safety, or to have comfort and beauty and happiness. They all go together, don't they? And we do really owe all



Water gives us shining bathrooms and the comfort of being clean.

these things to water—a steady, sure supply of water. So here you are!” And he pulled out of his pocket a package of dates, specially delicious dates, large and smooth and sweeter than candy. “Here’s your prize to divide, and believe me, if those dates could talk, they would tell you a story about water more wonderful than anything Barbara has dreamed of in all her dreams about water.”

While they were munching the dates, Granddaddy laughed a little to himself.

“You are funny children. You both made good lists of the ways in which we use water, but both of you forgot one of the most important uses of all!”

They thought hard for a few minutes in silence. Then said Jim, “I give it up; tell us, Granddad!”

“What kind of use is it?” asked Barbara. “Jim’s kind, or my kind?”

“That’s the joke on you both. It certainly is Jim’s kind of a use, for it makes a living for thousands of people. It certainly is your kind, too, for it makes more comfort and beauty and fun than anything else in the world that men have learned to use. And neither of you guessed it!”

“Oh, Granddaddy, have a heart, tell us!” begged Jim.

“Not tonight. Perhaps you will guess it yourself after you ‘sleep on it,’ as we say.

“But now it’s bedtime and that first big question

of Barbara's is still waiting to be answered. It will have to go over until tomorrow, Ducky. Tomorrow I'll take time to tell you all I can about your friend, water, and how it keeps the river running and the wells full. Off to bed with you now! Goodnight!"

WORK AND STUDY PLANS

Things You Can Do Alone

Jim and Barbara each made a list of the useful things water does for us. Write out these two lists. If you think of some other good things that water does, add them to your list.

Granddaddy thought both the lists were good. Which do you think was better? Write at the end of one of your lists, "I think this is the better list."

Things You May Do Together

Finish your book of pictures. You have pictures of people using water in a city. Now find pictures of people using water in the country.

Important Fact You May Need

If a city is beside a big river, the river works for the city. It carries away the things the city wants to sell. It brings the things the city needs.

CHAPTER IV

WHERE DOES THE WATER COME FROM ?

Sunday on a dairy ranch begins just like every other day, very early in the morning! But, on this first Sunday of vacation, by ten o'clock chores were finished and everyone was off to town for church. In the afternoon there were visitors. A busy day, but early evening found the two older children alone with Granddaddy on the porch again, watching the sunset and enjoying the cool fragrance of the garden.

"Now's our chance, Barbs, to find the answer to that riddle of Granddaddy's about water! Tell us, please!"

"I'm not so sure that I will," answered Granddaddy. "You remember, I promised to answer Barbara's question first, and tell her where the water comes from. That may turn out to be a long story and, perhaps, before we are done with it, you will guess my riddle."

"Ah, a long story!" Both children settled themselves happily in their hammocks, for nothing delighted them so much as a good, long story from Granddaddy. No matter what the story was about, it was sure to be interesting.

“Well, this story begins away out in the Pacific Ocean.”

“How far out?” interrupted Jim. “As far out as our steamer went that time Daddy took me to Los Angeles? Oh, but it was big, that ocean! We were clear out of sight of land. There was water for a million miles in every direction!”

“Yes, it begins as far out as that, and farther. A million miles is stretching it a little. Still, you are right, it is an immense ocean, with an immense lot of water in it. Now, far out on this big cold ocean comes the fairy prince.”

Granddaddy always pretended that he *had* to put a fairy prince into all of his stories to please Barbara. She would laugh and say, “Oh, I know this isn’t going to be a fairy story!” Still, a fairy prince *was* rather nice in any story.

“This was really a gorgeous, glorious, powerful prince, and—look, there he goes right now! Say good night to him, quick!”

The children almost fell out of their hammocks, they were so surprised. They turned quickly to where Granddaddy was pointing, and blinked right into the level rays of the sun, sinking behind the coast hills in a mass of golden clouds.

“Well, you surely picked a fine prince this time, Granddad! This story will be good!” laughed Jim.

Barbara squeezed her Granddaddy's hand. "He's a wonderful prince! Go on, please!"

"All day long this powerful Prince Sun held his shining face over the great ocean and all day long he kept drawing up into the air little particles of the water. Just above the surface of the ocean the air was full of water, but it was invisible. Higher up in the air the water particles gathered together into great piles of drifting white clouds."

"Now, Granddaddy, is this really a fairy tale, or not? How could the sun draw water out of the ocean up into the air?"

"It isn't exactly a fairy tale, because it really happens, but it is almost as wonderful and hard to explain as magic. Still, it isn't anything really different from what you see yourself, every day, Barbara. If I turn water on the concrete walk and the sun shines on it, in a moment the wet pavement is dry. Where did the water go? If you wash your dress and hang it, dripping with water, in the sunshine, on the line, in a few minutes it is dry, isn't it? If you put the teakettle on the hot stove, full of water, and leave it alone, after an hour or so the water will be nearly all gone out of the kettle. Did you ever notice these things, Barbs?"

"Yes, of course I did. But where *does* the water go? I never thought about that at all. And why *does* it disappear that way?"

“What do you think, Jim?” asked Granddaddy.

This time Jim wasn't so quick with his answer. He was thinking hard. “Well, I know you call it evaporation, when water dries away out of sight, and I can see that it has to have heat of some sort, the sun or the stove, to make it evaporate. But I don't know why heat does that to water, and I don't know where it goes.”

“Good!” said Granddaddy. “I don't know myself just *why* heat evaporates water. No one does. But we do know that water is evaporated, and we know where it goes.

“The fact is, when water gets warm it turns to vapor. That is why we say it e-vapor-ates. Vapor is light and it tries always to go up higher. If the air is warm, too, I mean just as warm as the water vapor, this vapor spreads out in the air so thin that no one can see it. It is, as I said, invisible. But the air is full of this water vapor all the time, except perhaps in deserts where there is no water to evaporate. But just as soon as the air cools a little, do you know what happens?”

Nobody seemed to know what did happen, so Granddaddy went on.

“Imagine it is a cold winter day, but the air in the kitchen is warm from the stove, warm and full of water vapor from the teakettle. Do you remember what happens then to the windows?”

Winter seemed a long way off, this warm summer evening, but the children tried to remember. Jim said finally, "The windows get all clouded over, so you can't see through them, don't they?"

"Good! You see, the air in the room is warm from the stove, but the window glass is cold from the outside air. Now, when the warm air in the kitchen, full of water vapor, strikes the cold glass, it is cooled. The tiny, invisible particles of water rush together. So many of them gather close together that now we can see them.

"Jim said, 'The window is clouded over,' and that is a good way to describe it, for the thick water vapor, gathered on the cold glass, does look something like a cloud. If the air outside gets colder and colder, and we still keep it warm inside, with a teakettle on the stove, so much vapor gathers on the glass that finally it runs together into drops of water. The drops go sliding down the panes until the window sill is soaking wet. That water on the window sill is the same water that a few minutes before was in the teakettle. Is that magic enough to please you, Barbara?"

"Yes, oh yes, but let's get back to the fairy prince!" Barbara really had been paying very good attention, but her mind was still busy with the picture of that glorious, shining prince, out above the immense gray ocean.

Granddaddy tweaked the little curl just over Barbara's ear. "The kitchen is too dull a place for you, eh? Well, here we go, back on the sea again.

"Now you understand that, when water is warmed, it evaporates, that is, it fills the air with tiny particles of water. We cannot see them, but we know they keep trying always to go up higher. So you understand what I meant when I said the prince kept drawing water from the ocean up into the air. You can understand why, after a long, sunny day, the air, 'way up high, is filled with masses of white clouds. The air, high up above the earth and sea, is always cold. When evaporated water touches cold air, the particles rush together, closer and closer, until they are so thick we can see the vapor. Clouds are water vapor that has risen from the sea until it touched cold air, then has gathered together so thick that we can see it. If the air 'way up high is extra cold, what do you suppose will happen? Just about what happened to the kitchen window."

"I know," cried Barbara, "the clouds will get thicker and thicker until they make drops of water. Then the water will fall down in rain, just as the vapor on the cold glass ran down in drops and soaked the window sill. But Granddaddy, I can't see that we're getting anywhere. There's that great ocean, and the sun prince drawing the water up into

the air, and the cold air turning the vapor back into water, and the water falling into the sea again. What has that got to do with the water in our well, or the river?"

"What Barbara wants in this story is a dragon or a witch or a wicked ogre to make things happen, isn't it, Ducky? I'm sorry, but everyone who comes into the story is sensible and well-behaved. I don't see how I can use a dragon!

"The best I can do is to bring in a knight, a great, strong knight, who rides two splendid horses, first one, then the other. We'll call him the Knight of the Two Great Winds. Just as our sun prince is Lord of the Great Gray Sea, so our knight is Lord of the Far High Peaks. Now, Barbara, I think we are ready for a little more action in our story.

"For one of the horses that carries our knight is the West Wind, blowing in from the sea to the land all summer long, strong and steady, riding low across the waters into shore. And our knight, riding the West Wind, drives before him the clouds of vapor that Prince Sun has drawn up from his kingdom of the sea. Now I wonder if either one of you children knows what kind of land lies along the shore of California, close to the sea?"

Barbara had nothing to say, but Jim answered slowly, "I know that we can see, over in the West,

a line of hills, and everyone calls them the Coast Mountains, so I suppose they are near the sea.”

“Quite right, Jim. They are not very high mountains, but they run all the way along the Coast of California, from the North to the South. There is only a narrow strip of level land between these mountains and the ocean. Our knight, riding all summer long on his low-flying West Wind, drives the clouds against the low Coast Mountains. They are not high enough to chill the clouds, but they do stop them. The air on these hills is just cool enough so that the water vapor gathers into fog. That strip of coast land is cool and damp and foggy nearly all summer long. But on the other side of the Coast Mountains, in our Great Valley, we have a long, hot, dry summer, for very little of that ocean vapor gets across those hills you see there in the West. When fall comes, we have a very different story. Do either of you remember what makes the other side of our valley, toward the East?”

“Oh, I do, Granddaddy,” cried Barbara. “Do you remember that day last winter, after a rain, when the air was clear and cold, that you took us up in the dome of the Capitol and we saw those far-off white mountains in the East? They looked like fairyland, so far and high and shining white! The Sierra Nevada Mountains, you told us they were called, and that means the ‘Snowy Range’.”

“Yes,” said Granddaddy. “Those high, cold mountains run along the eastern side of California from the far North almost to the southern end of our state. At both ends they curve in and meet the Coast Mountains, so that the Great Valley that we live in is like a long, narrow bowl. One edge is not very high, and the other reaches far up into the sky.

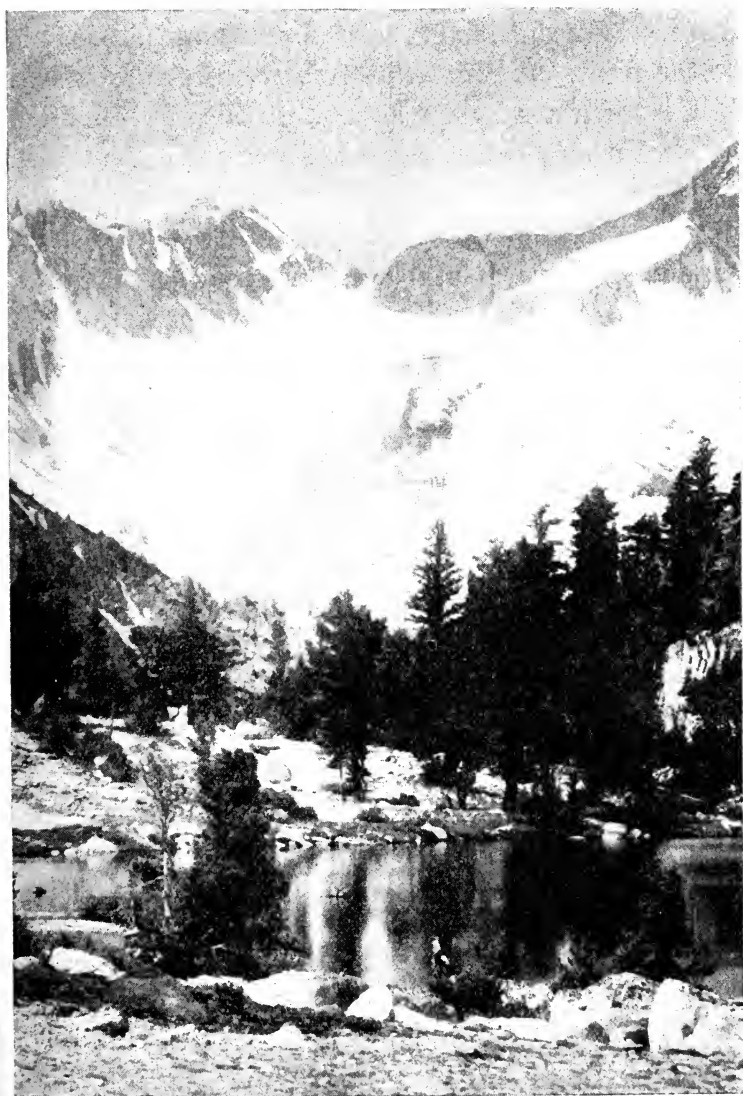
“Now, let’s get back to our story. When fall comes, our knight changes his horse and rides a fierce, wild steed that we call the Southwest Wind. He is not a steady, low-flying traveler. He whirls and leaps and rushes, high, high, up into the air. The knight gathers and drives before him the great masses of cloud that Prince Sun has drawn from the sea. High and higher he drives them, faster and faster, away from their home, the sea. He races them across the low Coast Mountains, across and far above our valley here, until, in a rush and roar of terrible storm, he dashes them into the cold, far peaks of the Sierras. Sometimes they fall as rain. More often, in the cold of the great, high peaks, the rain freezes and falls on the mountains as snow. Again and again, all through the winter, the Southwest Wind comes plunging across our valley, driving the heavy clouds.

“As they pass above the Coast Range and the valley some of the clouds gather and fall as rain, but far the greater mass of clouds is driven on into the

mountains. One fall of snow covers the ground. It is too cold for the snow to melt in wintertime, so the next snowstorm covers the first. Another and another is added, until the snow lies deep upon the high ground, and deeper still in the canyons and gulches. The weight of the snow is so great that near the bottom it is pressed to solid ice. There, for months and months, lies the water that Prince Sundrew up from his kingdom of the Great Gray Sea, and that the knight drove away into *his* kingdom of the Far High Peaks.

“Summer comes at last. The Southwest Wind rages no more. The sun shines as warmly as he can over those cold snow fields, hoping that somehow he can win back the water stolen away from his gray sea kingdom. Little by little the snow melts. The water runs out of the solidly packed ice in tiny streamlets. They meet and form larger streams. They dash down the mountain sides, gathering together at last into rivers. These mountain rivers, deep and swift, rush down into our great Sacramento River, that flows through our valley on down into the ocean. There the drops of water return at last to their old home, the sea.

“All this time that the streams and rivers have been gathering from the melting snows, other tiny trickles of water are making their way beneath the ground. Of course you know the ground will soak



The Kingdom of the Far High Peaks.

up all of the melting snow that it can hold. This water that soaks into the earth tries to flow down hill, back toward the ocean. But there in the dark ground it moves far more slowly than the water on the top of the ground. Still, it keeps moving always down toward the valley and the sea. It follows small cracks in the rocks and joins other hidden streams. Sometimes it sinks deep, deep into the earth. But always it moves slowly back toward the Great Gray Sea.

“The Sacramento River, says Barbara, comes and comes and keeps coming. What keeps it always full from bank to bank? The slowly melting snows keep it full. Those snow fields are so vast, so deep, so solidly packed, that they will never entirely melt before winter starts again, with its rains and new snows.

“The same thing is true about the great underground streams that flow here and there beneath the land of our valley. They never carry away *all* their water to the sea, because, before the snows of one winter are all melted, the rains and snows of another winter have begun. Now, Barbara, have we answered your big question, how does the river keep flowing on, full of water, forever, and how does our pump keep bringing up water from deep in the earth all day and all night, through the long dry summer?”

“Yes,” said Barbara soberly, “and Granddaddy, I know you were only pretending about the fairy prince and the knight, but it *is* like a fairy tale, just the same! All that water rising up out of the ocean and traveling across our valley to the great snow mountains, and then coming back through the valley to its home in the sea! It really is like magic, isn’t it? I loved your story, Granddaddy!”

“Did you, Barbs? Well, I’ll tell you a secret! This is only the very beginning of a story long enough to last us all vacation, and it is *all* the story of your good friend, water.”

“Hurrah!” cried Jim. “That’s my idea of something great, a story that will last a whole vacation. I hope it’s all as good as the beginning! I liked your story, too, Granddaddy!”

“Good night, then, run off to bed and a new chapter tomorrow. Good night!”

WORK AND STUDY PLANS

Things You Can Do Alone

Pretend you are a drop of water in the ocean. Make a story that will tell all your adventures from the time you leave the ocean until you come back.

Things You May Do Together. (Three experiments.)

Bring to your classroom a little coal oil or alcohol stove, a teakettle, and a glass of water with ice in it. Put the kettle full

of water on the stove. Put the glass of ice water where the steam from the kettle will reach it. See what happens.

See if you can find a very large tin can. One of the tin cans that coal oil comes in would be good. Punch ten holes in the bottom with a small nail. Put ten pounds of ice in the can and set it over an empty bucket. Set the bucket and can and ice in the hot sun. See how long it will take for all the ice to melt and run into the bucket.

Take the same can and fill it half full of damp sand and gravel. Put ten pounds of ice on top of the sand and gravel. Pack the ice all around with green leaves and cover the top with a thick layer of green leaves. Set the can over the empty bucket. Put them in the shade. See how long it will take before all the ice melts and runs into the bucket.

The first experiment shows you what happens to evaporated water when it strikes cold air.

The second experiment shows you how quickly the water from snow runs away when there are no trees to keep it from melting fast.

The third experiment shows you how forests keep the snow from melting too fast. It has time to sink into the ground. Then it comes down into the valley so slowly that there is always some water in the rivers and the wells.

Important Facts You May Need

All the water we have comes from the ocean.

The sun evaporates it from the ocean.

Evaporated water makes clouds.

Wind blows the clouds over the land.

Clouds cool on the hills or mountains, and make fog, rain, or snow.

The rain and melted snow in the mountains run down in streams.

Small streams join each other and make rivers.

Rivers flow back to the sea.

Some of the water in the mountains soaks into the ground. It comes down to the valleys underground and fills the wells. Forests keep the snow from melting too fast.

Books You May Want to Read

“Type Stories of the World.” Ruth Thompson. Pages 56 to 67.

“New Geography,” Book I. Frye. Pages 28 to 31.

“Southern California.” Fairbanks. Pages 175 to 185.

“Home and Its Relation to the World.” Fairbanks. Pages 21 to 25.

CHAPTER V

FOLLOWING THE TRAIL OF THE WATERS

PART I

UP TO THE FAR HIGH PEAKS

After Barbara and Jim had gone to bed, Granddaddy must have had a talk with their mother and father. Next morning Mother must have been up and busy early, for, when the children wakened, they looked down from the sleeping porch and saw Granddaddy dressed in tramping clothes, standing beside the roadster. The back of the car was open, and there was Mother, packing in all sorts of exciting things—bundles that looked like lunch, coats, and sweaters.

“Granddaddy must be going somewhere!” said Barbara.

“Oh, look!” said Jim, “That’s *my* sweater Mother just packed in the car!”

“And that’s my coat!” cried Barbara. “Do you suppose we are going with him?”

Before the excited children could begin to dress, Mother was in the hall. “Into your clothes in a hurry, children!” she called. “Jim, put on your knickers and a clean shirt, and here’s your dress, Barbara. Both of you put on your heavy shoes. Breakfast is ready!”

Before they could ask any questions Mother had whisked away downstairs. The children were soon racing after her, dressed in their fresh going-somewhere clothes.

The children were almost too excited to swallow their breakfast. In a few moments they were in the car and waving goodby to Mother and Daddy as the roadster turned out into the highway.

“Now, Granddaddy, please tell us where we’re going! I can’t wait any longer!” cried Barbara.

“Why, haven’t you guessed? We are going to see where the waters come from. We shall travel up into the kingdom of the Far High Peaks where rivers begin. From there we shall follow the trail of the waters back into the kingdom of the Great Gray Sea!”

“Oh, Granddaddy, then that beautiful fairy story is really going to come to life and we’ll be in it!” cried Barbara with shining eyes.

“Oh, fine!” shouted Jim. “That means real snow fields! Wait till I roll you in the snow, Barbs! You’ll think it’s no fairy tale then!”

“By the middle of the afternoon you will both know more about snowballs than you do now, that is certain!” said Granddaddy.

Neither of the children had ever seen snow in their lives, except far off upon the mountain peaks.

Already the sun was hot, and growing hotter

every minute. It was hard to believe that in a few hours they would be playing snowball!

They traveled along the level highway for about an hour. The misty blue mountains ahead of them grew clearer every moment. The children put their hands above their eyes and looked eagerly toward the dim cloudy line where the sky and the mountain peaks came together. Each wanted to be the first to see clearly a white field of snow.

“There, that is snow! See, over there!”

“No, that’s a cloud!”

“Now that’s *surely* snow!”

So they argued, straining their eyes against the sun, watching the purple far-off peaks come nearer as they flew along.

Now the view of the mountains was suddenly cut off. The highway began to rise up into the foothills. The road turned and turned, and the near-by hills and trees were all that they could see. They followed a winding valley, up and up, past orchards and ranch houses and little towns.

Soon the rolling hills and pleasant valley orchards were left behind. The valley grew narrow, with steep sides that went far up above their heads and far down to the bottom where the sides met. The road was like a shelf, cut along one side of the valley, winding and turning to follow the canyon side, but always going higher and higher.

Tall pine trees grew thick along the valley sides, close to the road, so that they could not see far. The sky showed above them, between the trees, bluer than ever they had seen it in their lives. At the bottom of the canyon they saw the flash of water and white foam, to show them where a small river was rushing down the canyon among the rocks.

Although the sun was shining bright and clear, the heat of summer had been left behind them. The air blowing in their faces was cool, and sweet with the smell of the pine trees.

“Oh, Granddaddy,” said Barbara at last, “this is the most beautiful place I ever saw in my life. But *where* are the mountains gone, and the snow fields?”

Granddaddy smiled and looked at Jim, expecting him to make fun of Barbara’s question as he usually did. But Jim looked puzzled, too. “Can’t you answer Barbara, Jim?” asked Granddaddy.

“No, I can’t.”

Then, noticing Granddaddy smile, he began to think hard. “Oh, maybe we’re in the mountains already! We don’t see the snow because it’s up higher and this valley shuts us in!”

“That’s a good guess, Jim. Just a few more miles now and you will see where we are. Perhaps you will see your snow fields nearer than you expect.”

The road was climbing mile by mile higher up the side of the canyon and nearer to the line where the tall pine trees seemed to stand against the sky.

Suddenly they came out onto a level place at the very top of the ridge and Granddaddy stopped the car. Both of the children drew their breath sharply with surprise, for they seemed to be standing almost on the top of the world.

On one side was the deep dark canyon out of which they had climbed. On the other side the ridge dropped down almost as straight as the side of a house, and far below was a green little valley and a lake shining in the sun.

As far as they could see, the ridges and canyons of the mountains stretched away and away, lower and lower, until far below they were lost in the haze which hid the Great Valley where the children lived.

As high as they were, the mountains rose still higher above them. They could see the peaks and ridges and deep canyons. Now they did not look blue and misty. They stood out sharp and clear. Their forests of pine trees were dark green. Sure enough, among the trees on the shady side of the upper canyons they could see patches of shining white snow.

“Oh, Granddaddy, we’re nearly there—let’s go on, let’s go on!” begged Barbara. But Jim was

hungry, and Granddaddy said, "It's a fine place here for lunch."

They lost no time over their lunch. They were soon on their way again. The road climbed steadily. It passed the head of the canyon they had followed in the morning. Soon they were driving beside a gay little river on their right hand. On the left side of the road the hill rose steeply. Now, nearer and nearer, they caught glimpses of shining white among the trees. At last Granddaddy drew out of the road and stopped the car. "Out with you now, and see who will make the first snowball," he cried.

What a scramble they had through the rough bushes before they reached the white patch that had seemed so near! Jim was soon far ahead, and Barbara had about made up her mind that she would get a good pelting with snowballs by the time she caught up with Jim. But Jim got tangled in a thicket of chinquapin. Barbara's bright eyes saw a clear way through the brush and she reached the snow bank first.

She started to scoop up the snow in her hands. "Oh, Granddaddy," she cried, "I thought it would be soft and fluffy! It's *hard*—almost as hard as ice! Oh, dear, but it's cold!" But although her fingers hurt, she kept on digging until she had three or four big hard balls ready for Jim.

When he finally got through the bushes she

caught him right on the head with a well-aimed ball, and the snow spattered down in his eyes and mouth. "You just wait till I catch you, young lady, and give you a good roll in this stuff!" cried Jim. He did catch her, but the best he could do was to slide her around on the hard, slippery snow.

Granddaddy stood laughing at their tumbles. "I'm sorry you're disappointed," he said finally. "If you want soft fluffy snow we must come up here in the winter, when it is freshly fallen. This snow has been at the bottom of a great pile that pressed it down until it really is, as Barbara said, as hard as ice. Even now, on this warm June day, the sun cannot melt it entirely. Now we are going to start our hunt for the beginnings, or headwaters, of a river."

Back in the car again, Granddaddy pointed to the little noisy river running beside the road.

"You will see, as we go on up the mountain, it grows smaller and smaller. We are going to try to find where it begins."

As they drove along, small streams of water crossed their road and joined the little river that flowed along beside them. On the other side of the road they could see large patches of snow among the tall pines. Finally they crossed a rather large stream. Above the place where this stream entered their little river, the river was quite small.

Granddaddy stopped the car off the road. "Let's follow this stream," he said. "It's just about as big as the river itself above here, so we can call it the main stream if we want to. Now for a hard, wet climb." Granddaddy took a little woodman's ax out of the car and they turned into the forest, following their stream.

It was not easy to walk beside its tumbling waters. In some places the bushes grew so thick that they had to cut a way for themselves through the tangle with the little ax. The ground was rough with rocks and roots and everywhere it was covered with a deep carpet of brown pine needles. This carpet looked quite dry on top, but they soon found it was soaked full of water from the melting snow. Their feet went "squush, squush," at every step.

Presently their little stream divided. "Which one shall I follow?" asked Jim, who was leading the way.

"Either one you like," said Granddaddy. "They are both about the same size."

Jim took the one that seemed easier to walk beside. But again this branch divided, and at last they were following a little thread of water about as large as the stream that comes from a hose.

All the time they were going up higher, along a little canyon, and on either side above them they caught glimpses of snow patches. Now they could



—Courtesy Pacific Gas and Electric Company.

A streamlet, starting from a snow bank.

see they were near the top of the canyon. Suddenly Jim shouted, "Well here we are. We can't go any further with *this* stream!"

Barbara caught up with Jim. There they were right up against a wall of snow that filled the top of the canyon. At the bottom of the snow bank was a lovely round little cave of snow, and out of this cave flowed their tiny stream.

"Well, sure enough," said Granddaddy, "here we are! Now, Barbara, last night I told you a story to answer your question, 'Where does the water come from?' Now you can see it answered with your own eyes. This is one of the places that the great Sacramento River comes from, this little snow cave, and *this*," he said, springing softly on the wet squashy pine needles, "is where the water in our well comes from!"

Barbara stared hard at the little blue and white cave, then she began to laugh. "Well, it's a beautiful answer to my question, Granddaddy! I love this snowy cave and this tiny creek that talks so much to itself. But I guess it's going to take a good deal of *coöperating* before this baby stream grows up to be the Sacramento River!"

Granddaddy and Jim laughed, too. "Coöperating" was a word that Barbara had just learned, and she did like to use it to show what *big* words she really could understand.

“Right you are, Ducky, and we’re going to spend the next few days following that coöperating business, all the way back to the Great Gray Sea! Now one more good climb and we’ll get out of this cold wet little canyon for a few minutes in the sunshine.”

Granddaddy led the way this time and, after a hard scramble up the steep side of the canyon, they came out on a high ridge, rocky and dry. Few trees were growing on that high place, and they could see out over the mountains for miles and miles. They found a sunny spot in the shelter of some great rocks and stretched out to rest and to warm their damp feet.

The tall dark pines in the canyon below them swayed a little back and forth. The children loved the deep humming murmur of the wind in their high tops.

“Oh, Granddaddy,” said Barbara, “I never knew pine trees were so beautiful! They are so tall and straight, so green, and they smell so delicious!”

“Yes,” said Granddaddy, “I think the mountain trees are the most beautiful trees in the world. And by the way, Barbara, your story of coöperation can begin right here with those very trees.”

“A story, Granddaddy?” said Jim. “Is it going to be a long one? For if it is, I say that we move before it begins. It’s too hot here! I’d like to get

back in the shade of those trees if we're going to have a long story!"

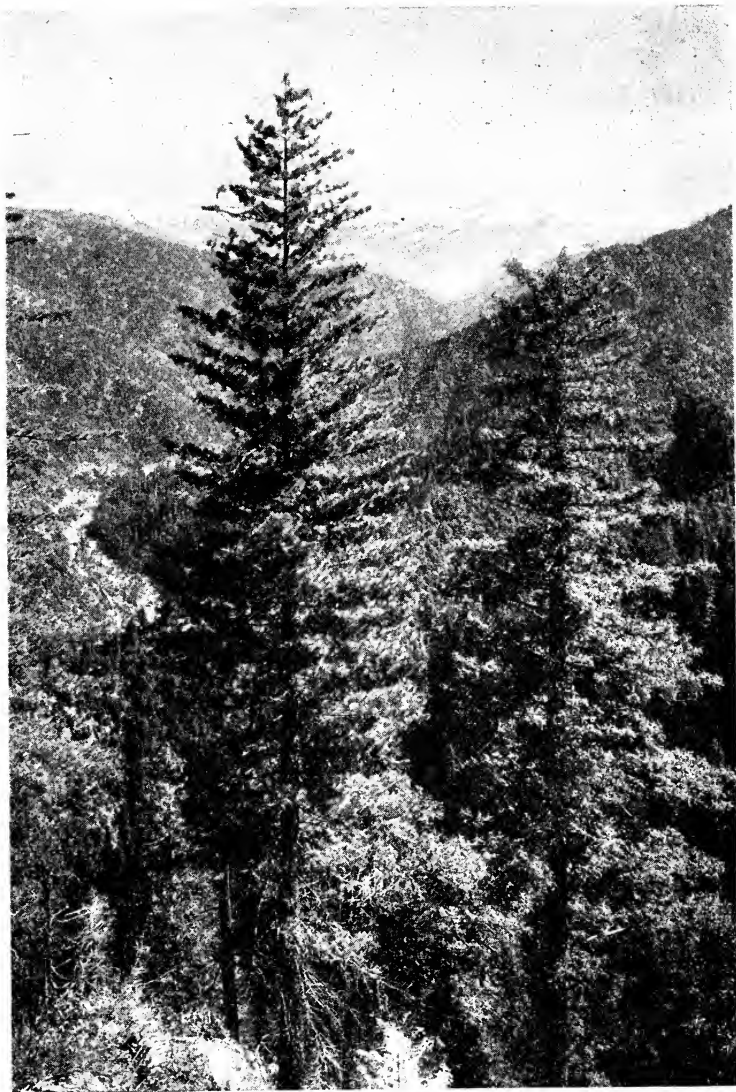
"It isn't long, and your feet are wet. Stay here in the hot sun and I'll make it short. Besides, you really have told half of the story yourself, Jim, right now!"

Jim looked rather surprised, and Granddaddy went on quickly. "Barbara said it would take a lot of coöperating before that baby streamlet grew into the great river of our valley. She meant that hundreds and hundreds of little streams, like the one we followed, must run together and make larger and larger brooks. The brooks run together and make little rivers, and then bigger rivers. They all flow down the valleys into the great Sacramento. But every one of those thousands of baby streams had to have a nursemaid! Who do you think did this job of nursing the thousand babies?"

Barbara was puzzled. "Tell us, Granddaddy!"

"Ask Jim. He told us just now when he wanted to move away from this warm dry spot into the shade again."

"Oh, Barbs, I know! He means the trees! Right here there are no trees, and the sun and bare rocks are hot and the snow is all gone. But down in the thick shade and brush the snow bank is still deep and solid. The ground is soaking wet and the little stream gets a good start in life!"



—Courtesy Great Western Power Company.
The forest nursemaids.

Both children laughed. "Well," said Barbara, "no wonder it grows to be a great, grand river, with such wonderful nursemaids to take care of it when it's little."

"Children, do you remember the other evening when you were telling all the important things that water does for us? Suppose we were to say over all that wonderful list you made, and after each one of the uses of water we would add, 'It is the forests that keep the water safe for us! Thank God for the forests!' That is really what we ought to say whenever we see the beauty and the comfort and the safety that water brings to our homes, down, far away from these mountain forests. If these mountains were bare, the first warm sunny days of spring would melt the snow fields all at once. The water would go rushing in torrents and terrible floods down to the valley and out to the ocean.

"When the snow was all melted, in a few short days, there would be no more brooks and no more rivers. There would be no underground streams and no wells, because the snow would melt so fast and run away so fast it would not have time to soak deep into the ground.

"These great evergreen forests stand thick and close above the snow banks and hold off the hot sun. In their deep cool shade the snow melts slowly. A great deal of it sinks into the ground, and the

underbrush and pine needles help to hide it from the sun.

“The little streams flow on out of the cool dark canyons all through the summer months and run together and make the great rivers. As they go on their way we take all the water we need from them to make our ranches green and our cities safe and beautiful. But, if it were not for the forests, we valley people would have only a rainy season, then a terrible time of rushing floods, then long dry months in a country like a desert.”

Jim and Barbara listened very seriously to Granddaddy's little story. As they started down the canyon again, Barbara laid her hand on the rough trunk of a great pine tree and looked up into its far-off murmuring branches. “God bless the trees that keep the waters safe for us!” she said.

Jim did not laugh at her as he usually did when Barbara was specially serious. When they were back in the car he said, “Now I understand what all these signs along the road mean—‘Help Prevent Fire,’ ‘No Camp Fires Allowed,’ ‘No Smoking.’ I can see now why it would be such a dreadful thing if a fire got started in this forest.”

“Indeed it is a dreadful thing,” replied Granddaddy. “Later in the summer when the season is drier, a careless match, a burning cigarette, or the hot ashes of a camp fire may start a terrible blaze

that will run for miles through the mountains, burning the forests and drying up the streams.

“Listen, children, do you know that all these hundreds of miles of mountains are *yours*? No man owns them. They are national parks, owned and cared for by our government. That means all of us, even you two children, Jim and Barbara. These mountains and forests give us our water. That means they give us nearly all the good things in our lives. It is part of your job in life to take *good* care of them, and especially to do everything that you can to keep fire from starting among these beautiful trees.

“Now that’s the end of my sermon, and here we go, heading for home again. And here is our little river, already grown as big as this from hundreds of tiny streamlets running together out of little canyons and sheltered snow banks.”

“Has it a name, Granddaddy, this little river?” asked Jim.

“Yes, it is called the North Fork of the American River. I wish we could drive all the way home along its banks and watch it as it grows larger and larger on its way to the valley. But the highway could not go down the steep rough canyon the river follows.”

Sure enough, before long the little river went plunging off out of sight while the smooth highway

took them swiftly along the canyon side and back toward the lower hills. Before darkness had fallen, two very tired children were having dinner in a pleasant foothill town, and soon after were sound asleep.

WORK AND STUDY PLANS

Things You Can Do Alone

Write these sentences and put in the words that are left out:
The good highway that Granddaddy traveled on was built by

.....
The mountain forests belong to.....

The signs that Jim saw tell people that they must not

.....
We need trees in the forest because they.....

Granddaddy took Jim and Barbara from Sacramento across the American River and up the Victory Highway. They ate lunch at Emigrant Gap. They spent the night at Auburn. See if you can find these places on a map. Draw a map of your own, showing their trip. Show the three branches of the American River. Show how they meet and how they flow into the Sacramento River.

Things You May Do Together

Make a big map on wrapping paper to show the trip the children took. Draw or cut out pictures to show the country through which they traveled. Show the valley farms and the foothill orchards. Show the mountain forests, the little streams, and snow banks.

Have a poster contest. Make posters to teach people to protect the forest from fire. Vote for the best poster. Send the winning poster to the United States Forest Service, Ferry

Building, San Francisco. Write a letter to the Forest Service telling them what your class thinks children could do to help prevent forest fires.

Important Facts You May Need

The State of California built the good roads that go up into the mountains.

The United States owns the mountain forests. That means all of us own them.

The United States pays men to take care of the forests. They are called Forest Rangers.

The Forest Rangers tell people how to help take care of the forest.

Forests keep the sun from melting the snow too fast.

Books You May Want to Read

"New Geography," Book I. Frye. Pages 32 to 41.

"Home and Its Relation to the World," H. W. Fairbanks. Pages 50 to 53.

"Human Geography," J. Russell Smith. Pages S. 29 to S. 31.

"Best Stories," Child's Own Way Series. Page 259.

"Modern School Readers," Book Four. Pages 236 to 242.

"Modern School Readers," Book Five. Pages 23 to 32.

"Modern School Readers," Book Six. Pages 42 to 55.

To help you in making your map of the three branches of the American River, see if you can get a map of Placer County and a map of Eldorado County. Write to the Chamber of Commerce at the county seat of each county. Find out the names of these two towns.

PART II

DOWN TO THE GREAT GRAY SEA

The next morning they were on their way early. "We'll leave the main highway for awhile," said Granddaddy, "and see if we can find our little river again."

"Here it comes," cried Jim in a few minutes. "Oh, look, Barbs, how big it is now! And here's another little river. They join here!"

Near the bridge two tumbling, racing streams rushed together. "This other river is called the Middle Fork of the American," said Granddaddy, "and it, too, has come down by a thousand little streams out of the snow banks and forests of another canyon. Together they make quite a stream, don't they? But wait a few more miles and see what happens to our river."

After another hour or so of driving they left the main highway and soon reached a river so grown up that they hardly knew it. But they understood how it had grown so large, for there on the right it had been joined by another river coming down from its own deep canyon.

"This," said Granddaddy, "is the South Fork of the American River. From here on it is all one stream—a fine big river, as you see. It makes a beautiful fertile valley as it flows quietly along,

its steep rushing torrents and mountain canyons almost forgotten."

The children watched for glimpses of the lovely quiet stream as they drove along the highway. Soon the road left the river, and they drove through rich and beautiful orchard country, over a bridge and into Sacramento.

They drove through the city until they came once again to their river of the Far High Peaks, just as it flowed quietly into the Sacramento and gave up all the water it had brought so far to the great river that carried it back to the sea.

"Now," said Granddaddy, "say goodby to your baby stream." Barbara laughed. "It surely has grown up fast since we saw it with its nursemaids yesterday afternoon!" she said.

"Now we know where *this* river came from!" said Jim. "We know it all the way from the snow bank to its mouth. But how about the Sacramento itself, Granddaddy? Where does it come from?"

"All that you learned yesterday and today about the American River is true for the Sacramento. It comes from a spring, fed by snow banks far up on the side of Mt. Shasta in the North. And, as it flows southward, many other rivers join it, each coming from its own snow fields and canyons and forests in the kingdom of the Far High Peaks. It is a great river now because so many streams have already



—Courtesy of the Sacramento Chamber of Commerce.
Mount Shasta and the beginnings of Sacramento River.

emptied their waters into its current. There are still two more to come after our American River here."

The children were silent, thinking of the far snows and forests and of the thousands of tiny streams that had brought their water down to the great river. But even while Granddaddy was talking he had started the car, and Jim came out of his dream to say suddenly, "Where are you going, Granddaddy? We aren't headed for home in this direction!"

"Wait and see!" replied Granddaddy. Back they go, through the city and down along the water front. Oh what excited children they are! Here they are in a ticket office! Granddaddy is buying *three* tickets, and "Yes, sir," the clerk is saying, "your car can go down to San Francisco on the same boat. The *Delta King* goes tonight. She leaves in ten minutes. Here, boy, get the gentleman's baggage out of his car."

Whistles were blowing, bells ringing, and people crowding up the gang plank. There was a great splashing as the big paddle wheel started to turn. The *Delta King* moved slowly away from the dock, out into the river.

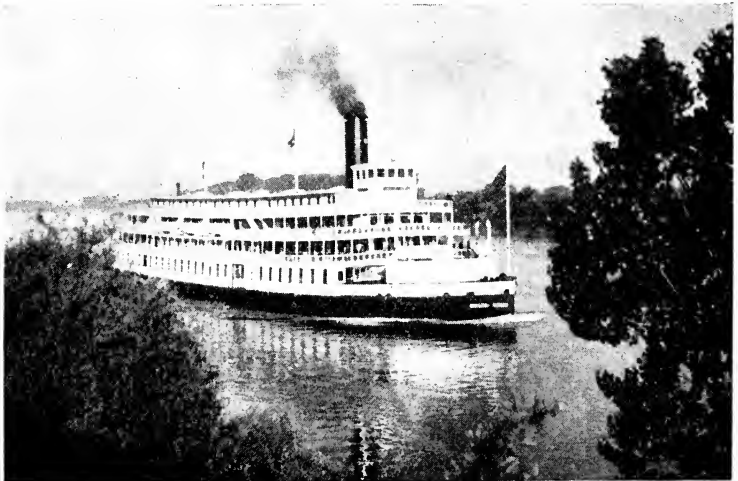
"Granddaddy, are we really going to San Francisco? Why didn't you tell us?" cried Barbara.

"But I did tell you. Didn't I say we were going

to follow our little river all the way from the Far High Peaks down to the Great Gray Sea? Well, here we are on the last part of the trail."

A wide and wonderful trail it was now, in the golden light of evening. The great quiet river flowed steadily between its green banks, on and on down to the sea. The steamer that had looked so large to the children as it lay at the dock now seemed small and far away from the land on either side. Above the willow trees that grew up from the shores they could see only the sky, red and gold in the sunset.

"Where are the farms, Granddaddy?" asked Jim, "I thought there was good level farm land all



The "Delta King," going down the Sacramento River.

the way down the river, but there is nothing to see but willow trees along the banks."

"But the farms are there, Jim. Look now—what is that you see just over the trees there?"

"It's a windmill and a big water tank, but—how funny, it seems to be down low!"

"That's the answer," said Granddaddy. "All this level valley land is down low, almost as low as the surface of this river. These high banks that you see are all built up by men. We call them levees. They hold back the high spring floods and save the homes and barns and crops from the rush of flood water. The trees have grown over the levees and they stand high and strong to keep the fields safe. There are great farms back there, out of sight. Here we are now, coming to a little wharf where we shall take on a load of some kind. You will see, it will be something that grew on a farm."

A big red light suddenly blazed out on the river bank, which was now deep in the shadows of night. The steamer whistle blew so loud and sharp that the children jumped. Bells rang down in the engine room, the paddle wheel stopped churning, and the ship glided silently up to the little dock. In the wink of an eye big ropes were flung out to hold the ship fast.

A gangplank was lowered from the wharf to the boat, and soon small hand trucks were racing up

empty and flying down loaded with crates of fresh vegetables and fruit.

"You see," said Granddaddy, "the Great Valley is sending down to San Francisco its breakfast fruits and its salads and vegetables for tomorrow's dinner. The river water made them grow and now the river is carrying them to market. All night the steamer will be stopping at little riverside docks like this. But," he added suddenly, looking at his watch, "you will be sound asleep, and it's time right now for you to be in bed."

Jim and Barbara were sure that they could never shut their eyes on such an exciting night, but the fact is that they were no sooner curled up in the cozy little "bunks" of the stateroom than they were fast asleep, tired out from their long day on the trail of the waters.

It was a good thing that they slept soundly, for Granddaddy wakened them when it was barely daylight. "Turn out, young sailors!" he cried, "and here are your winter coats. You'll need them!"

"I'll say we need them!" muttered Jim, his teeth chattering in the sharp damp cold as he hurried into his clothes. But once out on the deck a brisk run set their blood racing and they were soon standing high up on the forward deck, braced against the strong cold wind and filled with delight at the wide scene spread out before them. Dark gray waters

stretched on either side so far that the shores looked dim in the dawn twilight. There were gray ships here and there with lights still shining at their mast-heads, and lights on the far shores where towns were lying, hidden in the dusk.

“But, Granddaddy,” cried Barbara, “where is our river? It didn’t grow *this* big, did it, while we were asleep?”

“Yes, and no, Barbara. While you were asleep our river, gliding along among many islands, met the waters of another great stream, the San Joaquin, the river that flows from the other end of our Great Valley. It, too, like our own Sacramento, grows from thousands of streams coming down from the Far High Peaks. Back there, among the islands, the two great rivers flow together. The salt waters of the ocean come to meet them. This is Suisun Bay where we are now, and here the waters of the mountains and the sea come together again after their long separation. But we are not yet at the end of our trail. See what we have here ahead of us.”

They had been looking back toward the islands and the rivers, but as Granddaddy spoke they faced about and Jim shouted with surprise. Ahead of them the shores of the wide bay curved toward each other, and high above the water from shore to shore swept a glorious bridge, gleaming like silver

in the rays of the sun, which by this time was rising over the eastern hills.

“This narrow strip of water is Carquinez Strait,” said Granddaddy, “and this is Carquinez Bridge. It is one of the greatest bridges in the world. See, it is so high above the water that we can pass easily beneath it—even this large steamer.”

Soon the bridge was over their heads, then it fell swiftly away behind them. The ship steamed through the straits and out into another bay, even greater than the one they had just left. It was San Pablo Bay.

“Now we must have something to eat,” said Granddaddy, and the children, though sorry to leave the deck, were hungry enough to follow him gladly down to a hot and fragrant breakfast. They made short work of eating and soon were on deck again. This time they caught their breath with wonder at the sight ahead of them. They could see the hills of San Francisco, with their tall buildings gleaming in the morning sun. They could see miles of docks, like a fringe along the edges of the hills. There were great ships, steamers, and ferry boats everywhere in the dancing waters of the bay.

But they had time only for a glimpse. Already their ship was nearing its own dock and Granddaddy hurried them to the stateroom to get their suitcases ready. Now their ship slowed down, was

made fast to the dock, and the passengers were leaving rapidly. Down on the long covered dock they found their roadster waiting, and out they drove from the dock to the Embarcadero, the wide busy street along the water front.

Granddaddy seemed to know just where he wanted to go, and he guided the little car quickly through the traffic, out of the Embarcadero, among warehouses and factories. Soon they were climbing a steep road with stone balustrades, winding around a hill. Then they came to the level summit and got out of the car.

“This is Telegraph Hill,” said Granddaddy. “Long ago when San Francisco was a very small town, a lookout man stayed up here. He could see far out toward the ocean, and when he saw a ship coming, he signaled the great news to the townspeople. It is still a wonderful place to see the city and the bay.”

Indeed, the children thought so too. They were silent as they looked at the wide scene spread out around them. Before them lay the great bay of San Francisco, leading away to the north, towards the two rivers and their valleys, and away to the south, out of sight. Over on the opposite coast were cities, as far as they could see. Big islands lay between the shores, and everywhere were ships and ferries.

Then they turned to look at San Francisco,

spreading out from the base of their hill. Houses and great buildings and wide streets climbed the steep hills and filled the valleys and stretched away as far as their eyes could see. They had never dreamed that a city could be so big!

Turning around they saw the shores of the bay come closer together until they seemed almost to meet.

“That narrow place where the shores come close together must be the Golden Gate, isn’t it, Granddaddy?” asked Jim.

“Yes,” answered Granddaddy, “and that is almost the last stop on the trail we are traveling. Come, we’ll follow the bay to the Golden Gate.”



The Golden Gate.

Down they went again into the busy streets until they reached the water at the Marina. They drove along the shore until they stood on the wide embankment of Fort Point. The dark walls of the old fortress rose high behind them. Across the strip of water before them the hills of the opposite shore seemed very near in the clear morning light. The waves tumbled and gleamed with breaking white edges, across from shore to shore.

“This is the gateway,” said Granddaddy, “through which our rivers of the Far High Peaks go out at last to the home from which they came. Now it is only a few miles to the end of our trail.”

They went back to the streets of the city and then out through the pleasant green drives of the Presidio. The road led to a high open place where once more they left the car. They stood close to the edge of a steep, tall cliff. Far down below them the waves were breaking on the rocks. Behind them lay the Golden Gate. The opposite shore seemed far away, disappearing into a blue haze as it swept to the north. But Jim and Barbara were looking only straight ahead, straight out across the tumbling waters. Their eyes went past the stately ship that below them was putting out to sea. Far and far and far their eyes followed the vast stretch of ocean until it melted into a dim, shining mist, and met the blue sky bending down.

They were silent a long time. Then Barbara said, "It's the end of our trail, isn't it? Our rivers have come home to the kingdom of the Great Gray Sea."

"Yes," said Jim, "but look, Barbs, they are already starting on their way back again!"

Barbara laughed as he pointed to some great white clouds floating across the sunny sky. Granddaddy laughed, too, and said, "Barbara is right. It is the end of our trail and, like the clouds, we must be starting back again."



WORK AND STUDY PLANS

Things You Can Do Alone

Write these sentences and put in the words that are left out:

There are.....rivers that run into the Sacramento River.

People can go from Sacramento to San Francisco by four ways: by....., by....., by.....and by.....

At the place where the Sacramento and San Joaquin rivers join each other there are many.....

Finish your map and show how the children went down the Sacramento River to Suisun Bay, through the Carquinez Strait to San Pablo Bay, and into San Francisco Bay. Show the Golden Gate and the Pacific Ocean.

Things You May Do Together

Finish your big map with drawings or cut-out pictures. Show the river steamers, the Carquinez Bridge, the big ships, and the ferries on the bay.

Important Facts You May Need

The Sacramento River starts from the snow banks of Mount Shasta.

These rivers run into the Sacramento River: McCloud River, Pit River, Feather River, Yuba River, Bear River, American River, Cosumnes River, Mokelumne River.

These rivers run into the San Joaquin River: Calaveras River, Stanislaus River, Tuolumne River, Merced River, Fresno River.

Kings River and Kaweah River run into the Tulare Basin. Kern River runs into Buena Vista Lake.

The place where the Sacramento and San Joaquin run together is called the Delta. It is full of small islands.

The water of the two great rivers runs into San Francisco Bay.

The water of the bay goes out to the Pacific Ocean through the Golden Gate.

Books You May Want to Read

“Home and Its Relation to the World,” H. W. Fairbanks. Pages 29 and 26.

“California,” H. W. Fairbanks. Pages 26, 79, 88.

“Human Geography,” J. Russell Smith. Pages S. 33 and S. 51.

“Seeing California,” Paden. Pages 85 to 95.

“Boys’ and Girls’ California,” Salisbury. Page 191.

CHAPTER VI

THE GREAT MAP

They did not return by the river boat. Instead, they drove home, crossing the bay with the car in a ferry boat and crossing the rivers on long bridges. It was late at night when at last they drove in at the gate of the ranch and tumbled into their own familiar beds.

The next morning at breakfast Jim and Barbara were eager to tell their mother and father all about the journey on the trail of the waters, but Mother said, "I know it's a long story, and we want to hear every bit of it. But now it's time for you both to get back to your regular chores. Wait till lunch. Your cousins are coming over for lunch. They will want to hear all about your trip."

Jim and Barbara were so glad their cousins were coming over from the neighboring ranch that they were willing to go to work without telling a word of their adventures, although it was hard to keep them bottled up so long! The cousins, John and David and Jeanne Graham, were the same ages as Jim and Barbara, except that John was a little older. They had played together and gone to school together all their lives.

“Mother,” begged Jim, “won’t you please telephone Aunt Jane and ask her to bring Phil and Betty along?” Philip and Betty were two other cousins who lived on the ranch beyond the Graham’s. “They’ll want to hear about our trip, too.”

Mother agreed, and lunch was quite gay with seven children and the grown-ups. All were interested in the story of the mountain forests, the snow banks, the little streams, and the rivers that went out at last to the bay and the ocean.

When everything had been told, Aunt Jane said, “What a wonderful chance you two children have had to learn about our valley! I wish the rest of us could have gone with you.”

“Well,” said Granddaddy, “what they learned is only a beginning. If all of you children are as interested as Barbara in the story of water and what it does for our land and for us, I have an idea——.”

“Oh, tell us! Of course, we’re interested!” said Barbara and David together.

“Count me in too, Granddad,” said John, who was the oldest of all the children, nearly thirteen, and sometimes did not want to play with them.

“Fine!” said Granddaddy. “To tell the truth, I’ve already talked over this idea of mine with your Dad. He has said we may use the granary for a workshop to carry out my plan. Let’s go out there!”

The children scampered ahead of him and were soon examining with interest the big room where the grain was stored. It was nearly empty now. Its smooth concrete floor was almost cleared of the sacks of grain that filled the room at harvest time.

“Now, my idea is that we’ll all turn in and make a map.” The children, who had expected something more exciting, looked so disappointed that Granddaddy laughed. “No, not a regular map drawn on paper. We’re going to *build* our state. We will build it of solid adobe, as big as this floor! It will be so big we can walk around in it and make mountains and rivers and plant forests and build cities and sail ships on the ocean and bays! That’s my idea. But don’t think it will be all play. There’s hard work ahead of us all.”

Their faces had brightened again as Granddaddy explained his idea. “It sounds to me as though it would be more fun than any game. We’ll have to have lots of books, won’t we?” said David, who was a great reader.

“Sounds to me as though we’ll want a lot of muscle first,” laughed John, rolling up his sleeves, “I knew you’d need me in this game! Where’s a shovel and a wheelbarrow, Granddad? I know where there’s plenty of adobe without being told!”

“Don’t worry!” replied Granddaddy. “We’ll need all the brains and all the muscle, too, that we

have. But first we need some chalk and a measuring line and a long straight board and a map to copy from."

Granddaddy himself brought out the map. He must have had it ready beforehand. The boys soon found the chalk and board and line. The map was unrolled and hung on the wall. "Now," said Granddaddy, "we want to make a copy of the outline of this map on our floor, as large as the floor will let us make it. How shall we begin?"

Not even John seemed sure of what they should do. "Shall we measure the floor first?" he asked. "That's a good beginning," said Granddaddy.

They found they had a space thirty-five feet long that was free for their map. Then Jim measured the map, which was three feet from top to bottom. David said, "We can make a map ten times as big as that one, and have five feet left so we can walk around the edges."

Then they took a ruler and drew squares across the wall map. Each square was an inch. Then with the long board they drew squares on the floor. Each square was ten inches. Then they all took pieces of chalk. They began at different places on the map. Each one started to copy the outline of the state, one square after another. They had to copy a square that was one inch on the wall map into a square that was ten inches big on the floor! Luckily

there was plenty of chalk, and it wasn't hard to rub out mistakes drawn on the smooth cement.

Before long their outlines joined each other, and there on the big floor was a clean white line exactly the shape of California. The children themselves were surprised to see how truly their great big state copied the lines of the map on the wall.

"Now how shall we make it stay there?" asked Granddaddy. "We don't want our good work rubbed out."

"Paint it!"

"Oh may we use that red paint Dad has in the workshop?"

"Where can we get enough brushes?"

As usual, all of the children were talking at once. After a little scurry around the ranch, up in the playroom, and out in the workshop, a handful of brushes was gathered up. Daddy let them have the red paint, and before the afternoon was done, there, on the granary floor, was a great outline map of California, painted to stay, in bright red lines.

The mothers were called in to admire it, and were so delighted with Granddaddy's plan that Aunt Jane said, "I'll tell you what I'll do, Father. I'll bring all five of the children over every afternoon until the map is finished."

"Oh, hurrah," shouted the children, who dearly loved to play together.

“I hope it will *never* be finished!” said Jeanne, as they tumbled into Aunt Jane’s big car.

Next day, sure enough, John needed his shovel and wheelbarrow. He hauled load after load of hard adobe lumps in from the field and dumped them near the granary door. Jim and David asked Daddy for some boards and built a large shallow box or trough. The girls were busy breaking up the hard adobe. Then they sifted it into the trough, to take out any bits of roots or weeds that were stuck in the clay.

When the trough was nearly filled with the clean sifted dirt, a hose was put on the nearest faucet. All joined in a grand game of “mud pies.” They worked the water into the adobe until it was like smooth, thick dough. Then each one took a shingle, loaded with this dough, into the granary.

The real work of map making began when they started to build up the mountains of California. Granddaddy had many books, with pictures and maps to help them. They spent a great deal of time in finding out about the different mountain peaks and ranges, and how high they were. They then figured how high they needed to build up the adobe peaks and ridges on their map.

At last the big task was done. There was their great state, with all its mountains and its wide valleys spread out on the granary floor. It took several

days, and they had many troubles, especially when the adobe dried too fast and cracked and had to be patched.

When they finished the mountains, Granddaddy said, "Now we have done the hardest part of our work. The rest will be more fun. First of all, we need some paint. I have it all ready for you—white and green and yellow and red and blue. Where shall we put these colors?"

"White for snow!" cried Barbara. "Let's begin with Mount Shasta up here and give it a white crown like the pictures!"

"Blue for water—the rivers and lakes and bays and a big strip of ocean along the Coast," said John.

"Green for the mountain forests!" said Jim.

"How about green for the valleys?" asked Jeanne.

"Well," Jim answered, "we can't tell them apart if they're both green. Let's paint the state the way it is now, in summer. We can use brown for the dry foothills and the pastures and grain and hay fields in the valley."

"How about the alfalfa fields and the rice fields? They're still green, and so are the orchards!" said Jeanne.

"I'll tell you," said David, who had read stories of long-ago times in California. "Let's paint the

state the way it looked before there were any farms, when only the Indians lived here. Do you know how it looked then, Granddaddy?"

"I think I do, David, thanks to your good friends, books. For many of the first white men who came into our Great Valley kept diaries of their trips—that is, a day-by-day story of all that happened and all that they saw. Some of these precious diaries were saved through the years, and I have seen them in libraries just as they were written. Some were later printed, and I have those books here and can read them to you.

"More than that, my own father, your great-granddaddy, came into this valley so long ago that, although other white men had come before him, it was still as wild as when only the Indians were here. I have listened many times to his stories of those far-away times, so I think I can tell you how to paint your map to show the valley in midsummer about 125 years ago.

"First of all, as Barbara said, we can give Mount Shasta his crown of snow, and, although it is midsummer, we can leave great white patches all over the upper part of our Sierras. For this part of our map we do not need the long-ago stories. Men have not changed the kingdom of the Far High Peaks. It lies today, just as it has for thousands of years, untouched, close to the blue sky above it.

“Now your darkest green paint will do for the mountain forests. We shall need a great deal of it.

“All the way from the cold snow fields and granite rocks of the highest peaks down to the valley foothills stretched a glorious forest of great trees. Pines—kingly trees, six and eight feet through their trunks and two hundred feet tall—were crowded all along the western side of the mountains. Firs and spruce and hemlock and cedar were nearly as large. Here and there in groves among the Sierra valleys were the giant redwoods, or sequoias, the oldest, the tallest, the most wonderful trees in all the world.



—Courtesy of the California Academy of Sciences.
Deer in the Sierra forest.

“Over on the Coast Range, too, you must use your dark green paint to show thick forests of evergreens. Here, too, are groves and even whole forests of the great sequoias, although these on the Coast are somewhat different from the giants of the Sierras.

“All around the edge of the Great Valley, where the steep rough mountains change into rolling foothills and broad valleys, is the oak region. Of course, there were oak trees all through the Great Valley, but it is in the foothills that the greatest and finest groves were found.

“The old explorers who came through these valleys called them beautiful parks. The oak trees grew thick, but not nearly so close together as the trees of the mountain forests. There was not much underbrush between them, just grass and flowers and, along the rivers, vines. They were like fine parks taken care of by skillful gardeners, say the old explorers.

“All these rolling foothills and wide valleys must be painted green. But do not paint them so dark a green as the mountain forests, and not solid green. In midsummer the dry golden grass will show in the spaces between the oaks.

“Now, before we go on to the valley itself, who has the blue paint pot? Well, John, while we are putting in the mountain forests and the foothill

groves, you must start your mountain lakes and streams and rivers. Follow the map as it is today, but we may want to make some changes.”

The paint was divided among the children, and little by little the mountains and foothills were colored as Granddaddy had described them. John painted a lovely big blue lake up among the high peaks, Tahoe, the Lake of the Sky, and many smaller lakes here and there as the map showed them.

Then he began to trace the little streams, one for each tiny valley or canyon of the mountains. Wider and bluer grew his lines as the little streams joined and joined until they came down into the Great Valley and flowed into the two great rivers. There in the upper valley was the Sacramento itself, coming down from the mountains around Mount Shasta, and growing wider and wider on its journey to the bay. Flowing into it, John painted the McCloud River, the Pit River, the Feather River, the American River, the Cosumnes, and the Mokelumne.

Then he painted the San Joaquin, with all the many streams that coöperated to make it so great a river—the Calaveras, Stanislaus, Tuolumne, Merced, Mariposa, Chowchilla, and Fresno.

Farther south were three rivers, clearly marked on the map in the mountains, with their names—Kings River, Kaweah River, and Kern River.

“But, Granddaddy,” said John, much puzzled, “where do they go? They don’t flow into the San Joaquin River. On this map they just seem to go out to the edge of the valley and then stop. Where does all that water go? They must be pretty big rivers, all of them.”

Granddaddy laughed. “No wonder you are puzzled. This map shows our state as it is today, and the fact is, today the water of all of those three big rivers is used up for irrigation ditches! But our map goes back to a time when there were no farms and no irrigation. I shall have to draw some things for you that I remember from old stories and old books.”

He took the chalk and down in the southern end of the valley, near where the mountains curve together and meet, he drew a small lake. “This lake was called Buenaventura, and the Kern River emptied its water into it,” he said. Then he drew a much larger lake, long and narrow, a little way north of Lake Buenaventura. “This,” said he, “was called Tulare Lake, and the water of Kings River and Kaweah River emptied into this long but shallow lake.”

“But Granddaddy,” said Barbara, “no stream goes out of this lake into the San Joaquin River. How can its water ever get back to the sea? Didn’t you say that all the water stolen away from the sea

by the Knight of the Two Great Winds came back to the sea again by the rivers and the bay?"

"Yes, I did say that, Barbara, and it's true in almost all of our state. But here is a place—and there are others like this in our state—where Prince Sun is in a great hurry to get back his precious water. He snatches it up before it has time to run back to the Great Gray Sea.

"This southern end of the Great Valley is very hot. Even in the old days, before any water was used for irrigation, the water of these three rivers of the South, spreading out into these two large shallow lakes, was evaporated by the sun just about as fast as it came down from the mountains.

"In times of high flood in the spring, when the rivers were very full and the sun was not so hot, Lake Buenaventura overflowed into Lake Tulare, and Lake Tulare itself sometimes overflowed into a sort of slough that carried its flood waters away into the San Joaquin and back to the sea. At such times the whole Great Valley, north and south, would be like one great lake that reached almost to the foothills on either side.

"When the floods were over and most of the waters had run off to the sea, wide stretches of marshland were left on both sides of the two great rivers. They were called tule marshes from the tules that grew thick in such land all over our state.

Nowhere were there such wide stretches of tule lands as in this southern end of our Great Valley. Here the waters of the three rivers lost themselves in the two shallow lakes and in the miles of tule swamps around the lakes.

“So, John, you must paint your blue rivers running into these two blue lakes. All around the lakes let’s paint the tule marshes. You can paint them a very pale blue dotted with green to show the tules.

“All the rest of the valley, between the river marshes and the foothills, can be painted golden yellow for the ripe wild oats that everywhere cov-



—Courtesy of the California Academy of Sciences.

Elk feeding near the San Joaquin River.

ered the land. You can make green dots on the yellow to show the oak trees. You can paint lines of pale green for the willows that grew along the streams where there were no tule swamps."

When the children had finished painting the valley as Granddaddy had described it to them, they all stood off to admire the work they had done.

"Now, Granddaddy, we've done the Great Valley, and all the mountains around it, and the bay. But there's a lot of California left, and we have a lot of paint left. Shall we begin to paint the country outside of the valley?" asked Barbara.

This time Granddaddy looked puzzled. "California is such a big country!" he said. "If you children want to learn about your state and to hear the stories of what has happened in it, perhaps we shall have to take one part of the state at a time. It's too big to do all at once, yet it really is hard to divide!"

"Well," said John, "we've started with the Great Valley, because that's where we live. Can't we leave the rest of the state for awhile and have the story of our valley first?"

"I think so," answered Granddaddy, "except that I must tell you a little about the other parts of the state so that you can understand better what happened in our valley.

"We won't paint all this long coast strip, be-

tween the mountains and the sea, just now, but here is some green chalk. We'll mark around its edges enough green to show that it is all a pleasant fertile country, watered by streams from its low coast hills. It is called the Coast Region of California.

“All that great country that lies below the mountains where they bend together and join each other is called Southern California. Part of Southern California is, of course, in the coast strip, and we'll mark it with the green chalk.

“Down here, behind the coast mountains, is a vast strange hot land that used to have no water, very few trees or plants, and very little life of any kind. It was a country where people could not live, except in a few spots here and there. This Desert Region we shall mark now with the red chalk. Later on you will hear a wonderful story about this land, and you will need all the kinds of paint you have to show this story on your map.

“While we are talking of deserts, we must use more of our red chalk to show that there are vast deserts all along the other side of our Sierra Nevada Mountains, east of our valley, outside of our state. These are like the deserts of our own Southern California.”

“Oh,” said Jim, “let's not go clear out of our state! Let's get back home again. We know now how the valley looked in summer, but didn't any-

thing else grow here except oak trees and willows and tules and wild oats?"

"Oh, Jim," answered Granddaddy, "if you could only see a picture of this valley as it was when the first explorers saw it! A good little farmer like you would have been happy in the richness of this lovely land. I'll try to make you a picture of our valley from the old stories I've heard and read, and from my own memory of my boyhood.

"First of all, there were the oak trees. There were two or three kinds, but all bearing acorns. One white oak especially bore long narrow acorns that were the richest kind of food for animals and men. Besides the willows by the stream beds, there were poplars, sycamores, alders, ash, and cottonwood trees. For human food there were, besides acorns in the lower mountains, pine nuts, and in some valleys black walnuts and hazel nuts. Buckeyes were everywhere in the canyons, and their nuts, too, can be eaten if carefully prepared.

"There were even here and there wild fruit trees, plums and cherries and crab apples. The lovely madrone trees brightened the forest with their red trunks and glossy leaves. Their smaller cousin, the manzanita, bore berries that made a rather pleasant drink, like cider. Juniper trees higher up bore berries that were good to eat.

"Bay trees added spice to the mountain winds.

There is no end to the list of bushes that grew in foothill canyons, but we must not forget to name the currant, gooseberry, and huckleberry bushes. They were useful for food as well as beautiful in the forest. Strawberry vines and blackberry bushes grew everywhere. Their fruit was larger and sweeter than had ever been seen before on wild vines. Grapevines twined thick among the trees along the streams, and bore sweet and luscious fruit.

“In the open lands of the valleys and lower foothills there was such pasture land as no farmer in the East had ever dreamed of. There were wild



—Courtesy of the California Academy of Sciences.

Grizzly bears digging for roots.

oats, a sea of oats, waving in the sun as tall as a man on horseback, their heads heavy with plump grain. In other places there were all kinds of clover, red and white and the small yellow burr clover, and alfalaria, with its purple blossoms. Fields of mustard had stalks ten feet tall in places!"

"Oh!" said Jim, his eyes shining with this picture of rich pasture land, "was there any stock to feed in those fields? Think of the fat beef you could raise on feed like that!"

"Good little farmer!" laughed Granddaddy. "Indeed there was stock in those pasture lands, and indeed it was fat. But it was not the kind of stock you are thinking of, Jim. Instead, there were herds of deer and elk and antelope, vast bands of them, roving through the Great Valley and the foothills, sleek with good feeding. If you children could all go back in some magic way to this valley of a hundred years ago I am sure it would be these great bands of beautiful creatures that you would love the most. Thousands of them, sometimes, moved slowly along, grazing. But they would go leaping and bounding away as swift as the wind if they were startled.

"Then there were the bears, especially the grizzly bears. These were huge fellows and there were hundreds of them, all over the valley and in the mountains and foothills. They were fat from rich

acorns and roots and from the young deer or antelope that they sometimes killed and ate.

“But these were not the only animals. There were always many coyotes and foxes and wolves. Of the smaller creatures, there were rabbits and badgers and skunks and raccoons and squirrels. Living in the streams were whole cities of beavers, and otters in the bays and the streams near the sea. Mink and muskrats were plentiful.

“In the vast tule lands were ducks and geese of every sort. There were so many that when they were flying they darkened the sky and the noise of their wings was like a storm. Quail ran thick in the grass lands and hills.



—Courtesy of the California Academy of Sciences.

Antelope in the Great Valley.

“The streams were full of fish. The great rivers swarmed with salmon, a large fat fish, delicious to eat. Clams and mussels and oysters were thick in the bays.”

Granddaddy really had to stop to get his breath after this description of their valley in the old days, and David spoke up.

“Granddaddy, it sounds like the most wonderful place for men to live in that I ever heard of, or read about in my books. Weren’t there any people here to enjoy this beautiful valley?”

“Wise David!” answered Granddaddy. “You are right to ask that question. No matter how wonderful and beautiful a land may be, what we are really interested in is the people who live in it. We want to know about the men and women and children in a land, and how they use their land to make comfort and happiness for themselves.

“I shall love to tell you all I know of the people that have lived in this Great Valley of ours. Tomorrow we’ll begin with the first inhabitants, the California Indians. Now it’s time to start home. Goodby all of you! Look, Aunt Jane is waiting.”

WORK AND STUDY PLANS

Things You Can Do Alone

Make a list of California trees that you have seen. Do you know how many of these grew here before the white men came?

Did you ever find anything to eat that grew wild? What was it?

Tell what wild animals or birds you have seen.

If you have traveled around in California, tell which part you like best. Why did you like it?

Things You May Do Together

Make a map like the one these children made. Read the story carefully to see how they made their map.

If you cannot make an adobe map on the floor, then make the map on as large a table as you can get. Cover the top with cardboard. Draw the outline of California on this cardboard. Build up the mountains from paper pulp. Make the pulp this way: Tear old newspapers into small strips. Soak them in a tub of water twenty-four hours. Squeeze out the water. Measure the wet paper pulp. For every three buckets of pulp add one bucket of flour and one-third of a bucket of salt. Mix them well. This will give you a good material to build your map. When it is dry, you can paint it with water colors or fresco paints or oil paints.

Important Facts You May Need

California has a long valley that goes from near the top of the state more than halfway to the bottom of the state. It is about 450 miles long and fifty miles wide. It is called the Great Valley.

On the east side of the Great Valley are the Sierra Nevada Mountains. On the west side are the Coast Range Mountains.

In the middle of the Coast Range Mountains there is a low place.

The Sacramento River flows from the northern end of the Great Valley and the San Joaquin River flows from the south-

ern end. These rivers join each other. They pass through the low place in the mountains and go into San Francisco Bay.

There used to be a great deal of swamp land in the Great Valley.

Books You May Want to Read

“Home and Its Relations to the World,” H. W. Fairbanks. Chapter XXI, XXII, and XXIII.

“Human Geography,” J. Russell Smith. Pages S. 12 and S. 13.

“Seeing California,” Paden. Pages 17 to 23.

“California,” H. W. Fairbanks. Pages 77 to 86.

A good relief map of California will be sent you if your class will write to the California Development Board, Ferry Building, San Francisco.

CHAPTER VII

THE INDIANS OF THE GREAT VALLEY AND THE BAY

PART I

GRANDDADDY DESCRIBES THE INDIANS

The children gathered around the map early next day. They were eager to hear Granddaddy's stories of those first people who had lived in their beautiful valley.

He did not keep them waiting. He came into the granary with some big books on his arm, and began at once.

"I suppose first of all you will want to know how the Indians looked. Of course they did not all look alike, any more than we do. But they were for the most part a little smaller than our race, and what we call 'heavy-set.' That means, the men had big muscles and the women were rather fat. They were all strong and could stand great hardship.

"Their faces were wider than ours. They had fine eyes and most of them had well-shaped noses. Their hair was black, their eyes were hazel, brown, or black. Their skins were dark, but some were lighter than others. Some men were very handsome, with faces that looked bright and pleasant. Some looked dull and stupid. So it was with the women.

Some were graceful and well shaped, with sweet, kindly faces. Some were fat and dull and homely.

“How did they dress? Well, children didn’t dress at all! You know, California is comfortably warm most of the year, and if you never were used to clothes you wouldn’t miss them. Men wore a sort



Indians of today. They are dressed partly in white men's clothes, partly in the old-time Indian clothes.

of little skirt of soft deerskin. Women wore two-piece skirts. The front piece was like a heavy fringed apron, made of small tules or strips of bark—for everyday. For best it was made of thick fringes of buckskin, strung with shells and beads. The other piece of the skirt went across the back and met in front at the top. For best, this part was made of a large soft piece of deerskin, slit into fringe at the bottom and beautifully ornamented with shells and beads or strings of colored seeds. This two-piece skirt made a very comfortable and pretty dress.

“If it was cold weather, men and women wore around their shoulders the skin of some large animal with the fur on it. Some wore soft warm capes made of strips of rabbit fur woven together. They sometimes wore moccasins but did not decorate them. Women wore pretty caps of woven straw. Both men and women wore their hair long, but short across the forehead.”

“Did they have scissors, Granddaddy, to cut their bangs?” interrupted Barbara.

“They had no scissors and no knives. They had nothing at all that was made of steel or iron or copper. All their tools were made of stone or shell or bone or wood. The barber who gave the Indians a hair cut did it with a stick, burned to a hot coal at the end! They singed the hair to the length they

wanted it! ("Ouch!" said Jim.) The men did not wear beards or mustaches, but as they had no razors they pulled out the hairs, one by one, using a pair of mussel shells for tweezers!

"They wore many strings of beads made from shells, polished and shaped and patiently drilled with a hole so they could string them. For their dances they wore beautiful head bands of feathers. Almost all women and some men had a little pattern of tattoo on the chin. The men, for special dances, painted their bodies with red and black and white paint, in stripes and zigzag patterns. Indians dressed up for a dance were a gay sight!"

"Where did the Indians live?" Barbara asked.

"You should know the answer to that question. Where do you think they lived?" answered Granddaddy.

The children didn't wait for Barbara, but they all answered together, "Near water!" "Along the streams!" "Beside lakes!" You see, they had been talking about the importance of water in our lives while they worked on the map.

"Quite right," said Granddaddy. "Each small village stood beside a stream of water. They needed the streams for water to drink, to cook with, and to bathe in. Indians liked to swim and dive almost as much as Jim does. Winter or summer, every day, they dived into the nearest stream or lake and

had a swim, men and women, boys and girls. Even tiny children, that could hardly walk, knew how to swim.

“They also needed the streams for food. The fish in the creeks and rivers were very important to the Indians for food. Birds lived near the streams and animals came to drink in them, so most of their hunting was done along the streams.

“The Indians in the villages along the same stream were friendly to each other, and those in the several villages on one river and on the smaller streams flowing into that river would all be friends. They would be called a tribe. Across the hills Indians living on another river would be strangers. They might even be enemies. They probably would speak a different sort of language.

“So you see, we have to add to Barbara’s list of the uses of water this curious thing it did for Indians. Streams of water decided where they should live, who should be their friends, who should be their enemies, and what language they should speak! For they had many different languages—nearly as many as there were valleys and rivers!”

“What kind of houses did they build?” asked Jim.

“Here in the Great Valley and around the bay country they usually began a house by digging out a circle ten or fifteen feet across, a foot or so deep.

Outside the edge of this they stuck long poles of willow or other trees, which they pulled together at the top and fastened in the center. Then they wove light twigs and branches or tules over this frame until it was covered closely enough to keep out wind and rain. The dirt taken out from the floor was banked up outside against the wall. A small door was left, over which a curtain of woven tules was hung. There was a hole in the roof for smoke from the fire to go out.

“It had no windows and was rather dark and smoky. Not a very good house, was it? But it was warm and snug from winter storms, and in good weather the Indians lived and worked and ate and slept out of doors.

“Then they built larger houses, with stout posts to hold up a roof. The white men called them ‘sweat houses.’ They were built with very tight walls, a very small door, and a fire in the center. The men gathered in this house in the winter evenings and danced or sang or played games, and slept there. Before they went to sleep at night they heated this house very hot until their bodies were covered with sweat, then they would run out and plunge into the cold stream nearby, come back and dry off, and then go to sleep. That is why this house was called a ‘sweat house,’ but really it was a sort of men’s clubhouse.”

“What did they have to eat besides fish?” asked Barbara.

“Did they go hunting?” asked Jim. “Did they have bows and arrows?”

“Yes, they had pretty good bows and arrows. They killed deer and elk and even bears with them. But arrows were not like our rifles, which will kill large animals from very far away. An Indian had to be near to kill such big game with an arrow. So the most interesting thing about their hunting was the clever and patient ways that they used to get near the deer or elk. Sometimes they drove them into traps or nooses. Sometimes they took turns running down an elk until the animal was tired out and could go no farther. Sometimes an Indian would dress up in the stuffed head of a deer and creep among a herd of live deer without scaring them away.

“Bears were hunted by many mountain tribes, but these large strong beasts could be killed only by a party of hunters working together. Some of the hunters would torment the bear, and, while he was chasing one man, another would come near enough to send an arrow into his heart.

“Small animals, like rabbits, and all sorts of birds were caught in traps and nets. Fish were sometimes caught with a line and hook, sometimes they were speared, but more often they, too, were

caught by building traps for them in the streams. The streams and sea beaches gave them clams, mussels, and oysters. When deer meat, fish, and birds were scarce, the Indians were not too particular. They ate worms and crickets and grasshoppers and slugs until they had good luck again in hunting better meat."

"How about bread and potatoes and vegetables and fruit and cake and candy? Did they have anything like these foods of ours?" asked the boys.

Granddaddy laughed. "The Indians of California knew nothing of most of your list! Instead of bread they had a kind of mush made of acorns. The acorns were dried and ground to flour. The flour was soaked in hot water to make it sweet. Acorn mush was their favorite food, but they gathered many kinds of wild seeds, ground them, and made them into mush or baked them into a sort of bread. They ate wild onion and garlic and other roots. They ate fresh green clover, as we eat lettuce, but clover seems bitter to our taste. They cooked yellow dock, poppy, alfilaria, and wild lettuce. There were many kinds of berries, as you children know, in the spring and summer.

"I know some of them!" cried John. "Strawberries and blackberries grow wild in the hills near here. Huckleberries are good to eat. I know a place where we camped one summer where there were

huckleberries." "Salmon berries!" cried another of the children.

"They used all these, and also manzanita berries and wild grapes. They had hazel nuts and pine nuts.

"They hunted mushrooms, and knew which ones were good to eat and which were poisonous. For special drinks they had a kind of cider made from the manzanita berries, and they used wild tobacco to smoke in pipes."

"But Granddaddy," interrupted Jim, "all these are wild foods. Didn't they raise anything at all? Didn't they keep any animals for meat or milk?"

"No, Jim, there wasn't a farmer in California in those old days. They ate just what Nature gave them to eat, and they were almost never hungry. This rich and lovely land fed them well enough, if they just kept busy collecting her gifts from the sea and the rivers, the valleys and the hills. Since they knew nothing about our kinds of cultivated foods, they never missed them."

"It didn't take all their time just to go hunting and fishing and to gather acorns and other foods, did it? What else did they do, if they didn't farm?"

"Well, they spent most of their time working in the factory."

"My goodness, I didn't know they had *factories*

and machines! I thought only civilized people had factories!" exclaimed David.

"Well, what is a factory?" asked Granddaddy. "It's a place where things are made. The Indians, it is true, had no machinery of any kind. All the things they needed they made with their two hands. Slow work it was, too, and as I said, they spent a big share of their time patiently making things. So although they worked at home, an Indian village really was like a factory. It is a very wonderful study to try to understand how they made such useful, clever, and often beautiful things with no machinery and no sharp, strong steel tools.

"What kind of tools did they have?" asked Jim, and Barbara asked, "Beautiful things? What were they?"



—Courtesy University of California.

*An Indian woman making twine from milkweed stems.
Carrying a load in a twine bag.*

Granddaddy did not answer them at once. He seemed to be thinking hard. Finally he said, "Are you really interested to know how these Indians of the Great Valley lived and what they made, how they worked and how they played?"

All the children said "Yes!" and Jim and Barbara were rather excited, guessing that some fine plan was in Granddaddy's mind.

"If you *really* are interested, let's all play Indian for a week or two!"

The boys gave a regular war whoop of joy at this proposal, and the girls were just as delighted.

"Tell us how, Granddaddy—can we really be Indians?" cried Barbara.

"I don't see why not, if you want to. But remember, it won't be all skylarking. Indians worked pretty hard, patiently, and carefully. Will you be *good* Indians?"

"Yes, oh yes!" the children exclaimed.

"Well, first we'll study these books a little and each of you can choose what you want to make. We will build houses and make some Indian clothes, and a few of the things that Indians needed for their everyday life. Then we will see what we can do with Indian games, songs, and dances. We might even have an Indian war!"

PART II

THE INDIAN VILLAGE

It is two weeks now since the cousins turned into a tribe of California Indians. What a lot of hard work they have done! What fun they have had! Their village is built on the Graham ranch. Today is visitors' day, and friends and relatives have come to have a powwow with the Indians. David Graham is their chieftain. He is welcoming their guests, and telling them the story of his little tribe.

"You see," he was saying (for an Indian, he spoke very good English), "we had to build our village by a stream. We asked Dad if we could have a little piece of this field beside the irrigating ditch. Then we would be sure to have water all summer long! This is a summer village, so we did not build big dance houses or sweat houses. We Indians usually leave the home village for a summer camp, and we just build a few small houses to use through the warm months. Come and see them."

The visitors were so interested in the Indians themselves that they seemed in no hurry to explore the village.

The boys wore track suits. Two weeks in the sun had given their arms and legs a truly Indian coat of brown. Over their trunks they had folded soft skins, fastened around their waists with a piece of

rawhide. "Of course," explained David, "real Indians would not have worn anything else. But we had to be a little civilized, so we boiled our track shirts with some oak bark and made them the same color as our arms and legs. Then we painted them." The stripes and zigzags painted in red and black and yellow on their bodies looked wild and savage, sure enough!

The girls wore two-pieced fringed skirts and very pretty they were, jingling with strings of bright seeds or bits of shell. Over their shoulders hung little capes of rabbit skin. They had made them of strips of fur, woven into a long straight piece, with a slit for their head to pass through. They were sewed part way up each side, leaving a place open for the arm. These capes, too, were fringed at the bottom. On their heads were little caps of basketwork, with gay colored patterns. All of them wore strings of beads made from bits of shell. Each girl had a neat little pattern painted on her chin.

"Mercy me, Barbara!" said her mother, "I hope it will wash off!"

"Mine will," answered Barbara, "but real Indian girls tattooed their chins and it stayed on all their lives! But my name isn't Barbara, it's Mem-chalo!" Everybody laughed and Mother asked where she got that name.

“We call her ‘Mem-chalo’ because she is always interested in water, and it means ‘water is good’ in our Indian language,” answered David. “We speak the Wintun language and our village is called ‘Holo-koma,’ and our tribe name is ‘Nui-mok’.”

“And what is your name?” asked one of the visitors.

“David is our chief,” said Jim, “so we call him ‘Cheketu,’ chieftain. They call me ‘Tulich,’ the swimmer, and little Billy is ‘Bula.’ That means ‘a drink of water’ and Billy is always thirsty. Philip is ‘Chil-chil,’ a bird, because he can whistle like a meadow lark. Every one of us has a name that means something in our Indian language. We made up the names from Paapan’s book. It gives a kind of dictionary of the Wintun language.”

“And who is Paapan?” asked Mrs. Graham.

“Granddaddy!” they all shouted. “But now come and see our village.”

The houses were small, since the Indians were rather small, too. They were neatly made, with a fire laid ready in the center under the smoke hole.

“John’s name is ‘Pau-klituk,’ which means ‘fire-maker.’ Show them how you start the fire, Pau-klituk.”

The young Indian took from the earth shelf around the wickiup a piece of dry wood with sev-

eral holes bored along its edges. He placed the point of a round stick in one of the holes and twirled it in his hands until a little puff of smoke appeared where the point fitted into the hole. Soon the smoke spread to the handful of very dry grass that he had heaped close to the hole. Blowing gently on the smoking grass, Pau-klituk soon had a tiny flame that spread from the grass to the leaves and twigs laid ready for the fire. Very quickly a steady blaze was burning.

“Splendid!” cried John’s father. “Next time we get out of matches at home we’ll send for you, Pau-klituk!”

Now the young squaws were crowding around, eager to show their work. For beginners, their baskets were quite good. They were not so beautifully woven as those the real Indians made, but they could be used, and they were decorated with pretty patterns.

“We spent days and days finding the right kinds of willow twigs and roots and stems and grasses to weave the baskets. It was hard work, collecting the things we needed, and soaking them and weaving them. I’ll never believe Indians were lazy!” said Barbara.

There were large coarse baskets for carrying acorns, trays, and beaters for collecting seeds, cooking baskets, and baby baskets, or cradles. No one

would lend them a real baby small enough to hang up in one of these basket cradles, so a large doll made a very quiet and contented little papoose.

“But our biggest job,” explained one of the girls, “was getting food every day and preparing it. Acorns of course were the chief food of the Indians, but it’s too early now to gather them. We gathered seeds and ground them with a long round stone in hollow places in big rocks that we found up in the



An Indian of today. Her tiny papoose is strapped onto a cradle basket.

hills in the creek bed. Then when the seeds were ground we boiled them in our baskets with red-hot stones dropped into the water and seed flour. The mush we made is not so bad!"

The visitors tasted it, but did not ask for more!

"The boys caught rabbits and we broiled the meat over the coals. We learned to make jerky or dried meat from the meat of a goat, which we bought, because there are no deer around here to hunt. And we wove our capes from the rabbit skins and made our skirts from goat skins. Paapan taught us to tan the skins so they would be soft and comfortable to wear.

"You certainly have been busy little squaws," said Mrs. Graham. "Now what have the boys to show us?"

"Of course our chief job ought to be hunting and fishing," said Cheketu, "but there isn't much game on this ranch, nor any fish in the irrigating canal! Here are our bows and arrows. We made them ourselves, and we have hunted rabbits with them. We made cord out of fibers in the milkweed stems and used it for rabbit snares and bow strings. We cut down the poles and set them up for the houses, though the squaws wove in the small twigs and tules on the sides. We made spoons out of shells. We all worked at the shell beads which we use for money and for decorating our clothes. Paapan was

right—we had a regular factory going here in our village.”

“Well we didn’t work *all* the time, you know,” spoke up Chil-chil. “We had games and dances and we sang songs. They were real Indian songs and Indian music that we found in Paapan’s books about the California Indians. We’re going to show you one of our dances.”

The whole tribe now moved out of the village and ran off into a field where a large oak tree stood. Under its shade they had made a circle of green willow boughs, laid on the ground, and the visitors seated themselves on this clean, comfortable rug. In the center the children were standing in two rows.

The boys had fastened twine nets over their heads, and the nets were stuffed with cat-tail fluff. Into this stuffing they had stuck feathers of all colors, and around their foreheads they had bright bands made of colored quills. They looked very brave and gay.

For music they had only a hollow log for a drum, whistles made of bone, and two split sticks that they beat while they sang, like castanets. They kept good time with these strange instruments, and the song, though it did sound odd, was lively.

The young Indians danced with so much energy and spirit that the audience felt very much like

getting up to join them. It was not such dancing as we see today. It was all made up of little hops and short runs, and part of the time they stood in place and just stamped hard in time to the music.

When the Indians were all out of breath from dancing, they offered to show their visitors the Indians' favorite game of "guessing." They played with two pieces of bone, one plain and one nicely ornamented. A single player held the bones, changing them from one hand to the other behind his back. The rest tried to guess which hand held the ornamented bone.

Acorn Song

Sung by the Women

Ya - a he - le ya - no hi - lo, ya - a he - le ya - no hi - lo,

Ya - a he - le ya - no hi - lo li - mo he - le ya - lo hi - lo.

Dance Song

Hi - hi - o he - he - o hi - hi - o he - he - o he - o he - o,

Ma - tin - ne him - ai na ma - tin - ne him - ai na

to - hi - e to - hi - e he - o he - o.

Songs from "The Tribes of California."

It turned out to be a rather lively and exciting game. The "counters," little bundles of painted sticks, passed around rapidly as each side lost or won. They all sat down for this game, and when they were rested from the dancing they brought out balls and rackets, that the Indian boys had made, and played a game something like our game of "shinny."

After this match was ended, with shouts and yells from the Indians and their friends, the visitors began to say goodby to this friendly little tribe. Soon the children were alone with Granddaddy under the oak tree, glad to rest quietly after their happy day.

"Well," said Granddaddy, "you certainly have kept your promise to be *good* little Indians. We have worked hard and played hard, and we have all learned a great deal about our homeland and how it gave food and comfort and happiness to the Indians who lived here before us. Tomorrow we must put away our Indian things and go back to civilization. Are you sorry? If you could choose, would you choose to have been little Indian children in this valley a hundred years ago, or would you rather be American children here today?"

The boys answered first, "Indian children! They didn't have to wear clothes!"

"They didn't have to go to school!"

“They played such exciting games! They were outdoors all the time!”

The girls were slower to reply. “They didn’t have to go to school, it’s true,” said Jeanne, “but I think even the children had to do a lot of pretty hard work, and not very interesting—just hunting for food and getting it ready to eat.”

“The women had a pretty stupid time, I think,” added Barbara, “working so long and so slowly to make their clothes and baskets, even if these baskets were rather pretty when they were done. Everything was so dirty and hard to do, without water in the house. I’ve had lots of fun *playing* Indian, but I’m glad that tomorrow we are going back to hot baths and clean clothes and a nice tableful of good things to eat.”

“How about it, Paapan?” asked David. “You’ve been telling us all the fine and interesting things about the Indians. Were there other things that we don’t know about them that were not so fine?”

Granddaddy laughed. “You are pretty wise little Indians after all! You want to look on both sides of this trail before you decide to follow it! Well, Jeanne and Barbara were right. It really was a rather hard life. It was dull, too, because they did the same old things over and over all the time. I’ll tell you something very strange.

“Around San Francisco Bay there are huge

heaps of shells that have been there for hundreds of years. They mark the places where Indian villages used to stand. These Bay Indians lived mostly on mussels and clams and oysters that they gathered from the bay. Year after year they threw away the shells until they made hills there on the level ground.

“Wise men have dug into these hills or ‘shell mounds,’ as they are called. They have found out two very strange things about California Indians. First, the wise men know that these mounds have been growing for just about three thousand years. That is, Indians lived in these same spots and ate about the same foods, three thousand years ago. Among the shells the wise men have found many other things that the Indians threw away, or lost, or buried with the bodies of the dead. From these things we can tell that these Indians of three thousand years ago lived and worked and made the same kind of things as the Indians who were here when my father came to California!

“Can you believe that in all those thousands of years they did not grow any wiser or do things any differently year after year? They never learned to plant seeds, or to make tools of metal, or to write words, or to draw pictures. No little Indian boy ever expected to see anything or learn about anything except what he had seen in his own village

from the time he was a papoose. Jeanne and Barbara were right. It must have been a dull life."

"But Granddaddy, how could that have happened? In other parts of the world I know people changed all the time. They learned new things and new ways of living. I mean our people, white people, in Europe where we came from. They were all like savages, too, three thousand years ago, weren't they?"

David, you see, had read a great deal about the countries that our fathers came from. He knew that our race, too, had once been like the Indians in their ways of living and thinking. But he knew also how fast we had learned new things, so that our ways of living were always changing from year to year.

"That's a good question, David," answered Granddaddy. "Let's all cut across the field to the granary and see if our big map will explain this puzzle of the Indians who never changed."

"Here we are," Granddaddy said a few minutes later, when they all stood or sat around the big map. "Our Indians, we think, came to this land from the North and came into California through the mountain valleys up here." He pointed to the upper end of our big valley. "After awhile no more tribes came because the land across which they had traveled broke up and the ocean cut our

country away from the country the Indians had come from.

“Those that had settled down in California went no farther. This great ocean, you see, was on one side of them, the high Sierras on the other side, the desert was south of them. No enemies came to fight with them because the sea and mountains and desert protected them. They did not try to get out of their land because it was a pleasant place to live and there was food enough for everyone.

“It was not like this in Europe where our race grew up. It was easier to pass from one part of the country to another. Now David, is your question answered?”

“Why no,” said David rather surprised. “What do you mean, Granddaddy? Oh, I see—do you mean that people learn new ways of doing things by visiting each other, so that each tribe finds out what the others have learned?”

“Good!” said Granddaddy. “That’s exactly what I mean. There are really only two things that make people learn new ways of living. One is necessity. When people live in a cold climate, or when they are having a hard time to get food, they just have to use their wits to make life more comfortable and safe. That was what made our race find out about farming and good tools and snug houses and warm clothes.

“The other thing that makes people learn is what you said, David, visiting strange peoples. They get new ideas from the strangers. They take these ideas home to try out for themselves.

“So you see, children, our California home was kind to the Indians and it was also cruel to them. It protected them from enemies and gave them comfort and food in its warm climate. But the mountains and sea and desert kept them away from other people. They had no hardships to make them learn new ways of living. They never, for three thousand years, saw any strange tribes who might have taught them something.

“Even in California, itself, the tribes were divided by hills and valleys, as we said before. The tribe on one river or stream knew very little about its neighbors on the river across the hill. So they came to speak different languages. Then it was harder than ever for them to get together or to learn from each other.

“They didn’t even fight each other very much. California Indians were the most peaceable of any tribes in America. They were good-natured, happy fellows, quite unlike the fierce savages of other parts of our country. Why should they fight? The land was so rich there was enough to give them all they wanted for their simple way of living. So the tribes lived happily enough, not interfering with

each other, but not learning anything at all from each other or from war or from hard need.

“Yet the story was not all so pleasant. There was a good deal of sickness among them, which they could not cure. Old age was very sad, for old people had teeth ground down by sand in their food, and eyes sore or blind from the smoke of the fire in houses that had no chimney. Toothless, they could hardly eat the tough, hard foods, and blind, they could not do any work except to carry heavy loads for the squaws. No one was kind to them.

“Although our Great Valley gave the Indians so much food, and so easily, there were seasons when little rain fell and there were few seeds or acorns. Then the Indians were hungry for months at a time. Little children and old people died from want of food. If they had been wiser, and had learned more from each other, they could have had better food and more of it. They might have learned to build better storehouses to save food for bad years. It wasn't a happy, care-free life after all, even in this rich and beautiful valley.”

“Well,” said Jim, “I take it back. I'd rather be a white boy and learn to farm. At least, I'll always have plenty to eat and better things to eat than those poor fellows had.”

“And I wouldn't give up my violin for all the Indian games and songs and dances in the world,”

cried Philip, who loved music. "And think of the great bands and orchestras in the city and the chance to hear fine singing and big organs. I made a mistake, Paapan, when I chose the Indian trail! Let's go back!"

"Books for me!" added David. "I'd rather have books to read, and some day perhaps write books myself than be an Indian chief! Goodby, Cheketu!" He tossed his Indian headdress with its gay feathers up in the air, and it fell off in a corner of the granary.

"Keep your books and violins and your clean dresses and kitchen sinks and bathtubs and good eats—but I want an airplane," cried John, "so goodby, little Indian trail! There are no airplanes or dynamos up there, and I'm going to be an aviator or an engineer, or both. Goodby, little trail!"

"Goodby, goodby!" sang all the children.

"But Granddaddy, it *was* fun, and I'm glad you taught us to be good little Indians for a few weeks anyway!" said Barbara, holding her Granddaddy's hand as they all went out of the granary.

WORK AND STUDY PLANS

Things You Can Do Alone

Suppose you are a little Indian girl or an Indian boy. Suppose you live in the same place you live in today. Write a story, telling all that you do in a day. Tell about the clothes

you put on and the things you eat. Tell how you work and how you play. Tell how your home country looks.

Things You May Do Together

Build an Indian wickiup.

Make a cradle basket for a doll papoose.

Learn an Indian song and dance.

Make an Indian dance rattle.

Grind seeds and make mush.

Make baskets.

Find out if there is a collection of Indian things in any place near your school. Visit it if you can.

Make a museum of Indian relics.

Build some little Indian villages on your big map.

Important Facts You May Need

California Indians were a little smaller than most white men. They were rather heavy and very strong.

Their homes were beside streams or lakes.

They did not travel around the country. Each tribe stayed in its own valley.

They did not fight very often. They were good-natured and peaceful.

They had tools made of bone or shell or wood.

They had no iron or steel or copper tools.

They made very good baskets.

They made clothes of skins.

They made bows and arrows.

They built warm, snug homes.

They ate acorns and other seeds, roots and some green plants, berries and nuts, fish and game, and grasshoppers.

The Indians that were here when white men came had lived in California at least three thousand years. They had not changed their ways of living in all that time.

Books You May Want to Read

“Docas the Indian Boy,” Snedden. Part I.

“Karoc Indian Stories,” Olden.

“Southern California,” H. W. Fairbanks. Pages 4 to 19.

“The Spanish in the Southwest,” Winterburn. Chapters I and II.

“California History,” Wagner and Keppel. Pages 79 to 86.

“California the Golden,” Hunt. Chapter VI.

“Boys’ and Girls’ California,” Salisbury. Pages 27 and 28.

The books that Granddaddy used to tell the children about the Indians were “Tribes of California,” Steven Powers, and “Handbook of the Indians of California,” A. S. Kroeber. These are grown-up books, but they have many interesting pictures of California Indians and the things they made.

CHAPTER VIII

THE FIRST WHITE MEN IN OUR CALIFORNIA HOME

The children came shouting and whooping into the granary next day, but Granddaddy met them very seriously, with his hand raised to quiet them.

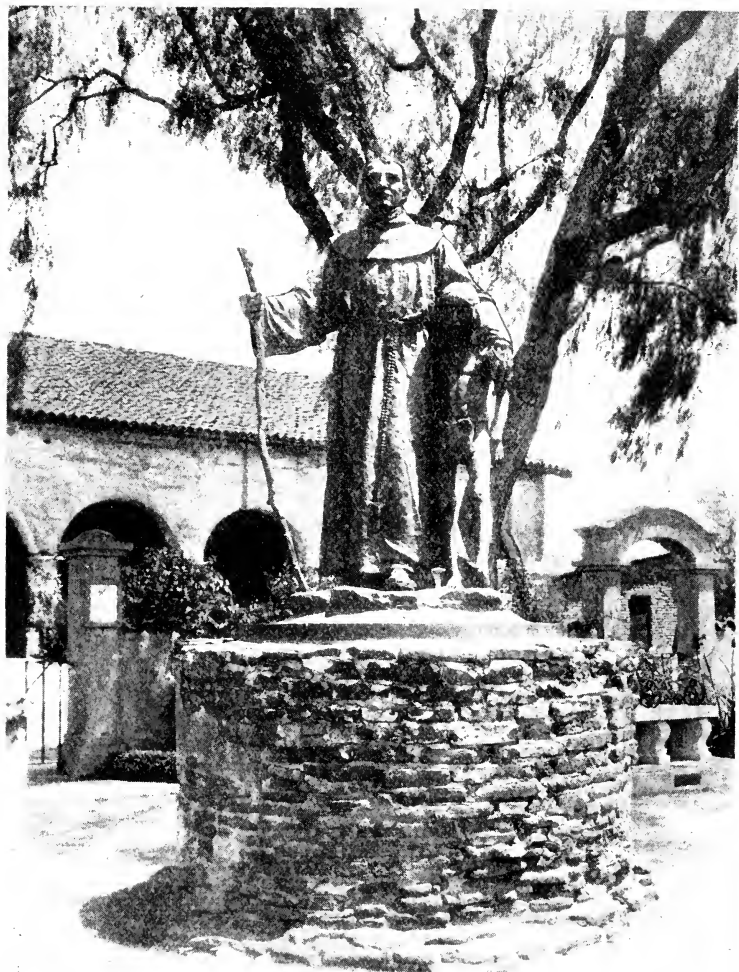
“Hush!” he said, “You are not wild Indians today. You are on a new trail, following a great and serious leader. You must behave like his sober and orderly band. See, here is your guide into the California of long ago.”

He opened one of his books and they looked into the pictured face of a man dressed in strange, long, dark robes. He was very solemn, it is true, but he had a look on his face so full of sweet kindness that the children smiled back at him. They turned to Granddaddy for the story they knew was coming.

“Yes, it is his story we are going to hear. For it was his dreams and his faith that sent the first white men through the desert and into our land where the wild Indians lived.

“This was Father Junipero Serra. He was a priest, who came across the seas from Spain, nearly two hundred years ago. He came to Mexico, or New Spain as it was called in those days.

“Now, Mexico had been discovered by the Spanish people more than two hundred years before



Father Junipero Serra. A statue at San Fernando Mission.

Father Junipero came there. The Indians had been conquered and cities had grown up, ruled by the Spanish king. There were Spanish governors and officers, although the people who lived in the country were only a few of them Spanish. Most of them were Indians who were partly civilized. Many were people of mixed blood, part Spanish and part Indian.

“But to the north of Mexico was a vast country that no one had yet explored. Some ships had sailed along its coast and there were said to be some fine harbors somewhere toward the north. But it was very hard for their small sailing ships to go up the coast because of the northwest winds that blew all summer and the wild storms of winter. No one had ever gone into that country by land, and, of course, you can see why, can't you?”

Granddaddy was pointing to the great map. Even the younger children could see at once what he meant. For Mexico, they knew, was south of California, and there was all that desert country marked in red and brown across the southern end of their map.

“In all that vast stretch of desert, there was almost no water. There was no food for men or grass for animals, no roads or trails, no towns or any people to give a traveler help. Even the Indians who lived around this desert land were

fiercer and more unfriendly than the Indians of New Spain had been. So, although the Spanish people had been exploring and settling Mexico now for more than two hundred years, they had never crossed that stretch of desert into our beautiful land. They knew very little about our California, even on its sea coast.

“Nor had anyone else explored it. The English people who had settled our eastern coast were separated from California by thousands of miles of forest, mountains, and deserts. One English ship did sail around South America and up the coast of California. This ship stopped in a little bay north of our great Bay of San Francisco. The men who sailed her stayed for awhile to repair their vessel. But they did not explore, and as soon as they could they went on with their voyage. No other English ship, or ship of any nation, except the Spanish, visited our coast through all those years.

“Those few Spanish ships that did sail up our California coast took home to Mexico stories of a pleasant land, with forests on the mountains and rich valleys, watered with many streams, and safe harbors for ships. They told of a land filled with wild animals of every sort, great and small. Most important of all, they told of a land filled with people, a wild and naked, savage people, but human souls none the less.

“Now the king of Spain and his rulers in Mexico listened to the stories of good harbors and rich lands, and they thought, ‘We ought to go up there and settle that country. If we don’t, some other nation will send ships and men and they will settle there and take all that great, rich land away from us.’

“Years passed, however, and it always seemed just too hard to send men enough and good enough and animals enough to make a settlement. It seemed too hard to send them either across the desert or in small ships all the way up the stormy coast.

“But at last there came to Mexico from Spain a man whose heart was so brave that no dangers of desert or sea were great enough to frighten him away from the dream which filled his whole soul. What was this dream?

“He, too, had heard the stories of the pleasant California land, and his heart was on fire to go there. He was not thinking about holding the land for Spain. He wanted to save all those thousands and thousands of wild people who filled the great country north of Mexico and the deserts.”

The children looked puzzled. “Save them?” said John. “What do you mean, Granddaddy? Save them from what? Those Indians we learned about seemed to be getting on pretty well, even if their life was rather hard and dull.”

“True enough, John,” answered Granddaddy. “But this man, with the heart of a lion, this Junipero Serra, was a priest of the Christian church. He believed with all his brave heart and soul that no human being could be really happy if he did not know about the Christian religion. He wanted to go among those Indians to tell them about the Christian God, to teach them to love God and to obey the laws of the church.

“Serra wanted, of course, to teach them other things as well—how to farm the land so that they would have more food and better food, how to make better homes and better clothes to wear. But most of all he wanted to teach them to be good Christians. This was his great dream. It was never out of his mind, day or night. He was forever talking about it to the other priests in New Spain and to the Spanish soldiers and commanders.

“At last the Spanish ruler felt that the time had come when they really must make a settlement in California. He thought, ‘Here is a brave man whom I can send on this dangerous trip. He is so full of courage that he will keep up the hearts of the men in times of trouble. He is very wise with the Indians. He will make friends with them. They will not harm our settlers. He will teach them to farm so there will be food enough for all. Best of all, he will teach them to be Christians.’

“Then the ruler of Mexico found another brave man, Don Gaspar de Portola, a soldier. In a little settlement, the farthest north in Mexico of all their settlements, and the nearest to our California, they gathered all the mules and horses that could be spared. They brought cattle, sheep, goats, and food, and a few tools to build houses and to farm the new land. To another village on the coast the governor sent ships—the *San Antonio* and the *San Carlos*. They also were loaded with supplies for the great journey into California. Early in the spring the two little ships sailed away on their long, hard voyage up the coast.

“In May, Don Gaspar and Father Serra set out to cross the unknown desert, northward into the fair land of California. They planned to march as far as the good harbor, San Diego, and there to make the first settlement. In a straight line they had only 150 miles to go. But in that rough and pathless desert they wandered for seven weeks and traveled four hundred miles. They lost much time trying to find water and grass for their animals as they went.

“It was a terrible journey. Sometimes men and beasts had to go three or four days without a drink of water. They hunted for clams on the beach and for birds and rabbits in the hills, but even with the best they could do there was not enough to eat.

Some died of weariness and hunger. Many of the friendly Indians turned and went back to Mexico. They lost hope that they could ever pass through the desert alive.

“Father Serra did not lose hope. He marched bravely along, cheering the men. He was not a young man, and he was lame from a sore, burning wound in his leg, but he was happy to be on his way at last to his great work for the Indians. No pain or thirst or hunger or weariness could break his courage or his cheer.

“At last the bare, dry country began to look more friendly. Small oak trees were seen; then sycamores; now there were streams of running water in some of the canyons, and good grass for the tired beasts. Then cottonwoods and willows, with grapevines twining along the stream beds, and at last roses, fresh and sweet in the spring sunshine. How beautiful they looked to Father Serra!

“More beautiful still was the sight of the broad, blue bay of San Diego that met their eyes one day from their hillside trail. Their long journey was over, for on the quiet waters of the bay floated the two little ships, and on the shore were the tents of their comrades.

“How happy they were to meet again! But sad, too, for many had died on the weary voyage up the coast. Some had died and many had turned

back on the weary march across the desert. It cost a great price in brave lives to make this first settlement in our California home.

“Home it was, truly, for Father Serra, for here he lived and worked all the rest of his life. Before he died, he had the happiness of seeing his dreams come true. Thousands of the wild Indians came to live in his missions, where they learned to work and to be Christians.”

“What are missions, Granddaddy?” asked Barbara.

“When you ask that question, Barbara, you show that you are a true little daughter of our Great Valley,” answered Granddaddy. “If you had lived anywhere in this coast country, you would have seen the old missions and you would know their stories. They were settlements—new homes in a new, wild country. They were all started, not for the wealth they would bring to the Spaniards, but for the sake of the Indians, whom the good priests wanted to teach and to help. So a mission was something like a great school. First of all, they built a church, then houses for the priests and for a few soldiers, and then homes for the Indians who came to learn and to work and to live at the missions. The missions soon grew to be like small, happy villages.

“Father Serra himself started nine of these set-

tlements. Other priests who came with him or who came later carried on his work. At last there were twenty-one missions. San Diego, of course, was the first. Then, as Father Serra and the Spaniards explored farther north, they started new missions wherever they found places that were especially good for farms and homes. More priests and soldiers and other Spanish people came from New Spain, now that they knew the way through the desert or up the coast. In less than thirty years, there were missions all the way from San Diego to San Francisco."

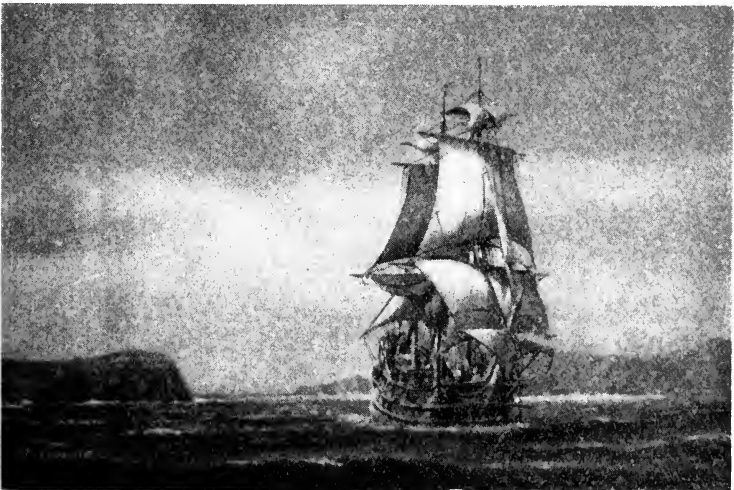
"But, Granddaddy," interrupted Barbara, "why did you say that I didn't know about missions because I lived in the valley? Why didn't they build missions in our valley? Just look what a good place it is for farms and towns, and we know there were plenty of Indians here who needed to be taught. Why didn't the good priests come to help our Indians, too?"

"Yes, tell us, why didn't they?" asked the other children. Without waiting for Granddaddy, they began to move over toward the big map. By this time they had learned that almost always their questions about California were answered if they took a good look at the hills and valleys that they had laid out on the floor.

"You see," said Granddaddy, "Those early set-

tlers were most of all interested in good harbors. It is true the trails through the desert were soon well marked and they had learned the best and shortest ways between California and New Spain. Still, at best, it was a very hard trip, and they depended mostly on ships to bring men and supplies and news from the home country in New Spain. Besides, they were always afraid that some other country would come with men and ships and take the good harbors away from Spain.

“At San Diego, Santa Barbara, Monterey, and San Francisco there were four great harbors. At these harbors they needed missions and forts, or



—Courtesy “Pictorial History of California.”

The “San Carlos” entering the Golden Gate. The first ship that ever sailed into San Francisco Bay.

presidios, as the Spanish called them. Of course towns, too, grew up in these good places. You must remember that it was a long six hundred miles from San Diego to San Francisco. There were no roads except a trail for horses, and no place to stop on the way for rest and food.

“People traveling in a rough country on horseback do well if they go thirty miles in a day. So one thing that Father Serra and his helpers thought about when they planned a new mission was this business of traveling. They tried to choose places that were about one day’s good journey apart. So you see, it kept them busy for many years just to settle this long strip of coast country and to make it a safe and comfortable place for them to live and to travel.”

“All that time, didn’t anyone ever take a peek over the mountains or find out how beautiful our valley was?” asked David.

“Yes,” laughed Granddaddy. “Several people did just that—they came and took a peek at the valley and went away again. Now, we shall say goodby, for awhile, to good Father Serra and his missions. Tomorrow I’ll tell you the stories of those first scouts that came to spy out our Great Valley country.”

As the children went out of the granary, Barbara said, rather discontentedly, to Betty, “I thought

Granddaddy promised that all these stories were going to be about water. That was a good story today, but I didn't hear a word about my old friend, water."

"Oh, I don't know about that," answered Betty. "All the first part of the story was about the desert and how hard it was to get here. A desert is a place where there isn't enough water, isn't it? So it was really your friend, water, that made all that trouble."

Barbara laughed at Betty's answer. "And I suppose you would say that the second part of the story, about the missions that were near the harbors, or on the road between the harbors, was a story about water, too. You couldn't have a harbor unless there was water in it."

Granddaddy had heard what Barbara and Betty were saying, and now he pulled Barbara's curls as he passed, and said, "Well, Ducky, if you weren't satisfied with the story today, you surely will be tomorrow! We'll have water enough to drown us all—more water than land, in fact!"

WORK AND STUDY PLANS

Things You Can Do Alone

Copy these sentences and fill in the words omitted:

The first Spanish padre in California was.....

The first Spanish commander in California was.....

The desert was hard to travel across because there was no
, no, and no.....
 The first mission was started at.....
 There were.....missions along the coast from
 Bay to..... Bay.
 They were about.....miles apart.

Things You May Do Together

Make a book of pictures, drawn or cut out, of all the kinds of food we eat in our homes.

Make a big picture of the San Carlos.

Paste or draw around the ship pictures of the foods the Spanish people took for a long voyage.

When you have finished this picture, see if it helps you to answer this question: Why did so many of the sailors die on the trip to California?

Important Facts You May Need

Columbus discovered America in 1492. Soon afterwards Spanish people settled in Mexico, or New Spain.

Father Junipero Serra came to New Spain in 1749. He worked for the Indians in Mexico for twenty years.

Then the ruler of Mexico sent him to California.

He started the first mission at San Diego in 1769.

Serra started nine missions.

There were twenty-one missions in California.

Nineteen missions were on the Camino Real, from San Diego to San Francisco.

Two missions were north of San Francisco Bay.

There were four presidios—at San Diego, Santa Barbara, Monterey, and San Francisco.

San Francisco Presidio was started by Anza in 1776.

Anza had found a new trail across the desert from Mexico to California.

He brought 240 people and many horses, cattle, sheep, and

goats across this desert safely. These people settled in San Francisco.

Sir Francis Drake commanded the English ship that came to California before the Spanish settlements were started. The bay where he landed is still called Drake's Bay. It is a little way north of San Francisco Bay.

Books You May Want to Read

"California History," Wagner and Keppel. Chapter VIII.

"Pacific History Stories," Harr Wagner. Chapter VI.

"The Spanish in the Southwest," Winterburn. Chapters X, XI, XII, XIII, XIV.

"California the Golden," Hunt. Chapter IX.

"Boys' and Girls' California," Salisbury. Pages 4 to 9.

"Seeing California," Paden. Pages 52 to 57.

"In Old California," Fox. Pages 13 to 20.

CHAPTER IX.

THE FIRST WHITE MEN IN THE VALLEY.

Next day, as the children strolled down to the granary, Jim made them laugh as he went through the door and toward the big map, crouching and creeping along with his hand above his eyes. "I'm the first explorer that ever looked into our valley," he cried. "But I don't know what language I speak or what kind of clothes I'm wearing, or where I came from! Tell us, who am I, Granddaddy?"

"The fact is, there are two of you," laughed Granddaddy, and David jumped to Jim's side and joined him peering across the little mountains of their adobe map. "You are Spaniards. Right now, you are using the beautiful Spanish language, as you stand on a hilltop looking down for the first time on the plain where the great rivers meet. You are Father Crespi, a friend of good Father Serra, and Lieutenant Pedro Fages, a stout soldier. Father Crespi is dressed in the dark robes of the padres. Fages wore a soldier's armor.

"You have marched up from the presidio at Monterey. You have come along the east side of the bay. From there you saw the Golden Gate and the islands of the bay. Then you went along the shore

around to the valley where Concord stands today. From there you climbed the eastern slope of Mt. Diablo, and from a high place on a ridge you see the great plain where our two rivers come down to meet each other and to flow into the bay. You see the many branches of the rivers, and you can see far into the San Joaquin Valley. Across it you see dimly the distant Sierra Nevada, high and snowy.

Those explorers of long ago knew that they had discovered a mighty river and they guessed it must come from a great valley. They did not know that they were looking at the meeting place of two great rivers.

“On this trip they could do no more exploring. They had set out on this journey planning to march around the great bay to its northern side. Now they had found out that no one could do this without boats to cross the straits or the branches of the great river. So they turned and went back to the mission at Monterey, and Father Crespi told of the immense valley they had seen.

“These were the first white men to set eyes on our Great Valley. This was about two years after Serra and Portola had marched up to California. Fifty years passed before the story of our valley really begins. During these years, again and again, little bands of Spaniards came through the mountain passes or sailed up the great rivers. They

went farther and farther into the valley, and they learned a great deal about the wide, level country that lies between the Coast Ranges and the Sierras. But they never stayed to make settlements or to build missions."

"Why, Granddaddy?" asked Barbara.

"And why did they keep coming into the valley?" asked David.

"Because they kept hoping and hoping that they could start missions, like the ones on the coast. Father Serra was troubled in his heart because of



—Courtesy "Pictorial History of California."
Anza, leading his men into California. Anza was the second Spanish explorer to see our Great Valley.

the thousands of Indians across the mountains who never would have a chance to become Christians. Even after Serra had died, others of the good padres hoped to go on with his plans. They kept sending exploring parties to find a good place for the first valley mission."

"Well, what did they say when they came back?" asked Barbara again. "Surely, they must have said it was the finest place in the world for towns and farms."

"That's just what they didn't say, Barbara. Can you believe it? They said, for one thing, that there was too much water everywhere, and they called it the Swamp Land, or Los Tulares, in Spanish. They said, 'The land is all covered with water every year and the floods would destroy crops if we planted them. Where the land is high, and the flood waters do not come, it is very dry—too dry to raise crops.'"

The children looked at each other in surprise. "But that isn't true, Granddaddy!" cried Jim. "Just think of the millions of splendid farms we saw on our trip from the mountains down to the bay!"

"But look, Jim," said John, "look at all this swampy land that I've painted on the map, the way Granddaddy said it was in the old days. You just couldn't farm country like that, sure enough."

Jim was certainly puzzled, and Granddaddy hurried on to explain the puzzle. "You know, Jim, all this was a hundred years ago, and our story is not only a story of our land as Nature made it, but of our people, too. Before we have finished, you will understand how the valley that those old explorers found so poor a place for settlements is the same rich valley you know today. You will be proud of this story. Now, let's go back to the mission fathers and their troubles.

"As they went farther into the valley, they at last explored the eastern side, where the land is higher, near the foothills, and where the Sierra rivers come down from the mountains. Here indeed they said was beautiful country, good soil, water to irrigate it, and safety from floods. But it was far, far away from the missions and forts and towns of the coast. There were no roads. In flood times you could not cross the valley at all, even in boats, because of the swamps. Besides, the country was full of Indians, wild Indians that were often unfriendly and dangerous. The coast settlements were growing slowly. There never seemed to be enough soldiers and men and fathers to spare to go into that far land to start a new mission, even after they found good places in the lower valleys of the Merced and Kings rivers."

"Why were the Indians in the valley so un-

friendly, Granddaddy?" asked David. "The Indians didn't make any trouble for the missions on the coast, did they?"

"No, hardly any trouble," replied Granddaddy, "but even then a few soldiers always stayed at each mission. Even a few of them, with their great, thundering guns, frightened the Indians so much that they seldom tried to do any mischief. Soon almost all the tribes along the coast were used to the missions and liked them.

"The fathers never made the Indians come to the missions unless they wanted to come. But once there, they had to stay and work and do as the fathers taught them to do. If any mission Indian disobeyed the fathers, he was punished. So, once in awhile, mission Indians ran away. They went clear across the coast mountains into the valley, where they knew it would be hard to find them. They hid with the wild tribes.

"Sometimes they stole guns and took them along and taught the wild Indians to use them. So, when the soldiers came to look for them and to take them back, often the runaways and their wild friends fought the soldiers, and since they, too, had guns, it was not easy to frighten them.

"Worse than this, the runaways taught the wild valley Indians to creep down to the mission settlements in the night and to steal their cattle or horses.

You remember how hard it was for Indians to hunt and kill large animals with their bows and arrows, yet they did like fresh meat. They thought it was wonderful to kill a fat steer, but even better they liked a feast of fresh horse meat.

“The fathers at the mission were good stockmen, and in the rich coast pastures their herds of cattle and horses had grown to thousands of animals that roamed and fed near the missions. Usually just one man herded them. The runaway Indians would guide their wild valley friends down to the pastures in the night. They would frighten away the herder and steal the horses. Some they would catch and ride. Others they would drive at top speed across the mountains and out into the Great Valley, where they felt safe from the Spanish soldiers.

“The Spanish came to try to find and punish the Indians who stole their horses. They had many small battles with them. So you see why it was more dangerous to start new missions in the valley than it had been on the coast, for here the Indians had horses to ride, and stolen guns.

“So the long years passed. In those fifty years, the coast country from San Diego to San Francisco grew civilized and rich in farms and cattle. But our valley lay unchanged, as wild, as lonely, as if no white man had ever seen it.

“The thousands of valley Indians never became

Christians. They kept their own ways of life, except that some of them became very bold thieves and some of them learned to use guns and ride horses and to eat fresh horse meat and beef instead of deer or antelope.

“But all this time there was a little animal in our streams that was going to make a strange story in the history of our California home. This was the beaver. These busy little creatures, with their beautiful fur coats, were everywhere up and down the Great Valley, in all the streams, clear up into the mountains and all the way down the main rivers.

“Not only in California, but almost everywhere in America, these little animals were found wherever there were streams. Their fur was soft and rich. All over the world, men and women were eager to have it and to make it into warm, beautiful coats and trimmings, and caps.

“When European people first came to the eastern part of America, they bought the beaver skins from Indians. Soon the white men themselves learned to catch the little animals in traps. Every year these men, who were called trappers, went out from the settlements on the eastern coast, out into the wilderness alone. They worked up and down the streams, setting their traps, drying the skins and packing them in bundles to take back to the settlements.

“It was a hard, lonely life and did not make the trappers rich, for the traders paid them rather poorly for the precious skins. Still, some brave men, who loved the wild life of mountains and forests, found this the work they liked best. The trappers became the great explorers, although, of course, they did not set out on their trips just to discover or explore new lands. They only wanted to get away from settlements, away to new forests, new streams, where there were plenty of beavers to trap.

“As men moved farther and farther west, starting farms and new towns, the trappers had to go always ahead of them. For of course the wild animals disappeared wherever farms and towns changed the wilderness into settled country.

“At last the American trappers came to the Rocky Mountains, and then passed beyond them into the great dry plains. In this part of America there were few wild animals, and soon the lonely trappers had reached the eastern side of the Sierra Nevada Mountains. That great wall had hidden our California home away from all the world through the thousands of years.

“These men were afraid of nothing. They were strong. They could stand cold and hunger. They were wise in finding a way through the tangle of rough mountains. They could live on the meat of

wild animals that they hunted or trapped. They traveled alone or in small companies, so they were able to do what no one had done before. They found trails through the Sierra Nevada Mountains into our Great Valley.

“Just about fifty years after Father Crespi and brave Fages had their first look into the dim, wide



—Courtesy “Pictorial History of California.”
Trappers.

plain of the San Joaquin, the first American from our own United States came down the passes of those white mountains that Father Crespi had seen so far away.

"Oh, Jim, if you and David were to dress up to look like those fur trappers, what fun you'd have! They were white men, but they liked to dress as if they were Indians. A trapper wore his hair long, braided with thongs of rawhide, a long leather shirt, leather leggings, fringed and trimmed with hawks' bills or claws, handsome beaded moccasins, a gay Indian blanket over his shoulders, and a red sash, which held a knife and pistols! He decorated his gun with paint and designs of brass tacks driven into the stock. If he was on horseback, his pony was as gay as he was, with feathers woven into his mane and ornaments on saddle and bridle."

"Oh," said John, his eyes ^{trapper} passed ^{ing,} "can't we dress up like trappers, Granddaddy, this part? Have you any pictures of those chaps? I like them! I wish I'd lived then. I'd like to be a trapper!"

"Yes, I have," answered Granddaddy, and the children, even the girls, admired the pictures he found for them of those lonely men of long ago.

"When these first trappers worked through the mountains into our Great Valley, it seemed to them like a treasure house. It was full of wild animals, especially of the little creatures who wore such pre-

cious coats—the beavers. They made winter camps here and there along the streams that came down from the Sierras. They set their traps and caught the poor beavers by the thousands and skinned them. Then, when spring came, they bundled up the furs and packed them on horses for the long trip back to the settlements.

“At these settlements all sorts of people gathered, and when the trappers came in from the wilderness there was a great swapping of stories of adventures in new and unknown lands. Trappers usually did not say much about the good hunting grounds that they found. They didn’t want people to follow their trails. As soon as people moved into a new country, the animals began to disappear and the trappers lost their harvest of furs. But the beautiful lands of California, the richness of the Great Valley, the lovely warm climate, these things were so wonderful that even the close-mouthed trappers could not help talking about them.

“One man that listened to these stories was Doctor John Marsh, an American. He was so interested in the country the trappers had explored that he asked to go along with a trapping expedition. He wasn’t a mountain man. He was a doctor and not very strong, but somehow he stood the long, hard trip. He reached the land of which he had heard such wonderful stories. When the trappers

returned to the settlements, he stayed in California. He made friends with the Spanish people. They were glad to have him in their country because he was a good doctor. The governor of California gave him land for a ranch of his own.

“His ranch was near Mt. Diablo, where our valley opens out to the bay. It was the first home built by a white man in this great region of the two rivers. And it was the home of an American, a citizen of our own land, speaking our own English language.

“Not long after Doctor Marsh came to make a home in our valley, another man came sailing up the Sacramento River with three boats well loaded with tools and supplies and men to work for him. Who was he? Where was he going?

“It was Captain John Sutter, coming to make a home for himself in our Great Valley. He was not, like Doctor Marsh, an American. He came, first of all, from Switzerland, where he had won a name as a brave soldier. But he had lived some time in our United States, first in New York City, where he became an American citizen. Then he moved west, and farther west, as a trader, until he came to Santa Fe, and then he, too, heard the trappers' stories of the wonderful Great Valley of California. He made up his mind to go there, not for beaver skins, but to make a home.

“The next company of trappers who started on the long trail to the hunting grounds found this sturdy Swiss soldier marching along with them. He did not get to California directly; it was nearly a year before he reached Monterey, which was the capital of Spanish California. There he made friends with the Governor and asked him if he might settle in the Great Valley. Sutter had money enough to buy the things people need to make a settlement in a wild country. He had gathered a band of good men who would work for him, and he was, as we have said, an excellent soldier.

“The Governor thought, ‘It will be a good thing for us to have a strong settlement out there in the Tulares. This man will know how to farm the land. He will make roads. He will teach the Indians to work and will punish the wild, robbing tribes that make us so much trouble. I had better give him whatever he wants.’ So he did. He gave him a farm so large that Sutter himself never knew just where his land stopped. It was eleven miles each way!”

“No man could farm that much land,” said Jim. “Where was it, Granddaddy?”

“Neither the Governor nor Sutter himself knew just where it was, except that it was to be somewhere on the Sacramento River. Sutter got three boats in San Francisco and loaded his men and supplies. Off they started, across San Francisco Bay

and up the many winding channels of the rivers, on and on, through the quiet summer days.

“At one point on the river, five hundred Indians gathered and tried to stop him. He talked to them through an Indian who knew their language and Spanish, too. He told them he wanted to be friends with the Indians. He said he did not come to make war or to punish them. So they let him pass.

“On and on he went. At last the men with him said they would not go farther. They were afraid to go so far away from the settlements. So they decided to stop at a place that seemed splendid for a settlement, where a big river joined the Sacramento. This river was called Rio de los Americanos. It was named that because the American fur trappers had their winter camp near its banks.”

David was sitting up very straight now, looking rather excited, his eyes going from Granddaddy to the big map. “But Granddaddy, that’s the American River, and where it goes into the Sacramento River is where our city, Sacramento, is!”

“Right, David. We were hearing the story of our own city in its beginning. Sutter and his men unloaded the boats and went to work building houses for themselves. Sutter went back to some of the ranches near the coast and bought horses and cattle. He had grain and seeds. With this start, and steady, hard work, rich soil, and California

sunshine, Sutter soon had a comfortable settlement. It was well provided with food and all the things that people need for comfort and safety.

“Sutter kept his word to the Indians and did all he could to make friends with them. Once or twice he did have to fight, but he was such a good soldier and was so well supplied with guns, and even with small cannon, that the Indians soon decided it was better to stay friends with him.

“Many came to work for him. He did not teach the Indians religion, as the mission fathers did, but he taught them all kinds of useful work, and the great ranch was like a busy and happy village. Sutter taught the Indians to make adobe bricks. They built good, stout houses to live in and to store their



Sutter's Fort in the old days.

crops in. All around the houses they built a strong, high wall, with towers at the corners where the cannon were placed. They called it 'Sutter's Fort.'

"Sutter, then, was the first white man to make a settlement out in our valley, and, although he was Swiss by birth, and although he became by law a citizen of Spanish California, he spoke the English language. He was always a warm friend to the many Americans who soon began to come over the Sierra trails into our California home."

WORK AND STUDY PLANS

Things You Can Do Alone

Find out all you can about beavers.

Draw a picture of a beaver colony.

Dress a doll in the costume of a trapper.

Things You May Do Together

Build a beaver colony on the San Joaquin River on your big map.

Ask the teacher to read you the story of Jedediah Smith.

Mark with a pencil line on your map his trip into California and out again.

Build Sutter's Fort and Marsh's ranch on your big map.

Important Facts You May Need

The first white men who saw the Great Valley and the place where the valley rivers meet were Father Crespi and Pedro Fages.

They saw the valley from Mt. Diablo, near the place where the rivers meet. This was in 1772.

A famous Spanish-Californian explorer was Gabriel Moraga, a soldier. He made many trips into the Great Valley. The first one was in 1806. He gave Spanish names to many rivers and places in the Great Valley.

Jedediah Smith was the first American trapper to come through the Sierras into the Great Valley. He came in 1826.

Another famous trapper and explorer was Kit Carson. He trapped in the Great Valley in 1829.

Doctor Marsh settled in the valley in 1836.

Captain Sutter started his settlement in 1839.

John C. Frémont explored the Great Valley in 1844. Frémont was not a trapper. He was a scientist and an officer of the American army. He was sent by the American government to find out the exact truth about the far western lands.

Books You May Want to Read

“Boys’ and Girls’ California,” Salisbury. Chapter XII.

“Stories of Western Pioneers,” Bashford. Chapters II, IV, and V.

“California History,” Wagner and Keppel. Chapters XVI and XVII.

“California the Golden,” Hunt. Chapter XVII.

“New Stories,” Child’s Own Way Series. Pages 149 to 185.

“Our Neighbors Near and Far,” Thompson. Pages 165 to 175.

“Spanish in the Southwest,” Winterburn. Pages 197 and 198.

CHAPTER X

THE OVERLAND IMMIGRANTS

“What are we now, Granddaddy?” cried the children as they gathered next day around their map. “Are we Indians? Or trappers? Or Spanish soldiers?”

“None of them!” answered Granddaddy. “To-day you can be just what you are—American children. Still, they will be different children from you youngsters.”

“How different, Granddaddy?”

“They will be rather sober children, very plainly dressed. The boys will be barefooted. The girls will wear sunbonnets. They will be used to hard work. They are brave children, because their lives are full of danger.”

“Oh, tell us about them, Granddaddy!”

Granddaddy settled himself comfortably in a chair at the side of the map. “Here we are now, in our Great Valley, which is just waking up from its long, long sleep. It is still full of wild Indians. It is still a wide lake in the spring. In the summer it still has thousands of acres of swamp and thousands of acres almost as dry and burned up as a desert. The trappers are still at work through the winter months.

“Doctor Marsh and Captain Sutter are the only farmers in all this region, and they are having plenty of trouble in managing their vast farms. But the long valley sleep is broken. The trappers’ stories are passing from town to town back in the American settlements. Doctor Marsh is writing letters to his friends at home. He sends them back by ships that come to San Francisco Bay. We shall learn about these ships in just a moment. Doctor Marsh’s letters tell of the rich farm lands along the lower valleys of the Sierra rivers. These letters are printed in some of the newspapers, and all over the western settlements American farmers read of the California wonderland. They are eager to leave their farms in the settled country and to start off to find new homes in that far-off valley of the two great rivers. They hold meetings. They make plans. Dozens of them agree to meet the next spring at the farthest western settlement and to start from there on the long journey. Spring comes, and there they are, ready to set out. Their wives are with them, and their children.

“All the things they would need to make homes in a wild land were loaded into big wagons, covered with round canvas tops. In each wagon was packed the food needed for the long journey. Some of the heavy wagons were pulled by oxen; some had mules or horses. Where were they going? They did not

know. California was somewhere to the west, and the road lay over high mountains, across great rivers, through deserts, and along the trails of warlike Indian tribes. That was all they knew.

“Do you not think they were brave men to start on that long trip through unknown lands, with danger on every side? The women who went with them could not fight. They were not so strong as the men. Many of them carried little babies in their arms. Do you not think they were even braver than the men? The children of these fathers and mothers had to take their share of hardships and of danger. They, too, had to be brave, braver than you children are, because you have had lives that have always been safe and comfortable. Yet they were children very much like you in other ways.

“The very first company that started out was lucky enough to have the help of an old fur trapper who knew the trails and who guided them more than half the way. On and on they went, day after day, very slowly. The men and most of the older children walked beside the plodding oxen teams. No road lay ahead of them. The heavy wagons bumped over rough ground and stones. They waded through streams and made rafts to float the wagons over big rivers.

“They came to the buffalo country and saw the level country for miles, black with the vast herds.

They heard the thunder of their hoofs as they rushed by the wagon trains and shook the earth. They trembled with terror lest the herds might trample them in the dark nights.

“They met Indians, not such peaceful fellows as we have known in California, but fierce and warlike tribes, on horses, in war paint, shouting blood-curdling cries. The Indians did not harm this first band of travelers, although they were always afraid of them and always worried lest they steal the horses and cattle during the night.

“The first part of the trip, then, was hard but not so dreadful as the latter part. For the trapper who was guiding them was not going to California. He was going to Oregon and the Columbia River, many



—Courtesy “Pictorial History of California.”

An immigrant train crossing the plains east of the Sierra Mountains.

miles north of our great California valley. At last they came to a place where the trail went north to Oregon, and if they wanted to reach California they must start off alone without a guide. No one could tell them where to go. They were told that they should go westward, and that a dreadful desert lay before them, and after the desert was a range of mountains. But no one knew the trails through that desert or the mountains.

“So part of the men, those with wives and little children, decided that it would be better to go on with the guide to the Columbia River. They hoped that from there they could find a trail down to the Great Valley. Only one woman, Mrs. Kelsey, and her little girl, named America, were brave enough to go on with the small band who left the guide and started out alone across the desert.

“It was a dreadful trip. It was harder even than that first desert trail across that other desert into California, the trail that Father Serra made from Mexico to California. When you read the stories of those two first desert journeys, you understand how the desert had guarded our California home through so many hundreds of years, so that no one had come here to disturb our easy-going Indians. This band of American men, one of them with his wife and little girl, had even a harder desert to cross than Father Serra.

“They were tired, sad, and very thin from hunger and thirst, when at last they struggled through the desert and reached a stream flowing down from the mighty Sierras. They were glad to have water and glad to have grass for their weary oxen, horses, and mules.

“But, oh, how rough and high and frightening those immense mountains ahead of them looked! They knew they must hurry on. It was September. Deep snow would soon fill all the passes of the mountains. They would die of cold and starvation, if they did not hurry. They killed the poor thin oxen and dried the meat. What was left of their things they packed on the tired horses and mules. The wagons they had left behind, back in the desert country.

“Up they went, following streams that came tumbling down the steep canyons. One joyous day they came to a tiny creek and were all excited to find that its waters were flowing westward. They had reached the top of the Sierra Nevada! Starving and tired as they were, they started down the mountains, through the steep tangle of canyons and ridges. They were often lost from each other, but they went on, down and down, until one wonderful day they came to the level, open valley of the Stanislaus River. They found fresh green grass, vines loaded with ripe sweet grapes, and a band of fat

antelope! It didn't take long to kill two of them, and what a feast they had over the fire that evening!

"Soon they were crossing the San Joaquin Valley. As it was late in the summer, the river was low and they found a place to ford it. They met an Indian who could talk to them. 'A white man lives near,' he said.

"One more day's march, and they came to the ranch of Doctor Marsh, the man whose letters had done so much to start them off on this long, long journey.

"Six months they had been on the way. Think how thin and brown and shabby little America Kelsey must have been, for her small feet had walked a great part of those two thousand miles that they had traveled! I suppose her shoes had worn out early in the journey. Perhaps they had been able to get moccasins from the Indians whom they met. Perhaps her mother had tried to make little shoes for her from the skins of the oxen that died or were killed. Perhaps she had just tramped along bare-footed, her little soles getting harder and tougher day by day. She was a brave little girl!

"This first band of homeseekers is sometimes called the 'Bidwell party,' because one of the leaders was a young man named John Bidwell. He kept a diary, or day-by-day story, of this trip, so that we know a good deal about what happened on the way.

Bidwell lived all the rest of his life in California and became an important citizen in this new land.

“The first Americans who made the trip from the United States to California were called ‘immigrants.’ This word means people who come into a new country to make homes. They didn’t lose any time in getting started. Some went to Captain Sutter’s settlement. Some went to Monterey and got land from the California government. The Kelseys tried to settle on the San Joaquin River.

“Now, the news got back to the settlements in the United States that the first immigrant train had reached California. Other bands of immigrants gathered and followed their trail westward. These later bands did not have quite such a hard time as the first immigrants. They knew something now about the trail.

“Different parties tried different trails through the Sierra Mountains and at last found that the best way to cross was to follow the Truckee River on the east side, then up the steep eastern slopes to the top, to the place we still call today, ‘Emigrant Gap.’ Then they went down steep cliffs to Bear Creek and on to the Sacramento Valley. This trail led them to Sutter’s Fort. How glad they were to come out of the mountains into that friendly settlement! They were always welcomed and fed and helped in all the ways that they needed.

“The immigrant trains had to leave the American settlements in the spring, so that there would be grass along the way for their animals. The trip at best took five or six months, so it was always autumn when they reached the Sierras. They had to hurry, hurry, lest the snow catch them in that wild mountain country. Sometimes it did, and they had a hard time. Such parties were the happiest of all when they got through the snow into the green valley and the safe fort and met the friendly welcome of Captain Sutter.

“Some of the later trains had a sadder time than the first one, although they knew the way better. Some had to fight the Indians, and men were killed and buried by the trail. Sometimes a very sudden sickness, called cholera, broke out in the trains, and many died—men, women, and little children—and they, too, were buried by the trail.

“Still they came, on and on, these Americans who had heard of the wonderful lands of California and had left their farms and come to make new homes in our Great Valley.

“A few even came in sailing ships from American cities on the far eastern coast. They sailed all the way down the coast of South America and around Cape Horn and north again to San Francisco Bay.

“Here, on the shore of the great bay, had grown

up a little town called Yerba Buena. It was built beside a sheltered cove, where the ships came and anchored. There was a wharf and some storehouses and a few other buildings. Most of the people in this tiny trading village were American or English.”

“Why, Granddaddy? Why did ships come there—what did they want in California?” asked Philip.

“The first American and English ships that reached California came to get furs. In the early days there were many otters in the coast bays and streams, and the skins were as valuable as beaver skins. The sailors on the ships hunted otters or bought the otter skins from Indians.

“Later on, whaling ships from the American coast came to the Pacific Ocean to hunt whales. They sailed out from Boston, to be gone from home three years. They hunted for whales all over the Pacific Ocean. When they caught one of these big fellows, they cut him up and boiled the fat in big kettles, to get the clear oil. Then they filled their barrels with it until they had a load, nearly a hundred barreelfuls.

“But they were not yet ready to go home. After two years out on the ocean, the ship and the men were in a sad state. The ship was battered by storms and the sails were torn. The men were tired of ship life and ship food. They longed for a rest

on land, and fresh food. They needed time to put their vessel in order before they started on the long trip home.

“What better place could there be than San Francisco Bay, with its harbor safe from storms, its hillsides covered with forests, and its springs of fresh water? Many whalers came in and anchored in the little cove and bought fresh food from the traders in Yerba Buena.

“They mended their ships. They cut firewood and filled their barrels with fresh water. Then they were ready to go home. Sometimes the trappers brought their loads of furs down from the valley to Yerba Buena and sent them back to Boston by the whaling ships.

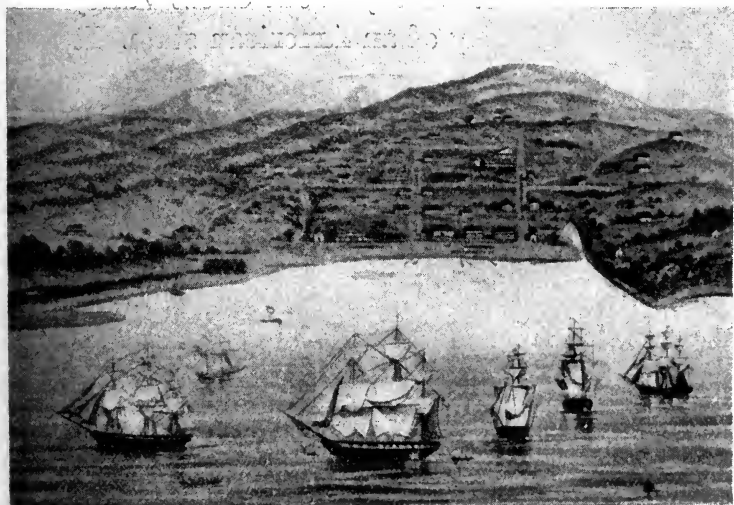
“When the ships got back to Boston and told their stories of the beautiful bay and the rich country around it, men who owned ships said, ‘Let’s go there with a ship full of the things those people need. We’ll stop at San Diego and Monterey and San Francisco and sell them the things they cannot raise themselves or get from Mexico.’

“These ships did not hunt whales. They traded their cargo of Boston goods for hides and tallow from the California cattle ranches. So they were called ‘Boston traders.’

“In those years, while the American fur trappers were slowly exploring the Great Valley of Califor-

nia, these other Americans, the whalers and the Boston traders, were visiting the California bays. In San Francisco Bay this little trading settlement of Americans grew up. When the immigrants began to come, over the mountains and around the Horn, they found friends in Yerba Buena. These friends helped them to find good valley lands and to start their farms.

“Twenty years after the first American trapper, Jedediah Smith, set foot in our valley, and ten years after Doctor Marsh, the first American farmer, settled near the gateway of the valley, there were about fifteen hundred American men, women, and children living in their new California home.



—Courtesy “Pictorial History of California.”
Boston ships and Yerba Buena.

“That very year an astonishing thing happened. California became a part of the United States. Everyone who lived in California—all the Spanish people as well as the newcomers from the East—were now citizens of our own United States!

“You see, California, up to this time, had belonged to Mexico. And in this year that we are talking about, our government had trouble with the government of Mexico. The trouble started because the two countries could not agree about the lines that should divide their lands. Finally they went to war. Some of the fighting was done here in California. The United States won the war, and won California to be part of our country forever.

“From now on the story of our Great Valley will be part of the story of an American state. It was



owned and lived in by American farmers and governed by American laws. We shall see great changes in our valley in the next two or three stories!"

WORK AND STUDY PLANS

Things You Can Do Alone

Find out all you can about whaling ships.

Write the story of a whaling vessel that leaves Boston, goes around Cape Horn, and hunts whales in the Pacific Ocean. The vessel reaches Boston again two years after it sailed away.

Choose one of the books in the list below. Read it and tell the story to the other children.

Things You May Do Together

Make an immigrant wagon and fill it with the things you will need for the trip and for the new home in California.

Trace on your map the immigrant trail over the Sierras to Sutter's Fort.

Make small oxen and wagons and people to put on the trail.

Make small whaling ships and "Boston traders" to put in San Francisco Bay.

Ask your teacher to tell you the story of the "Bear Flag Republic."

Important Facts You May Need

The first American immigrant train reached California in 1841.

Many other trains came in the next few years, especially in 1846.

In 1846 the United States went to war with Mexico.

A ship of the American navy was in Monterey Bay.

The commander, Commodore John D. Sloat, raised the American flag at the presidio of Monterey.

The war was soon over. California was now part of the United States.

Books You May Want to Read

“Martha of California,” Otis.

“Pioneer Mother,” Brooks.

“In Old California,” Fox. Pages 84 to 104.

“Boys’ and Girls’ California,” Salisbury. Pages 106 to 110, pages 98 to 101, and pages 154 to 162.

“Modern School Readers,” Book V, pages 227 to 250.

“California,” H. W. Fairbanks. Pages 21 to 27.

“California History,” Wagner and Keppel. Chapters XVII, XVIII, and XX.

“California the Golden,” Hunt. Chapters XVI and XVIII.

CHAPTER XI

THE SETTLERS IN THE GREAT VALLEY

When the children came into the granary next day, Granddaddy was already there—but what a different Granddaddy! He wore black velvet trousers, wide and flapping open at the sides, trimmed with silver braid and heavy silver buttons. He had on a white silk shirt and a short velvet jacket, gay with gold embroidery. A wide hat was on his head. It had a heavy silver cord around the crown and tassels hanging down. Around his waist was a sash of red silk. Fastened to his boots of deer skin, embroidered with gold thread, were silver spurs. On each spur was a sharp steel wheel and tiny bells that tinkled if he moved. He was playing a guitar and singing a gay little tune.

The children, listening a few minutes, began to hum it, although they could not understand the words. Soon they were dancing, too. They could not stand still. The little song and the guitar seemed coaxing them to dance.

“What is this song, Granddaddy?”

“Who are we today?”

“Where did you find the clothes?”

“It’s Spanish, I’m sure,” David was saying.

John said, “Those are the clothes mother keeps

put away carefully in a chest. She says they belonged to our great-grandfather!"

"Oh, tell us about him!" All the children were talking at once.

"Well, give me a chance," laughed Granddaddy. "I'm going to tell you about him—that's our story today.

"Of course, you know that your great grandfather was my father. When he was a very young man, he was a farmer in the settled western country of America. He, like Bidwell and the other early immigrants, was very much excited by the stories they heard of California. Although he and his father had a good farm, he decided to join one of the immigrant bands.

"Early in the spring he said goodby to his family and started out for the meeting place. The band with which he came arrived in California without serious trouble. They came, first of all, to Sutter's Fort, and then went down the river to Yerba Buena. My father liked the valley country. He wanted to have a home there, near the fort. So he went on to Monterey, where the governor of California lived, and asked for a grant of land on the Sacramento River.

"You remember the Spanish people did not think the valley lands were very good. They were willing to give my father as much as he wanted. After wait-

ing some time for papers to be made out, and other business, one day father came up the river in Captain Sutter's boat. He and the good captain crossed over to the west side of the river, and father picked out the land he wanted. The Spanish governors had said his ranch was to be a league of land—that means about four thousand acres."

"But, Granddaddy," cried Jim, "you couldn't have a ranch that big! How could you manage it?"

"The old Californians didn't think that was a big ranch. They didn't plant crops or hay. They didn't irrigate or raise alfalfa or fruit. There were no barns on the ranches, no fences, no pumps, no irrigating ditches, no ploughs, no tools, no wagons. Of course, there were no tractors or automobiles."

"Well," said Jim, "that doesn't sound like much of a ranch to me! How *did* they farm their four thousand acres? What did they have to work with, and what could they raise?"

"What do you think, Jim? Do you remember what you said, a few days ago, when I was telling you about the Great Valley in the days before the white men came? You said, 'Wasn't there any stock to feed in those hills? Think of the fat beef you could raise on feed like that!' Well, that's just what the Spanish fathers thought, and all the Spanish people who had settled in California. This was about seventy years after Father Serra had come

to San Diego. In this time the small herds that had come across the desert with Portola and Anza had grown to bands of thousands and thousands of cattle. They fed and grew fat on the hills and in the valleys of the good coast lands.

“All the way from San Diego to San Francisco were great cattle ranches. It was in fact the only business in the California of those days—raising cattle. While my father was waiting for the governor of California to give him the land he wanted, he thought it would be a good idea to visit some of the big cattle ranches, to learn how they were managed.

“There were many fine big ranches in the Santa Clara Valley, and the owners were glad when he came to visit them. They treated him with the greatest kindness. They were friendly people and loved gay parties and picnics and dancing. Wherever the young American came they made him welcome and showed him first their ranches and their cattle, and then took him to see their homes and to meet their families.

“The men liked him, for he was frank and friendly, tall and strong, a good rider and a good shot. The women liked him, too. They liked his clear blue eyes and yellow hair, so different from their own dark men. They liked his gay smile and his pleasant, courteous manner. He soon learned

to speak their Spanish language and to join their dances and songs. When he went away from one great ranch where he had been a welcome visitor for many days, he carried with him the memory of a lovely daughter of the family, whose soft dark eyes and friendly voice he could not forget.

“After father had returned to Sutter’s Fort and had chosen his ranch, Captain Sutter said, ‘First of all, you must have a band of cattle to start with. Some day I hope we can have real farms here in the valley and raise many kinds of crops. But you had better begin the way the Californians do, and raise cattle.’

“Father had brought some money with him, and Captain Sutter said, ‘Go down to the big ranches near San Francisco Bay and buy as many cattle as you can. Bring them up here in the late summer, when the rivers are low, and turn them loose on your ranch. Try to hire some good Indian vaqueros to come with you to manage your cattle.’

“Father thought this was good advice. But before he left his ranch, he asked Captain Sutter to lend him some of the Indians who worked at the Fort. They came over to father’s new ranch and helped him build a small adobe house. Then he went down the river to Yerba Buena and bought a horse and started down the Santa Clara Valley. He knew that probably he could buy good cattle at

any ranch, but, thinking of the lovely señorita whose voice he could not forget, he went first to the ranch of her father, Don Pablo. How glad they were to see the young American again!

“Business must wait—parties and picnics came first. Before my father had a chance to talk about buying cattle, what do you suppose had happened? He had lost his heart to the sweet señorita. He asked her parents if they were willing to let her marry him.

“Her father and mother were very well pleased with the young American as a husband for their daughter. What a gay wedding they had! These were my father’s wedding clothes. His own plain suit, worn since he left his far-away home, was shabby. American clothes were not to be had. So



—Courtesy “Pictorial History of California.”

The wedding party at San José Mission, where Great-Granddaddy was married to Great-Grandmother Barbara.

he went to Monterey and came back a very handsome Spanish caballero.

“The parties and dances and picnics and races lasted for several days. At last my father began to think it was time to get back to his own ranch and to start his cattle business. He asked his wife’s father if he could buy some cattle from him.

“‘But no!’ said Don Pablo. ‘You are my son now. I have already sent, some days ago, trusty vaqueros from our ranch with a band of a thousand cattle and a hundred good horses to drive them up the valley to your new ranch. They are my wedding present to you and my dear daughter. The vaqueros, too, will stay with you and work for you!’

“So off they went together, your great-granddaddy and your great-grandmother, happy and gay. They rode splendid horses, with handsome silver-trimmed bridles and saddles. They rode at a gallop. Two or three vaqueros, galloping ahead of them, drove a small band of horses, running free, without saddle or bridle.

“When a horse they rode was tired, the vaqueros whirled a lasso and caught one of the free horses. The saddle and bridle and rider were changed from the tired horse to the fresh horse. So all day long they rode swiftly. They camped in the open at night. On the third day they reached the new ranch.

“Here was a fine surprise. Don Pablo had sent

by boat up the river from Yerba Buena, furniture for his daughter's new home, and friendly old Indian women from the home ranch to work for her. Now life began in earnest, and the next five years was a busy and happy time for my mother and father.

"The ranch did well, the cattle and horses increased, and my father grew rich, as riches were counted in those simple days, although you children might think their home was bare and poor beside the house that we have today."

"But, Granddaddy, you started out to tell us how they farmed such an enormous ranch. Won't you finish that part of the story?"

"I think it was more interesting to hear about great-grandmother," said Barbara. "Go on and tell him about his old cows and farming, Granddaddy, but afterwards I want to hear more about her."

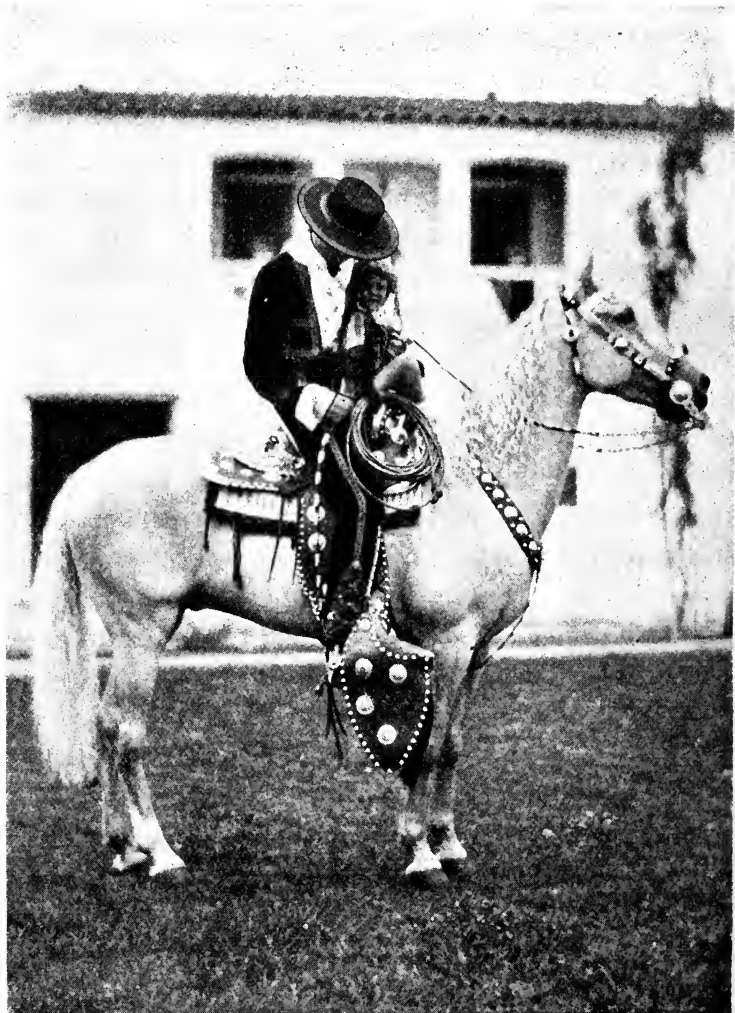
"Fair enough! I'll tell Jim just how my father went to work when he came back from his wedding journey.

"The cattle that Don Pablo had given them were already on the ranch when they reached the new home. The vaqueros herded them carefully on the new feeding grounds. Father and some Indians went down by the river and cut posts and drove them into the ground in a big circle near the ranch

house. At the top the posts were tied together with heavy thongs, or strips from the hides of cattle. This made a strong corral. The band of cattle was brought every night to the ranch house, and as many as possible were kept in this large corral. After awhile, they began to feel that this was home. Little by little they were left to go where they liked for feed, but the ranch was so immense they did not often wander beyond their owner's line.

"Now, what did they need to work with on this great ranch? Horses—first of all, many good saddle horses. There were plenty of horses, wild and tame, everywhere. They, too, like the cattle, roamed loose in the fields. They were never in a stable and never were fed hay or grain. But they were fat and strong from the good feed of the fields. Next, they needed plenty of bridles and saddles—strong, heavy saddles, beautifully made and ornamented, with a high, strong horn in the front.

"The most important tool of all was the vaquero's riata, or lasso, as we call it today. It was a long rope of braided leather, or horse hair, very soft and fine and smooth, but almost as strong as steel. The vaquero carried it in a coil tied to his saddle horn. When he wanted to catch a horse or steer, he whirled it around and flung it out with careful aim, so that the loop at the end dropped over the head of the animal. The other end was fastened to his sad-



—Courtesy Californians Inc.

Great-Granddaddy and one of the children.

dle horn. The wise horses were taught to stand and brace their legs so that when the lassoed animal tried to run away, it was held fast by the riata, the saddle horn, and the stout pony. It was wonderful how clever those old Californians were with their riatas. It seemed as though they could catch anything, at any speed—horses or cattle or wild animals.”

“Oh, I wish ranching were like that now!” cried John. “I’d like to be a vaquero and raise wild cattle better than to run a dairy here!”

“I don’t know about that,” said Jim. “It sounds exciting and lots of fun. But I still don’t see how they made a living! What did they do with all those millions of cattle? How could they sell them?”

“That was just the trouble, Jim—they couldn’t sell them! At least, not for meat, and I suppose that is what you are thinking about. They couldn’t send them alive in sailing vessels for a six months’ trip to market. They couldn’t drive them over the mountains and deserts to the settled country. Still, they did make a living. I’ll tell you how they managed. We’ll go back again to father’s ranch.

“You remember it was fall when the herd came up from Don Pablo’s place. Through the winter they roamed farther and farther in the fields of the big ranch, and sometimes a small band would stray away into another county. No one worried about

that. Finally, spring came. Word went around from ranch to ranch that on a certain day they would hold the spring rodeo. From all the ranches in that part of the county the owners and the vaqueros gathered in a little open valley.

“A commander was chosen, called Juez del Campo, or Judge of the Plains. At his orders, the cowboys started out in every direction, riding swiftly miles and miles. They went as far as the river on one side and the coast mountains on the other. Then they began to drive in all the cattle from that wide piece of country.

“Nearer and nearer the bands came, galloping, thundering, bellowing—vaqueros shouting. Thousands and thousands of cattle were gathered in the central plain. Then, little by little, the bands were



—Courtesy “Pictorial History of California.”
The rodeo.

separated, and all the cattle that belonged to each owner were driven off in separate bands by themselves."

"But how in the world did they tell the animals apart?" asked Jim.

"Every beast had on its side a mark burned into the hide so that it would show plainly as long as it lived. This was the mark, or brand, of the owner. These brands were kept in a big book of records by an officer of the government. If anyone took cattle that were marked with another man's brand, he was severely punished. So, with sharp-eyed vaqueros and whirling riatas and wise cow ponies, it was possible to separate that great mass of cattle into several bands. Each band showed the same brand on every grown cow or steer. You see, it didn't matter at all if some cattle strayed from one ranch to another, for in the spring round-up every owner would collect his own animals and drive them off to his own home place.

"But before the bands were driven off, there was a day or two of celebration. All the neighbors of the wide countryside, and their families, gathered for the rodeo. When it was over, they stayed to feast on fresh-roasted meat, to build big fires at night, and to sing and dance and tell stories after the day's work was done. This old guitar of father's went to many a rodeo celebration. It played

to the old, gay Spanish songs and the lively dances of the young caballeros and vaqueros and señoritas.

“When finally the feasting and visiting were ended, each family turned homeward. Their vaqueros drove the owner’s cattle to the home ranch. You see, springtime was the time of the young calves, and they of course had no brand, but they followed their mothers when the mothers were sorted out into the different bands. Now at the home ranch the mothers with calves were driven into the corral and the young ones were branded. Then the herd was turned loose again on the home range.

“After the long summer of good feed, when the cattle were fat and sleek, another rodeo was held. This time the owner cut out from his herd the cattle that were to be killed. This band was driven to a spot on the ranch that was near a stream and near the trees. It was called the *matanza*, or butchering field. The cattle were killed and skinned, and the hides were spread on the ground and pegged down, so they would dry straight and smooth. Some of the meat was cut into strips, dried, and saved for use on journeys. Most of it was just thrown away. The dogs of the ranch would feed their fill, and in the night coyotes and bears came to help themselves.

“Only one portion of the beef could be saved—that was the fat or tallow. This was very valuable

for cooking, for making soap, and for candles. The Indian women of the ranch gathered at the matanza field. A great iron kettle was set over a fire and the fat was gathered and boiled clear. A bag was made of a fresh hide, by sewing the edges together with strips of rawhide. Into this bag the soft, warm tallow was poured, and when it was cold it became hard and solid. The hides when dry were piled up and made into loads that one man could carry.

“Then my father got ready to take his ranch products to market. The bundles of hides and the sacks of tallow were carried to the edge of the stream and loaded onto boats or rafts. They were taken down the river to Yerba Buena. Here the Boston traders, from far away around the Horn, loaded the hides and tallow into their ships and counted them as if they were money.

“In exchange, the California ranchers got from the trading ships all the things that they needed from the far-off settled countries. So when my father came back from the trip to Yerba Buena, he brought rolls of silk for new dresses for my mother, lace for her veil, and a beautiful high comb for her hair. He brought silk stockings and satin slippers. He brought also linen and calico, dishes for the table, and other things that good housekeepers love to have. Then he bought sharp knives for his vaqueros to use in skinning the cattle. He

bought tea and coffee and sugar and rice for the ranch cupboard. He bought velvet, and gold and silver braid for his own best clothes, although for everyday work he wore trousers and jacket of soft deerskin.

“All these things he bought with his hides and tallow. Not a great deal, you may say, if you are thinking of our life and our homes today, but it was all they wanted. The home ranch gave them food aplenty, and the plain little adobe house kept them dry and warm in winter and cool in summer. So, is it not fair to say my father was wealthy, since he and my mother had everything they wanted and were happy? Don't you think it was a pretty good way to farm, after all, Jim?”

“I guess so,” answered Jim slowly, but he seemed bothered. “But, Granddaddy, how crazy to use all this splendid farm land just for grass for cattle, and then to waste all the meat from the cattle besides!”

“Wait awhile, Jim; we haven't finished the story of our Great Valley yet! But look how impatient Barbara is. What do you want to ask, Ducky?”

“You promised to tell us about great-grandmother. What did she look like—was she beautiful?”

“Yes, we children thought she was. I'll show you what she looked like. Here is a pretty good

picture of her, at least when she was very young!" and Granddaddy suddenly pulled out a little pocket mirror and held it up in front of Barbara. She was so surprised she nearly fell over.

The cousins laughed and cried out, "Did she really look like Barbs?"

"Oh, ho, Barbs is a Spanish girl!"

"Hello, Señorita Barbara!"

But Barbara didn't laugh. She looked quite serious and said, "Well, I'm proud that I look like our great-grandmother. Tell us more about her, please!"

"You ought to look like her, for you were named for her, Barbara. I hope you will grow up to be like her—happy, and kind to everyone. Some day when you are larger Aunt Jane will let you wear her fine old dresses and lace shawls. They are put away in the chest where this suit of father's was kept, and this old guitar. Then we shall have an old-time Spanish party!"

"I'll be a vaquero and lasso cattle!" cried John, who had found on one side of the granary a splendid old saddle with the riata tied to the horn. Granddaddy handed it to him, and everyone rushed outside to try, in turn, to see if they could whirl the noose and drop it over each other's heads.

"In the old days," said Granddaddy, "even very young boys could ride horseback on a saddle or bare-

back, and could use the riata to catch his own pony running loose in the field. Boys of those days would think you very stupid and clumsy if they saw you now!"

"Well, maybe they would, but none of them could drive a tractor and plow a straight furrow, but I can!" said Jim, as they strolled back to the waiting machine.

WORK AND STUDY PLANS

Things You Can Do Alone

On Great-grandfather's ranch they spoke Spanish. Here are some of the things they said to each other. See if you can learn to say them :

¿ Como está usted, Señora Castro? That is pronounced, ¿ Cō-mō ās-tā' oos-tath', sã-nyō-rã Cäs'-trō? It means, How are you, Mrs. Castro?

Muy bueno, gracias, Señor Vallejo.

Moo'-ee boo-ã'-nō, grã'thee-äs, Sã-nyōr' Vãl-yã'-hō.

Very well, thank you, Mr. Vallejo.

Adios, hasta la vista, Señorita Barbara.

Ä-dee-ōs' äs'-tä lä vees'-tä, Sã-nyō-ree'-tä Bãr'-bã-rã.

Goodby, until I see you again, Miss Barbara.

Here are some of the words they often used on the ranch :

caballo, cã-bãl'-yō, horse.

caballero, cã-bãl'-yã'-rō, horseman.

vaca, vã'-cã, cow.

vaquero, vã-kã'-rō, cowboy.

rodeo, rō-dã'-ō, round-up.

matanza, mã-tãn'-thã, butchering.

riata, ree-ã'-tä, lasso.

sombrero, som-brā'-rō, hat.
 mantilla, män-teel'-yā, scarf.
 fandango, fän-dän'-gō, dance.

Things You May Do Together

Model a herd of Spanish cattle and cowboys and put them in the Great Valley on your map.

Make some small adobe bricks and build a small adobe ranch house on your map. You can learn how to make adobe bricks and how to build with them in "Docas the Indian Boy."

Make up a play showing how the ranchers celebrated the end of the rodeo.

Important Facts You May Need

Most of the large Spanish cattle ranches in California were in the Coast Region, from San Diego to San Francisco.

Most of the cattle ranches in the Great Valley were owned by American settlers.

A few Americans were given land in the Great Valley by the Spanish governor of California, from 1840 to 1846.

After 1846 many Americans wanted land in the Great Valley. It was given to them by the United States government.

Books You May Want to Read

"Docas the Indian Boy." Snedden. Part II and Part III.

"The Spanish in the Southwest." Winterburn. Pages 188 to 196.

"California, the Golden." Hunt. Pages 122 to 131.

"California History." Wagner and Keppel. Chapter XV.

"In Old California." Fox. Pages 46 to 59.

"History of California." Bandini. Pages 109 to 122.

"Seeing California." Paden. Pages 24 to 30.

"Type Stories." Ruth Thompson. Chapters XIV and XXI.

"Home Folks." Russell Smith. Pages 64 to 66.

"Our Neighbors Near and Far," Thompson. Pages 189 to 196.

CHAPTER XII

THE DISCOVERY OF GOLD

Philip was the first of the children out in the granary next day. As the others came down the path, they heard Phil's clear voice and Granddaddy's deep bass singing a rollicking song. It sounded so jolly they started to run. Inside the room there was Phil, in high boots, much too big for him, and a red flannel shirt. He held a big, odd-shaped, rusty old pan. He was singing with Granddaddy:

“Oh, California,
That's the land for me!
I'm bound for Sacramento
With my washbowl on my knee!

“I soon shall be in 'Frisco,
And there I'll look all 'round,
And when I see the gold lumps there
I'll pick them off the ground!

“I'll scrape the mountains clean, my boys,
I'll drain the rivers dry,
A pocketful of rocks bring home,
So brothers don't you cry!

“Oh, California,
That’s the land for me!
I’m bound for Sacramento
With my washbowl on my knee!”

“Oh, I know what we’re going to be today!”
cried Jim. “Miners! Hurrah!”

“We’re miners, forty-niners, now!” cried the other children, and when Phil started the chorus again they joined in and shouted the old tune at the top of their voices.

“Granddaddy, you were a miner, weren’t you?”
asked Barbara. “Are those your old boots and pan
that Phil has?”

“Mercy, no, Ducky! I’m not so old as *that!*
Those were my father’s boots and his pan. Gold was
found first in California more than eighty years
ago. I wasn’t born then. I was the youngest in our
family, and the great gold year came just about
four years after father had started his ranch.

“One day in the spring, just after the rodeo, he
went over to Sutter’s Fort. That busy place, usu-
ally so well managed, was all upset. No one was at
work.

“‘What’s the matter?’ asked my father. ‘Where
are all the men? Why aren’t you all at work on
the ranch?’

“‘Haven’t you heard the news? Gold! Gold!

Discovered at the sawmill up the river! Chunks of it! Right on top of the ground! Pure gold, easy to get! We're off to the hills. Come along, come along! You'll be richer in a few days than you'll be in years on your ranch. Come along!

"It seems that the new American settlers had wanted lumber, so Captain Sutter sent a man named James Marshall up the American River to find a good place where there were plenty of trees to cut and where they could set up a lumber mill. Marshall found a good place. It was up on the South Fork of the American River. He built a dam so he could use water to turn a wheel and to run his sawmill machinery. After the water from the dam went past the wheel and turned it, it flowed back to the river through a ditch, called the tail race. One morning when the water was turned off, Marshall was walking along this ditch. He saw something shining on the bottom, and picked it out. It was a little piece of pure gold!

"After that he kept a sharp lookout, and other little pieces were found. Marshall went back to the Fort and told Sutter. They tried to keep it a secret. But how could you keep such a wonderful secret? Everyone at the Fort was leaving the ranch work and rushing off up to the mill. They tramped up and down the South Fork river, with pick and shovel and pan.

“Sutter begged his men to stay and attend to the crops and the animals, but they would not listen. Everything was left with no one to take care of it.

“‘Come along—come along!’ they cried, as they saddled their horses and packed up their blankets and a little food. ‘Come along!’

“Father, of course, thought of his own ranch and his wife. Still, he too was upset by the excitement at the Fort. He went home and talked it over with my mother. She said, ‘Go on to the mountains with the other men. Perhaps it is true that the rivers are full of gold. I can take care of the ranch!’ And indeed she could. She was a splendid rider and she could herd the cattle. She was just as good as father to manage the vaqueros and the Indian helpers.

“So off went my father in this red shirt and these heavy high boots over his trousers, so he could wade in the streams. He, too, carried a pick to loosen up the gravel in the stream beds, and a shovel to scoop it into his pan.”

“But what was the pan for, Granddaddy? I’ve been wondering,” asked David.

“The pan was most important of all. A miner would shovel up the gravel, fill his pan, and carry it to the river. He dipped it in the water. The dirt dissolved and was poured out. He filled the pan again with water, swinging it so the water circled

around and washed out all the loose dirt and gravel. Finally, nothing was left in the bottom except a few larger stones, washed clean—and gold! For gold is heavier than anything, and as the water washed the dirt and gravel over the edge of the bowl, the heavy gold went to the bottom, and there it was, shining and beautiful, in small lumps or grains of ‘dust’ as it was called.

“Men certainly did get rich fast. The streams all up and down the mountains were full of ‘pay dirt.’ That means loose gravel that washed out and left gold. The news traveled fast. Everyone in California left his work and rushed off into the hills. Finally, the story spread outside of California into



Washing gold, in a pan and in a cradle.

every part of the world. Then the great 'gold rush' began.

"Men came from all over the world. They hoped that when they got to California they would 'see the gold lumps there and pick them off the ground,' as the old song says. Most of the gold seekers came over the same trail that Bidwell and the other home seekers had made. Many more came by sailing ships. Both trips, as you know, were long and hard. The same old desert and mountains and ocean stood guard over the California gold. But men were so eager to get to the gold fields that they didn't stop because the trip was hard or dangerous.

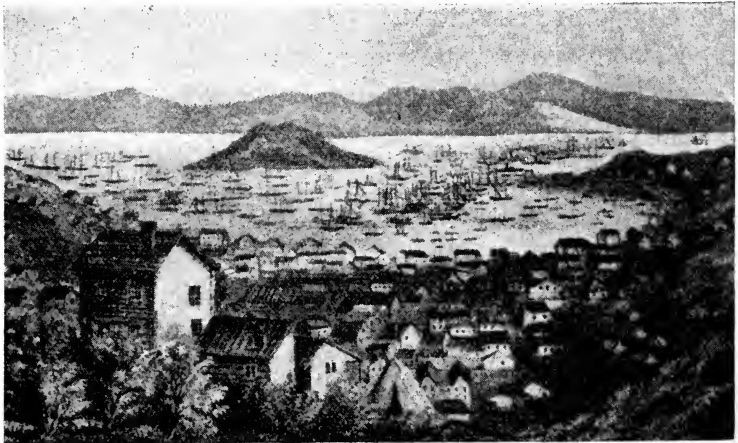
"The old sleepy California waked up to find itself full of people, mostly Americans from our Eastern states. But there were many Mexicans and men from the Western seas, from Hawaii, China, and Australia. Indeed, they came from every part of the world!

"All of a sudden, because of the gold in the mountains, three towns started and grew up so fast that men said, 'They grew up overnight!' There was, of course, no city of San Francisco at this time. But do you remember about the settlement called Yerba Buena, with its safe little cove where ships could anchor in San Francisco Bay? Now, suddenly, this cove was full, just crammed full of ships, and the little town was full of people, mostly

living in tents. They came fast, one shipload of people after another. But they left the settlement as fast as they came, setting out in boats up the river to Sacramento.

“Yes, now there was a town called Sacramento, close to Sutter’s Fort. The town grew up along the Sacramento River, and here, too, ships of all sorts were anchored, and a city of tents and shacks appeared. Here men packed their horses or mules and set out for the mines.

“Very soon the miners found out that there was gold in the streams south of the American River. They found that there was gold in the streams and canyons of all the rivers as far south as the Merced.



—Courtesy “Pictorial History of California.”

Yerba Buena Harbor after the discovery of gold. All these ships are deserted. The sailors have gone to hunt for gold!

To reach these southern gold fields, they went up the San Joaquin River.

“One of the early settlers, who had come to California a few years before the gold rush, was Captain Charles M. Weber. He had a ranch on the San Joaquin River. He had boats that went up and down the river between his ranch and Yerba Buena. The miners, setting out up the river for the southern mines, stopped at Weber’s ranch. They unloaded their boats there and packed up their mules to go into the mountains. So here, too, a tent and shack city suddenly grew up, and it was named Stockton.

“Still men came! In one year alone, forty thousand men came into Yerba Buena cove by ship. About this time they began to call it San Francisco. That was the name the old Spanish people had given to the great bay. It seemed to be the right name for this young city on the shores of the bay, and soon the old name was forgotten.

“Thousands more came by the overland trail. All up and down the Sierra Mountains were mining camps, rough little towns of tents and shacks. Farther up in the canyons and gulches were lonely camps of one or two men, or even of one man alone.

“What sort of men were all these thousands of miners? Well, they were just what you would expect. Some of them were rough and wild and cruel,

and others just and fair and kind. There was, of course, no government or laws. There were no churches, there were no homes or families. There were none of these things that make men behave well. Yet, for the most part, they did behave pretty well.

“Very quickly they would come together in a new camp and make some sort of laws so that men who stole or killed were punished. In this wild, rough country without any government at all, these thousands of men lived and helped each other and worked together pretty peaceably. But there were more bad men who robbed and killed than there are in settled lands. There were almost no women among the first bands of gold seekers. As for little children, there weren’t any at all for a long time.

“How did they work? I told you about the pan, and every miner started with a pan, working alone. It was hard work, using a pick to loosen the gravel, shoveling a little into the pan, then washing and swinging the heavy pan until their arms ached.

“Soon they thought of a better way to work. They cut a log and hollowed half of it like a cradle and nailed strips across the bottom. They took a square piece of iron and punched it with holes like a sieve. They set it up across one end of the cradle. Then four men worked together. One dug with a pick and loosened the gravel. One shoveled it onto

the sieve. One carried water and poured it over the gravel. One "rocked the cradle" steadily, to slosh the water around in the gravel. The big stones stayed on the sieve and were thrown off. The gravel and gold went through the sieve. The water washed the sand and gravel out the lower end of the cradle. The heavy gold sank to the bottom and was caught there in the strips nailed crosswise.

"At the end of the day the four partners divided equally all the clean gold they took from the cradle. This was not such hard work as washing gold in the pans, and each one got more gold than when he worked alone.

"When the easy gold was nearly all gone, the miners had to dig deeper and deeper into banks and hills. Then they thought of another plan. Many of them joined together and built a dam across some Sierra stream. The dam held the water back and it rose in the canyon and made a little lake. Then they built a ditch from the top of the dam high up along the canyon side, as far as the bank or hill where they wanted to dig for gold. They built a tall, narrow box that went from the end of the ditch down to the bottom of the canyon. This box was made small at the bottom, so they could connect it to a very big canvas hose, like a fire hose. At the end of the hose was a big brass nozzle.

"The water fell out of the ditch and down

through the box so hard and fast that when it shot out of the nozzle it had force enough to knock a man down. This strong stream of water was turned against the gravel they wanted to mine. It tore the banks up ten times faster than a dozen men could do it with a pick.

“So, by joining together and helping each other, the miners harnessed up the rivers and made them work for them. This was called hydraulic mining. It was much faster than the old slow work with pick and shovel and pan, or even than with the cradle.

“You see, all the mining was done in some way



—Courtesy Sacramento Chamber of Commerce.

Hydraulic mining.

with water. The gold was a wonderful gift to California. But we could never have got it out of the mountains if we had had no water tumbling down the Sierras on its way back to the Great Gray Sea."

WORK AND STUDY PLANS

Things You Can Do Alone

There were three ways to get gold out of the ground. If you had been a miner, which way would you have liked best? Why?

Many of the miners were rough men. Sometimes they gave rough or funny names to their camps. "Last Chance," "Roaring Flat," "Hangtown," were some of these names. Look on a map of California and find the Sierra rivers. See if you can find other names that sound like the old mining camps.

Things You May Do Together

Make some mountains and a canyon. Build a dam across the canyon. Build a ditch along the canyon below the dam. Make a gate in the dam so water will go into the ditch. Could you make a box and a hose connected to the ditch? Use some gold paint to paint on the big map the places where gold was found.

Important Facts You May Need

The year of the great gold rush was 1849. It was three years after California became part of the United States.

California was admitted as a new state in the Union on September 9, 1850.

The gold dust and nuggets were taken to San Francisco. They were made into money in the San Francisco mint. The gold coins were worth five dollars, ten dollars, and twenty dollars.

In the early days all the gold was washed out of the gravel. Miners used a pan, a rocker, or a hose with a strong stream of water.

Books You May Want to Read

“California.” Fairbanks. Pages 7 and 8.

“In Old California.” Fox. Pages 105 to 117.

“California the Golden.” Hunt. Chapter XXI.

“California History.” Wagner and Keppel. Chapter XXI.

“Boys’ and Girls’ California.” Salisbury. Pages 164 to 167.

“Seeing California.” Paden. Pages 31 to 37.

“History of California.” Bandini. Chapters VII and VIII.

“Cubby Bears.” LeConte and Kyte. Pages 113 to 119.

Bret Harte is a famous writer who came to California in the days of the “gold rush.” His books about the miners are grown-up stories. But children like his story about “The Luck of Roaring Camp.” Ask your teacher to read it to you.

CHAPTER XIII

THE WHEAT FARMERS

“Are we still miners today, Granddaddy?” asked Jim, when they gathered in the granary next day. “Because, if we are, may I have a turn to wear the old red shirt and high boots?”

“Yes, put them on. They will do very well for today’s story, although there is no mining in it. But it’s about the same people and I suppose they wore the same clothes, at least until they were worn out.”

“I’m glad that Great-Granddaddy didn’t wear his mining clothes out, but kept them for me to dress up in,” said Jim, as he proudly pulled on the big, heavy boots. “What became of him, Granddaddy? Did he find lots of gold?”

“Yes. You see, he was among the very first men to reach the gold fields. It was easy at first to get a good deal of gold from the stream beds, even working alone with a pan. When the winter snows came, that first year of the discovery, and the miners came down from the mountains to wait for spring, father went back to his ranch with some fine little sackfuls of shining gold dust and small nuggets.

“When winter was nearly over, father and mother had many a long talk. Should he go back

to the gold fields when the snows melted, or stay on his ranch? Before he decided, the first bands of gold seekers began to come into California. They brought word of the great army that was on the way, by ship and by wagon train.

“‘All these people will need food—lots of food,’ thought my father. ‘The gold is very tricky. Sometimes you find it and sometimes you don’t. But people always have to eat. Now there will be a chance to sell my beef, as well as the hides and tallow. I believe I’ll do better if I stay on my ranch.’”

“So he did. That first year of the gold rush brought Father more little sacks of dust and nuggets than if he had gone out with his pick and shovel and pan. He sent vaqueros to the coast ranches and bought all the mules he could find. Every week he sent a train of mules from Sacramento up to the mining camps, loaded with beef and other supplies.

“All of the big cattle ranches in the valley did well that year. Some of these ranches were owned by old Spanish families, but soon most of them, in the San Joaquin and Sacramento valleys, were owned by American settlers.

“Even on the American ranches the old ways of managing went on, because they were the ways best suited to the country. There were the vast plains covered with clover and grass in winter and

spring, wild oats in the summer, and good dry grass and seeds in the fall. What could they do better than feed stock on this land, especially now that they could sell meat as well as hides and tallow?

“Most of the American settlers, like the old Spanish padres, thought the Great Valley was good for nothing except to feed bands of cattle. ‘Too much swamp, too many floods, too dry and baked in the summer, no good for farms,’ said the old-time settlers.

“So it seemed that our valley would always be a wide and empty place, a feeding ground for bands of cattle and horses, deer and elk.

“Most of this valley land belonged to the government, but the bands of cattle fed on the government land as well as on the great ranchos. The American settlers, like the old Spanish ranchers, trusted to the rodeo and to the cattle brands to keep the stock safe for each owner.

“Now a new kind of animal was seen in the valley. They were sheep. They did not wander free as the cattle did. The great bands were carefully herded by men and clever dogs. Some bands were started from the sheep of the old mission days. But better sheep had come to California across the long immigrant trail, traveling all those two thousand miles on their own small hoofs. How fat they grew on the good valley feed in winter and spring, and

in the cool foothill and mountain country when summer dried the grass of the plains!

“One year the rains were light. The grass was short and poor. The cattle wandered far for feed. Where they hoped to find fresh pasture they found instead bare ground, eaten clean to the roots, as only sheep can eat a field. The cattle grew thin and gaunt, the little calves died.

“‘It is the sheepmen!’ cried the angry cattle owners. ‘Curse them! What right have they in the country that has always belonged to the cattle?’

“The shepherds said, ‘We have as much right as you have for your cattle.’

“Suddenly the vast valley lands seemed crowded.



—Courtesy of the Southern Pacific Company.
Sheep ate the grass down to the bare ground.

For the first time in California there was not enough land for the beasts that needed it. Bitter war grew up between the shepherds and the cattlemen. Both of them did cruel, unlawful things.

“Shepherds drove their bands by night to eat where indeed they had no right to come, and they cleaned to the bare ground fields that were needed for starving cattle.

“Cowboys drove bands of wild ponies into the solid herds of slow-moving sheep. The frightened ponies, plunging and kicking, left hundreds of little dead bodies behind them when they rushed away.

“Cowboys and shepherds carried guns, and many a lonely figure dropped suddenly out of the saddle, or dropped down by the evening camp fire, never to rise again—because the Great Valley was crowded. There was not feed enough for both sheep and cattle.

“Sheep were bad enough, but now came another trouble for the cattlemen. It was a new trouble, and it begins a new story in our valley—the story of wheat.

“I told you that cattle raising was the only business in old California. I meant that cattle hides and tallow were the only things that Californians raised to sell. But at the coast missions there were gardens and orchards, just enough of each to raise what they needed to eat. Always, at the

missions and on the ranchos, there was some wheat planted.

“Jim would certainly laugh at the way those wheat fields were planted. They plowed with a piece of forked tree, using one branch for a handle, and one for the plowshare, or point that cuts the ground, and one to fasten to the yoke of the oxen that pulled it. The branch that was the plowshare sometimes had an iron point, sometimes it didn't. Compared to our great steel plows, these poor tools only scratched the ground. When the seed had been scattered over this plowed field, they tied bushes or branches from the oxen's yoke and dragged them over the seed, to cover it.

“Harvesting was just as simple. There were no machines to do the work. Bands of Indians went into the fields and cut armfuls of the ripe grain with their knives. The squaws bundled it and carried it to the era, or thrashing ground.

“This was a level piece of ground, cleared and packed hard. Around it was a fence of poles and rawhide. The bundles of wheat were thrown loose in this era until the ground was covered more than a foot deep. Then a band of wild ponies was driven in. The Indian boys with whips and shouts drove them around and around in the deep grain. Racing, snorting, leaping, around they galloped.

“Then suddenly some boys would leap into the

thrashing ground ahead of the band, and stop them with wild yells and waving arms. The ponies would rear and whirl and stir up the wheat to the very ground, and go racing again in the other direction. In a few hours the wheat was so broken and beaten by their hoofs that all the grain was free from the stalks and stems. Then the ponies were driven out.

“The Indians waited for a strong wind to blow. Then, with forks made of a branching tree, they tossed the beaten straw and grain high into the air. The wind blew the light straw outside of the fence, and the heavy grain dropped back on the hard earth, until only grain was left. This they swept up and put away in sacks made of the useful hides.

“They ground it to flour in rough, hollowed stones not very much better than the ones you used for seeds when you were Indians. Sometimes they ground it between two flat stones, one solid on the ground, one turning upon it by a heavy wooden beam, pushed around by a donkey. But the best mills that they had in California were slow and hard to work and did not make a very clean or fine flour.

“Still, white men must have wheat flour to eat. The first American settlers who came into our valley planted wheat. They planted and harvested the fields in just about the same way that the old Spanish people did, using Indians to work for them.



Granddaddy and his sister, when they were children, walked to school in the bottom of the big ditch around the wheat field. Then they were safe from the wild cattle. One day the little boy climbed out to chase a butterfly. The cattle chased him! He reached the ditch just in time.

“Now you will easily understand that in a great cattle country the worst trouble they had in raising wheat was to keep the cattle from running over the fields and spoiling the crop. If there were many Indians to do the work, some Indian boys would be given the job of watching the wheat fields night and day to drive off the cattle.

“Sometimes the ranch owners would get a band of Indians to dig a ditch all around the wheat field, so deep and wide that the cattle would not jump over it. Captain Sutter planted very large fields, and they say his ditches were miles long. Think of the slow, hard work it must have been for the Indians to make those big ditches! They had only the poorest tools, sometimes only a wooden scoop or shovel, to dig the dirt. The squaws carried it up to the bank in their baskets.”

“But, Granddaddy, why didn't they make fences?” asked Jim.

“What with? There was no wire, and no machinery to saw boards. They did the best they could in those far-off days in a far-off land. They were too far away for the machinery of more civilized countries to reach them, over the deserts and mountains or the long trip by sea.

“As the years passed, after the gold rush, more and more people came into California. They needed more and more wheat flour. So the settlers

in the Great Valley planted more and more land in wheat. My father did. He sent back to the East for good farm machinery, and finally it came, after months and months. He planted big fields of wheat and he set up a little mill to grind it, and he sold flour.

“But all the time he had trouble with the cattle. No one ever thought of herding the bands of cattle. Didn’t the land belong to them? Hadn’t they always roamed free, to eat wherever the feed was good? The American wheat growers began to say, ‘No, the land belongs to the man who owns it. If we want to plant crops, you must keep your cattle off our land.

“The cattlemen said, ‘The cattle were here first. If you want to keep them off your crop, you must build fences or dig ditches, or watch your fields.’

“Again the Great Valley seemed too small for the people who needed its wide acres. Again there was war in the fields, bitter anger, crops spoiled, and cattle killed, because men had not learned to work together. Finally a law was passed, called the ‘No Fence’ law. It said that the cattlemen must herd their cattle and keep them off the planted fields.

“Little by little the old vast herds were crowded for feed. One very dry year they had so little to eat that thousands of them starved to death. Although rains came again, and good feed, there were

never again such vast cattle ranches in our valley. Those herds that were left were kept on their owner's land and were fenced in, or herded.

“As years went by the great wheat ranches grew and grew. Now they no longer raised wheat just for the people in the state to eat. By this time hundreds of ships were coming day after day through the Golden Gate and into San Francisco Bay. They came from all over the world. They brought more people. They brought the machinery and tools that were needed to farm with, to make sawmills and flour mills. They brought shoes and clothes and cloth.

“The ships came here full. Their owners did not want them to go back empty. What did the people of the world need that California could send them? Something that would be better than hides and tallow? Something that would not spoil on the long sea voyage?

“Wheat! All the world uses wheat and always needs it. It keeps, in dry places, as long as you like. So the wheat began to come down from the valley ranches. It came first in little trickles, like your Sierra streamlets, Barbara. It came on rafts and boats from each ranch, down streams and small rivers, or carried in wagons and mule teams to the great rivers.

“Then in a big, steady stream it went down to

San Francisco Bay, where the ships were waiting for it. Into their holds it poured, day after day, and away it sailed, over all the world.

“Soon, wherever men eat bread, California’s name was known, not only for her gold, but for her wheat, and she was called ‘the bread basket of the world.’

“The American farmers had learned to use the lands that at first had seemed so poor for farming. They had learned that, in California, spring is not the time to plant, but fall, after the first rains. Then grain is grown before the long, dry summer comes.

“Now they had machinery, too. The machinery of those vast grain ranches was one of the most wonderful sights in the world. In place of the crooked branch dragged by slow oxen, came the ‘gang plows.’ Many strong steel plows were built



An old-time harvester; drawn by thirty-two horses and mules.

together and were drawn by sixteen fine, quick horses or mules. They turned the soil deep and clean, in wide strips, swiftly and easily. The harvest was gathered by great machines drawn by thirty-two horses. They went into the field and cut the grain, thrashed it, cleaned it, and sacked it, all in less time than you can say Jack Robinson.

“So, many of the men who crossed the deserts and mountains or sailed the long seas to find gold, found it at last, not in shining dust or nuggets, but in the gold of California wheat. Many of the great wheat ranchers grew richer than the luckiest miners.

“These ranches were almost as enormous as the old cattle ranches had been. Four thousand acres they thought was just about right for a good grain ranch. They did not believe that a man could make even a poor living on less than a thousand acres.”

“Well,” said Jim, “This begins to sound like real farming. Still, it wasn’t *good* farming! It couldn’t have been. Nobody needs a thousand acres to make a living. What was the matter with those wheat farmers, Granddaddy?”

“Something was the matter, sure enough, Jim. The cattlemen made their wealth easily. Indeed, it was given to them. The rich soil of the Great Valley was given to them, and the Great Gray Sea gave them the rains that brought grass for their stock.

Nature was generous. They just took what she gave. But with all the richness of the valley soil and the winter rains, it needed many, many acres to feed enough cattle to make a living.

“As more men came into the valley, they tried sheep. Sheep needed less feed and less land, and more men could make a living in the valley. So the sheep began to crowd the cattle, but still the sheepmen just took what Nature gave them.

“Then the wheat men found they could make more money from the land with grain than with cattle or sheep. They, too, lived on the riches that Nature gave them. They took her gifts just as they were. They waited for autumn rains. When the hard, cracked soil was soft, they plowed and seeded and waited again. The green blades came and grew tall as spring passed, and in the summer sun the wheat turned golden. It swayed in the summer wind, like a vast ocean, rippling away and away as far as their eyes could reach. They harvested and sold to all the world. They lived on the wealth that Nature gave them so easily.

“They thought there was no end to her generosity. But after a few years they noticed that the crops were not so heavy as they had been at first. They began to understand that all those tons and tons of wheat had taken something out of the soil. Rich as it was, they saw that our Great Valley was

beginning to grow poor. They began to understand that men cannot live always on what Nature gives them. They must learn to work with her.

“Nature, so kind to them most of the time, sometimes was cruel. Some years the winter rains were late. They waited and waited to plow their lands. When at last a little rain came they sowed their seed. They waited again for rain to bring up the young green blades and to help them grow into tall stalks, heavy with grain. But no rains came. The short blades of wheat withered. There was no harvest, no boatloads of grain to sell. There was no money to buy clothes or groceries.

“So, Jim, you are right. It was not really *good* farming. Men had to learn a better way to live and to work in their California home.

“Tomorrow we shall see a new valley, waking up at last, and men learning that they must work with each other and with Nature so that all can be happy and comfortable from the good gifts she has given us.”

“Don’t you wish, Jim, we had been born on Great-grandfather’s ranch?” said Phil, as they scattered up toward the house. “Think of the parties, the songs and dances, and guitars, and the beautiful clothes!”

“Think of the horses,” said John, “the races and bullfights and bearfights and hunting, and the

rodeos! Even the thrashing was exciting, with the wild ponies and the Indians yelling. I'd like that kind of farming!"

"I'd rather have been on the ranch when they had four thousand acres of wheat," said David. "Wouldn't you like to sit up on the high seat of a harvester and hold the reins of thirty-two horses in your hands, and feel that old giant working behind you?"

"I don't know," answered Jim. "Did you ever drive a tractor? Dad lets me sometimes. When I feel *that* old giant shaking under me and tearing up the field behind me, that's more exciting than fifty horses!"

"But something is coming in our story more wonderful than tractors even—a giant, sure enough. Wait till you see him!" laughed Granddaddy.

WORK AND STUDY PLANS

Things You Can Do Alone

If you ever saw men plow, write a story telling how they did it.

Tell about harvesting grain, if you have seen a harvester.

Tell how a grain field looks in spring, in summer, and in fall.

Tell what sheep are raised for.

Things You May Do Together

Paint the wheat fields in the big map.

Model sheep to put in the big map.

Bring to school stalks of wheat, barley, rice, or any other grain raised in California. If you cannot find stalks and heads of these grains, find pictures of them.

Important Facts You May Need

From the time the Spanish people came to California until the time that gold was discovered, cattle raising was the most important business in California. That was about eighty years, from 1769 to 1849.

Gold mining was the most important business from 1849 to about 1880, thirty years or more.

There were still great cattle ranches for many years after gold was discovered. But in 1863 and 1864 there were two very bad dry years. The grass did not grow and the cattle starved. Soon after this the law was passed which said cattle must not run loose any more. Because they had lost so many cattle in the bad years, and because it was hard to keep cattle after the new law was passed, many cattlemen gave up this business.

Wheat raising was the most important business in California from about 1865 to 1890.

Men of the white races all want wheat flour for their bread.

Wheat keeps good a long time. It can be sent a long way in ships, to be sold.

California wheat ranches were immense. One man needed two or three thousand acres to make a living.

Rain made wheat grow. In a year when little rain fell, the wheat farmers had no crop and no money.

Books You May Want to Read

“California.” Fairbanks. Page 79.

“History of California.” Bandini. Chapter XIII.

“Seeing California.” Paden. Pages 38 to 43.

“Best Stories.” Childs Own Way Series. Pages 183 to 185 and 221 to 226.

“Home Folks.” J. Russell Smith. Pages 56 to 63 and 85 to 87.

“Type Stories.” Thompson. Part II, Chapter XIX.

“The Clothes We Wear.” Carpenter. Chapters V and VI.

Edwin Markham is a famous California writer and poet. He came across the plains with an immigrant train when he was a little boy, before the gold discovery. In one of his books, “California the Wonderful,” he tells very interesting stories of the old days in our state. This is a grown-up book, but perhaps your teacher will read you some of his stories. Pages 92 to 96 tell about cattle ranches. Page 159 tells about sheep. Pages 160 to 166 tell about wheat farming.

CHAPTER XIV

IRRIGATION

“When are we going to get back to the story of water, Granddaddy?” asked Barbara next day when they gathered in the granary.

“You don’t know a water story when you hear it, Barbs!” teased Jim. “Wasn’t all that story yesterday about water? The cattlemen and sheepmen and wheat growers made their living by just taking what the rains gave them, and when it didn’t rain enough they ‘went broke.’ It was all a water story, wasn’t it?”

“Well, maybe,” said Barbara, “but it seemed to me mostly about horses and Indians and hides and tallow and fences and harvesters.”

“Cheer up, Barbara,” said Granddaddy. “Let’s go back to the wheat growing just for a minute—then we’ll sail away on a truly water story.

“You remember, the farmers began to notice that their wheat crops were not so good as they had been at first. At last the wiser farmers began to say, ‘We must change our crop. We can’t grow grain always in the same ground. Crops do better if you plant grain, then perhaps alfalfa or vegetables. But there are no other crops except grain that we can grow here in this California valley,

with its long dry summer. What can we do?' They began to think that perhaps the old-time explorers were right when they said the Great Valley was no good for farms.

"Now many of the settlers in the Great Valley and the foothills had come to California to hunt gold. They had been miners for awhile. Do you remember how the miners learned to dam up the Sierra streams to make a lake, and how they led the water in a ditch to the place where they needed it?

"Some of these miners settled down as farmers. They remembered that it was not a very great task to lead water out of the Sierra streams and to carry the water wherever they needed it. 'I'll make a ditch,' such a farmer would say, 'and put water on my land in the dry summer time.'

"These men planted orchards and gave their trees plenty of water. The trees were soon loaded with fine fruit. The miners in the hills, and all the people who had settled in the river towns, were glad to get the fruit. They paid good prices for it. The orchard men made money.

"'This is better than gold-mining,' they said. 'It's better than wheat farming. There is always some snow in the mountains and water in the Sierra rivers, even in dry years. We will have good crops even when there is not enough rain for cattle pasture or wheat in the valley.'

“People began to say, ‘An irrigated orchard in California is better than cattle ranching or wheat farming. It is better than a gold mine!’

“They had found out that the vast snow fields of the kingdom of the Far High Peaks were really more precious than the gold mines they had come so far to find.

“All up and down the Great Valley people tried to get farms near the Sierra rivers. They raised wonderful orchards. They raised every sort of vegetable. Where there was plenty of water they even turned it on the pasture fields and wheat fields. The dry grass came green again. The poor worn-out wheat land grew rich again with heavy crops, fed



—Courtesy of the Southern Pacific Company.

An irrigated orchard in the Great Valley, near the Sierra foothills.

by the streams and the ditches that came down from the Far High Peaks.

“Best of all, men discovered that with plenty of summer water they could raise alfalfa. Now, where the dry brown grass had once stood through the summer, and where later the miles of yellow grain fields had stretched, came a great carpet of green. It grew through the long hot summer. It was cut and dried for hay and then, in a few days, it was green and thick again.

“Where the alfalfa came, cows followed. They were not the old long-horned cattle, lean and small, of the Spanish days. These were beautiful dairy cows, Jerseys and Holsteins, with great udders of



The vast grain fields go. In their place comes alfalfa and dairy cows.

milk. Butter and cheese made a new golden crop for our Great Valley. Again men said, 'A dairy ranch with plenty of alfalfa and good cows, is better than a gold mine.' "

"Now," said Jim, "this begins to sound like the California we know, with irrigated orchards and alfalfa and dairies. Has our story come down as far as right now, Granddaddy?"

"Not quite, Jim. The truth is, I have gone a little too fast. For it took many years of mistakes, and of learning new ways to use the Sierra waters, before our valley began to look the way it does today.

"At first, you see, each man tried to get a farm that was beside a stream. Then he built his own dam, dug his own ditch, and led the water to the fields or orchards that he had planted. That worked well enough for awhile. But soon another man would take land on the same stream, higher up. He, too, would build a dam and dig a ditch and lead the water to his own crop.

"Then the first farmer would find that the stream was too low to fill his ditches, because the farmer above him had taken out so much water. He would be very angry. He would go to his neighbor and say, 'I was here first. I have a right to this water. My orchard is dying. My alfalfa is dried up. My cows are hungry. You cannot take my water away

from me.' But the neighbor would say, 'My land, too, is on this stream. I have a right to the water and I need it, too. I have to make a living for my family.'

"You can see how dreadful it would be for these farmers when there was not enough water for both of them.

"Sometimes two neighbors on a stream would try to steal from each other. One man would go in the night and tear down his neighbor's dam, or close up his ditches, so the water would come down to his own farm. Sometimes these quarrels grew so hot that once more, in California fields, men went to work with guns in their hands. They were ready to fight, if they had to, to get the precious water that would save their crop or feed their cattle.

"Yet all this time, as you children know, there were great snow fields on the Far High Peaks, melting slowly, slowly. There were streamlets dancing down the hillsides, fine young rivers in the canyons, and the splendid San Joaquin and Sacramento flowing to the ocean. There was water enough to irrigate thousands of farms. What was wrong? The trouble was, each man tried to work alone, for himself. They had not yet learned to work together.

"Now presently the two quarreling farmers laid down their guns and talked things over. 'Let's work together,' they said. 'Let's get three or four

other farmers to come with us, and we will all go much higher up in the mountains. We will build a great dam across a canyon and make a big lake that will hold lots and lots of water.

“‘The canyon will fill up in the winter and spring. It will save the water that now goes running down the river and back to the sea. Then when the dry summer comes, we can open the dam a little and each of us will take a fair turn at the water. There will be plenty for six or seven ranches, all summer long.’

“‘That is what they did. Seven men, putting their money together to buy cement and bringing all their teams to work, easily built a high dam. This dam made a summer lake, holding so much water for them that all their ranches were green with fine orchards and deep fields of alfalfa. The cows were fat and the families were happy and friendly.

“‘You see, when men tried to work alone, there wasn’t enough water even for two farms, but when they stopped quarreling and worked together there was plenty for seven fine ranches.

“‘Now this new kind of California farm, with water for irrigation and all kinds of crops growing all the year around, was very different from the old cattle or wheat ranches. The man who owned an irrigated ranch must work all year long. With

steady work, plenty of water, and our California sun, he makes a better living on a few acres than the old Spaniards did with their ten thousand acres for cattle, or the early settlers with five thousand acres in wheat.

“Two or three hundred acres in alfalfa or orchard was all a good farmer needed. As they learned more about our soil and our climate, they found that with plenty of water a man could make a living in some parts of the valley with only forty or even twenty acres of rich land.

“So the old vast ranches were cut up and sold to hundreds and hundreds of hard-working farmers. Hundreds of families lived comfortably on the same amount of land that once gave only enough, in hides and tallow, or in wheat, to take care of one family.

“This great change, Barbara, came about because men had learned to make friends with the Sierra snow banks and streams, and to work together to bring those precious waters to their rich little farms.

“Now so much water was needed that it took more than six or seven farmers, working together, to bring down the waters for these hundreds of little farms. Besides, there was good land ready for farming that was not near a stream. Perhaps it was even several miles down in the valley. Yet

this land, too, if only water could reach it, would give fine crops. After a good many years, the farmers in the Great Valley learned a better way even than going themselves, with horses and tools, to build dams and ditches.

“They passed a law, here in Sacramento where we make our laws, that said something like this: ‘If any district in California wants to get water from the mountains, every man in that district shall pay a tax.’ That means, every man who owns land shall pay some money. Each man pays what is fair. He pays just a little if his farm is small. He pays a good deal if his farm is large and will need much water. Then the law says, ‘These farm-



Water from the Far High Peaks comes down to the wide valley lands.

ers shall come together and choose a few men to manage the work for them.'

"These men who manage are called directors. They collect the tax money, then they send for engineers. Engineers are men who have learned how to build dams and canals and ditches. They know more about such work than any other men. They can do it a great deal better than farmers could do it for themselves.

"The engineers go up into the mountains and study the streams and canyons. They make careful plans. They hire men with teams and machin-



—Courtesy Stanislaus County Development Board.

Don Pedro Dam, built by the Irrigation Districts of Modesto and Turlock.

ery and tools. They buy carloads of cement. They build a monster dam, high and strong.

“Back of this dam the winter rains collect in the canyon. The melting snow in spring fills the canyon higher and higher. When summer comes, there is a great lake, blue and shining through the long dry months.

“Leading down the mountain from this lake the engineers build big, strong canals. They cut through rock, they tunnel through mountains. They carry the water across canyons in big iron pipes. All through the summer the canals carry the water from the lake in a steady stream, down to the thirsty farms.

“When the canals reach the district that wants the water, the engineers build ditches to carry a fair share to each farm. Every farmer gets as much as is fair for the tax he paid. Then at last the water comes to his land.

“It took a long time to get all this work done. It seemed terribly long to farmers who were trying to raise their crops with only a little water, or perhaps none at all except the rainfall! How they waited and prayed for the water to come in time to save their dying trees, or to feed their thin cows!

“Your mother, Jim, will remember a trip we took many years ago. We went to visit some cousins on a ranch in the Modesto district. We were

there when at last the great day came when their lake was filled and their ditches were finished. The gate at the dam was opened. The precious water began to come down the valley and to spread out to one farm after another.

“There was a great celebration. Everyone went out to watch the water coming, and shouted with joy as it ran down the ditches. The children got on their ponies and raced along the banks, following the swift little streams as they came. The children laughed and shouted, too, although they hardly understood what a wonderful thing had happened. They did not know, as they raced with the little streams, that this water would change their district into one of the richest farming countries in the world.

“Of course, it takes thousands and thousands of dollars to build these great dams and canals and ditches. Yet each man pays only a little. He does not have to pay nearly as much as he would if he tried all alone to get water for his land. When many farmers put their money together, there is plenty to build whatever they need. Each man pays only a little, but he gets all the water he wants. This is a good deal better than going out with a gun to fight your neighbor for a little water, isn't it?

“Now, our Great Valley is really waking up. In a few days we shall have to begin to paint our map



The children race with the first water that comes down the Modesto ditches.

all over again. It will be the same old valley, and the same old mountains on either side, yet you will find you need much new paint to make it look as it should today, for men working together to bring water from the kingdom of the Far High Peaks have made a new world of our California home."

"That really was a water story!" said Barbara. "Granddaddy, mayn't we take another trip up into the Sierras to see one of those enormous dams and the lake it makes? We didn't see anything like that when we went to follow the trail of the waters."

"Oh, yes, Granddaddy! Take us all this time, please!" cried the children.



An irrigation canal in the Great Valley.

Granddaddy, although he was surprised at such a sudden plan, said, "It's a good idea, Ducky, perhaps we can do it. And—oh, splendid—we'll take a hunt on the same trip, for that old giant we were talking about!"

How the children buzzed with curiosity at this mysterious promise! Granddaddy wouldn't answer a single question, but sent them off, puzzled and excited, to the waiting car.

WORK AND STUDY PLANS

Things You Can Do Alone

If you ever saw a farm where crops were irrigated, write a story telling what crop was raised and how it was irrigated.

Make a list of the crops raised in the Great Valley on irrigated farms.

Find pictures of the different kinds of dairy cows in California. Paint them the right colors. The most important kinds are Holsteins, Jerseys, Guernseys, and Ayrshires.

Things You May Do Together

Build dams in some of the Sierra canyons of your big map. Paint the lakes of water back of the dams, and the canals that carry the water down to the farms. Paint out most of the wheat fields and paint in their place orchards and alfalfa. Make a dairy ranch with a silo. Model dairy cows in a corral.

Important Facts You May Need

The law that tells how farmers can work together to get irrigation water is called "The California Irrigation District Act."

It was passed in 1887. It is often called "The Wright Act," because the man who did most to plan this law was named Wright.

This law worked so well that many countries in other parts of the world copied it.

Our irrigation laws and our irrigated farms are famous all over the world.

The Modesto-Turlock Irrigation District was the first to build an irrigation system under the Wright Act. It took sixteen years of work before the water began to run down in the ditches. In this one district there are 160 miles of main canals and 450 miles of smaller ditches. More than sixty-five thousand acres are irrigated in this district.

Although there are so many irrigated farms in the Great Valley today, there are still large wheat ranches in some parts of the valley.

Books You May Want to Read

"California." Fairbanks. Pages 61, 82, and 86.

"Seeing California." Paden. Pages 44 to 50.

"History of California." Bandini. Page 254.

"Human Geography." J. Russell Smith. Page S. 36.

CHAPTER XV

CONQUERING THE RIVER FLOODS. DRAINING THE TULE LANDS

When the children gathered next day they were all wondering about different things. Some of them were still thinking about the giant they were going to hunt for up in the Sierras.

“Do you suppose Granddaddy is only joking?” they wondered. “Could it be a real giant?”

John wasn't so interested in giants. He was wondering what kinds of paint he would need to change the map so that it would be right for the new valley of today. Barbara was wondering about the next story. “We had so much about water yesterday, I suppose it will be *dry* today. Will it be quite dry and not interesting today, Granddaddy?”

“This time you guessed wrong, Barbs. This is the wettest story of all that we have had. In fact, it is all about river floods and marshes.”

“Oh, that's right,” said John. “Before we get the valley looking the way it is today, we must get rid of all these miles of tule lands that I painted on the map. I know there are no such marshes now. What became of them, Granddaddy?”

“Do you remember,” said Granddaddy, “what the old Spanish explorers and the early American settlers said about the Great Valley?”

“Yes, I do,” answered David. “They said it was no good for farming. They said it was too wet from floods in winter and too dry in summer, and too much of it was tule land. We know now how the farmers worked together and got water on their dry lands and made good farms. How did they stop the floods and get rid of the tule lands, Granddaddy?”

“It’s a long story, David, and you needn’t be afraid that it will be a dull story, Barbara. We’ll begin right here on our own farm, which is a part of the great ranch my father used to own.

“You remember I told you that when he picked out this land, he chose a place on a little hill for the adobe house he built. All of the old settlers always tried to find a hill for the house. For every year, after heavy rains, or when the snows began to melt in the mountains, the Sacramento River rose and rose and flooded the fields.

“No one was bothered in those days by the floods, if his house was high enough to keep dry. The cattle and horses went off toward the dry ground in the hills. Roads, or rather the trails they used for travel on horseback, were flooded. But it didn’t matter. They stayed at home, or used a boat if they needed to go over to Sutter’s Fort or to visit some neighbor.

“After awhile, when dry weather came, the water

went down. In the fields that had been flooded, the grass was richer than ever. The cattle came back from the hills and grew fat in the green pastures by the river.

“As more and more people came into the valley, they settled at first on the higher lands near the Sierras. These lands were not reached by the floods. They are the lands we were talking about yesterday. At first they were used for wheat. Later they were irrigated and used for all sorts of crops.

“But when the higher land was all settled, people were still coming and coming, and they wanted land. They had to take what was left—the land close to the river.

“My father, of course, had a great deal of high land in his big ranch. After he started to raise wheat he found the richest soil was near the river. He tried each year to plant nearer and nearer to the river. Sometimes he went too near, or the floods were extra high, and the waters would come and cover his fields and wash out his seed. He would lose all the crops he had worked so hard to plant.

“Now, too, there was not so much land for the cattle. You remember the law that said cattle must be herded on a man’s own ranch. So, when floods came, often the cattle were caught in low fields and hundreds would be drowned.

“Sometimes the floods would not be very high for several years. New settlers would come in and build houses and plant fields where they thought they were safe. Then a very rainy season would bring a great flood. Houses would wash away, orchards would be ruined, and cattle would be killed. Sometimes men, too, and their families, would be drowned. Still, more and more settlers kept coming, and the good lands by the river were so rich that they wanted them for farms, even though they knew about the danger of winter floods.

“At last the farmers tried to save the farms from floods by building up banks along the river. If a man had a farm that lay beside the river, he took horses and a scraper and scraped up earth and piled it along the river bank, solid and tight.

“When the river rose higher and higher, if he had done a good job, it held fast. The water did not flow over his land. How happy such a farmer would be when he saw the floods on every side, while his own house and barns and cattle were safe! But it was not very often that one man alone could build a bank, or levee as they call it, strong enough to keep his land safe in the worst floods.

“Then there was another trouble. Sometimes the very levee that he had built to protect his land would turn the flood water so that it would flow deeper and faster onto the farm below him. Then

the second farmer would come to the first farmer, very angry, and say, 'Your levee has turned the water onto my farm and flooded it where it had always been dry before you built your levee. You have no right to build a levee that will ruin my land.'

"The other farmer would say, 'I have a right to do whatever I can to save my own land.'

"Once again there was trouble in the fields of our Great Valley, this time because there was too much water on the land!

"Sometimes a number of farmers whose lands joined each other along the river bank would each build a levee in front of his own land. Each would work hard to make his own levee high and strong. He would watch it carefully to be sure that no tree roots broke through the tightly packed dirt to make a hole where the water might pass. He watched carefully to be sure there was no low spot on the bank where the water might overflow.

"But perhaps just one of these farmers would grow careless, or would be too busy to watch his levee. When the flood came, the swift, cruel waters, lapping, lapping at his bank, would find a weak place. Into this place the water swirls. It makes a hole—a bigger hole. It breaks through, first a trickle, then a swift stream. At last the levee breaks with a roar, and the flood water rushes out over the fields of the careless farmer.

“But that is not the worst. On and on the flood comes. It covers his field, then it pours down to the next farm, and the next. All the farms along that part of the river are ruined. Their own levees stood strong and whole, but behind them rushed the flood that had broken through the levee of the careless farmer. All their own work and care could not save their ruined crops and drowned cattle.

“At last the river farmers learned what the farmers of the dry lands had learned. They must work together. One man alone, no matter how hard he worked and how wise he might be, could not make his land safe. All must join to help each other.

“These farmers did what the irrigating farmers had done. They chose a few good men in a large river district to manage the job of holding the river in its own river bed. They each paid a tax, a fair tax for the land that they owned.

“Then the directors chose engineers to make plans, and hired workmen and teams and machinery and engines. With plenty of money, and one good plan for all, at last they harnessed up the great Sacramento River with levees and dams and overflow basins.

“At last they made the old river behave. Now, where these good levees have been built, even in the worst flood years, no ranches are ruined, no towns are under water, and no lives are lost. The farmers

on the river banks are friends, working all together for the good of all.

“All up and down our Great Valley the story of the rivers and the chaining up of the river floods is the same. Farmers worked together in districts. Districts joined together, and over them all wise engineers here in Sacramento made plans so that every part of the valley would be safe and no part would be in trouble.

“Now this big task of keeping the rivers in their own beds during high water saved the good land from dangerous floods, and it did something else



—Courtesy Sacramento Chamber of Commerce.

A levee on the Sacramento River. The water in the river is higher than the land in the orchard behind the levee.

besides. Little by little it got rid of the tule marshes. In the old days when the river was high the water overflowed its banks. It spread out into wide lowlands that were so level that the water just stood there. It did not flow back to the river and down to the sea. Some of it soaked into the ground. Some of it evaporated in the hot, dry summer. But the river floods poured so much water onto these low flat lands that even in the summer they did not get entirely dry. So the land was sour and swampy and full of tules and cat-tails. These were the only plants that would live in the marshes.

“But now the levees on the rivers grew higher



—Courtesy of the California Academy of Sciences.

Water birds feeding in the wide tule marshes of San Joaquin Valley.

and stronger, and the flood waters were held in the river beds. At last none of the winter and spring floods went over the banks and out onto the low, flat lands. Summer after summer passed, and the swamps grew dryer and dryer. In some districts, when farmers were sure the levees would hold the water safe, they went into the tule lands, behind the levees, and dug ditches to drain the water away. In some places they even pumped the water out of the lowlands, over the levees, and back to the river.

“Then our long, hot summers dried the ground and sweetened the soil. The tules and the cat-tails died. At last the farmers went in and plowed the land and planted in it.

“When the crop came, they found they had a new gold field. For in all our rich valley there had never been found soil so fertile as these dried-out tule lands. Out of the old marshes men won their rich farms, when they had learned to work together to hold the rivers in their beds and to stop the winter floods.

“Now, too, the farmers of the Great Valley found that even though they were far apart from each other, on different kinds of land, still they were working together to make the valley safe and happy. The farmers of the dry lands built dams to hold back the winter waters in a mountain lake so they could use it for summer irrigation. When they

did this they did not plan to help the farmers of the low river lands. They were not thinking about the millions of acres of worthless tule lands. They just wanted to hold the water back so it would not run away to the Great Gray Sea, but would stay in the mountains until they needed it for summer crops.

“But every time these farmers built a dam and held the winter water back, there was just that much less water to come rushing down the rivers in the flood times. The dams helped to make the river lands safe from flood. They held the water back so that the tule lands had a chance to dry out. So, although they lived far apart, the farmers of the Great Valley were helping each other.

“Now, the great marshy lake that you have painted in the San Joaquin Valley grows smaller and smaller. For now, more and more dams are built, and thousands of small farms are started in this part of the valley. All the water of the Kern and Kings and Kaweah rivers, which used to flow down into Tulare Lake, is used for irrigation.

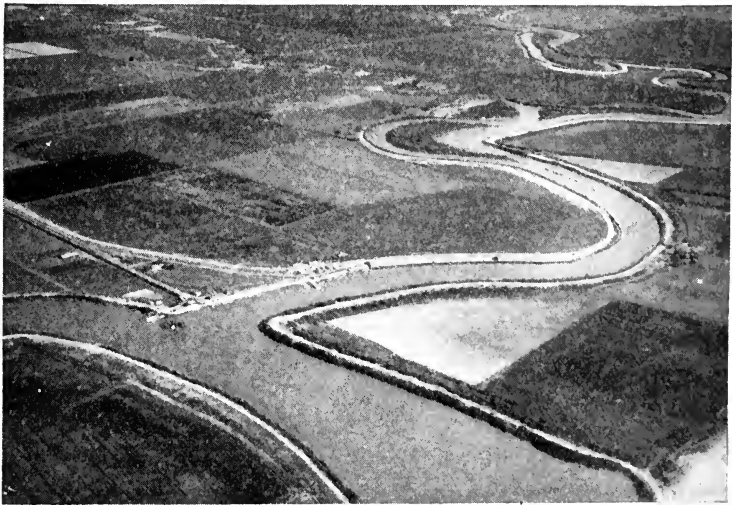
“Each year farmers plow more and more of the old lake bed, until at last it entirely disappears. Where the desolate marsh once stretched for nearly a hundred miles there are now farms and homes.

“Here on your map you have painted tule lands in all that district where the two great rivers meet, and run among many small islands. They used to

be swampy little islands. Today they are dry land, the richest land in the world. They are guarded from flood by strong levees and by the great dams far off in the high Sierras.

“So at last we who live in the Great Valley of our California home can laugh when we read in the old books what those long-ago explorers thought. ‘The Great Valley is no good at all. It is flooded in winter and in summer it is dry and baked on the higher lands. It is swampy and sour in the miles and miles of low tule lands. It is no good for farming.’

“Don’t these dismal words sound strange to us



—Courtesy Stockton Chamber of Commerce.

The Delta lands from an airplane. You can see the winding river and the highways built on the top of the levees. Behind the levees are rich farms, where there used to be only tule marshes.

today? For we found in our Great Valley all these things the old explorers said, it is true. But we found rich soil and warm sun, and we wanted to live here. So, working together, we have chained up the river floods. We have dried and sweetened the sour tule lands. We have covered the dry high lands with streams of water from the Far High Peaks, flowing all through the long sunny days of summer. We have made our Great Valley a rich and happy and beautiful home for thousands and thousands of people, because we learned to work together."

WORK AND STUDY PLANS

Things You Can Do Alone

Write a story about two California children who lived on a ranch near the Sacramento River. Tell what happened when a flood came and broke their levee.

Things You May Do Together

Build levees on the rivers of your big map. Paint out Tulare Lake and the tule swamps of the Great Valley, especially the swamps where the two rivers meet. Paint in their place the farms of today. Show on your map what kinds of crops are raised on the delta farms.

Important Facts You May Need

The banks that men make to hold back river floods are called "dikes," or "levees."

"Delta" lands are lands made at the mouth of rivers by the soil washed down by the river. This land is very rich.

In a far-away country there is a great river called the Rhine. It has made rich delta lands where it flows into the sea.

These lands are in a country called Holland. The people are called the Dutch people. They built dikes long ago to keep their land safe from floods. They raise fruits, vegetables, and flowers in their rich delta lands, just as we do.

Our delta lands are sometimes called "The Holland of America."

In the old books that tell about the Great Valley when the first white men explored it, they often spoke of the mosquitoes. They were a dreadful pest. Later on, when the first settlers began to live in the Great Valley, they had a great deal of trouble from a sickness called malaria. Today the people who live in the Great Valley have little trouble from mosquitoes or malaria.

Mosquitoes lay their eggs and hatch more mosquitoes on the still waters of marshes or ponds that do not have moving water. The bite of certain kinds of mosquitoes causes malaria. When the people of the Great Valley learned to work together to keep out the flood waters and to dry up the marshes, they also got rid of the pest of mosquitoes and malaria.

Books You May Want to Read

"Seeing California." Paden. Pages 85 to 95.

"California." Fairbanks. Pages 85 and 86.

"New Geography of California, United States, and the World." Fairbanks. Page 58.

"Hans and Hilda of Holland." Smith. Chapter VII.

"A Little Journey to Holland." George and Dean. Pages 3 to 10.

"Our Neighbors Near and Far." Thompson. Pages 113 to 119.

CHAPTER XVI

ELECTRICITY

“Ol’ Man River, dat Ol’ Man River,
He can’t do nothin’,
He don’t say nothin’,
He just keeps rollin’,
He keeps on rollin’ along.”

The children came down the path shouting the old darky song, led by Philip’s clear high voice. They had been talking about the old-time floods of their great river, and how men had finally learned to keep it safe between its banks, “rollin’ along,” back to the Great Gray Sea.

Granddaddy laughed when he heard them coming. “You had better keep ‘rolling along’ yourselves, and lively, too. Didn’t your mothers tell you? No story today!”

The two mothers laughed, too. “No, we didn’t tell them, but we are all ready to start rolling. You tell them, Father,” said Aunt Jane.

“Oh, quick, Granddaddy, hurry and tell us!” cried Barbara. “Is it the giant? Are we going to go hunt for him?”

“You guessed it, Barbs. Your mother and daddy and Aunt Jane are going to take all of you up into the mountains to see some great dams and reser-

voirs. While you're there, if you hunt, you may find the giant!"

"Oh, fine!"

"Oh, come on, the cars are ready! I see lunch boxes and bed rolls!"

"Come on! Here's Dad, already starting the big car! Come on!"

All the children were talking at once. "But, Granddaddy," said Barbara, "aren't you coming, too?"

"Not this trip, Ducky. I'm going to stay here and mind the ranch. Look sharply at everything you see, and tell me all about it when you get home! Get in. They're waiting to start! Goodby!"

"Goodby! Goodby!" The last thing Granddaddy heard as the cars went down the drive was the children's voices singing,

"Ol' Man River, dat Ol' Man River,
He can't do nothin',
He don't say nothin',
He just keeps rollin',
He keeps on rollin' along."

A few days later they came shouting into the granary where Granddaddy was waiting. They came back with a new song, a sort of rumbling chorus that Philip had made up, and they danced around Granddaddy laughing and singing,

“Fee fi fo fum,
I smell the blood of an Englishman!”

“Oh, Granddaddy, we found him!”

“He *is* a giant, sure enough, bigger and stronger than the one at the top of the bean stalk!”

“But he’s a *good* giant, Granddaddy—you didn’t tell us he was a *good* giant!”

“But he does sometimes kill people!”

“But not on purpose! He *is* a good giant, isn’t he, Granddaddy?”

“One at a time!” laughed Granddaddy. “I can tell you found the giant, sure enough! But I want to hear the whole story. David, you know how stories ought to begin. You start first and tell me how you found him.”

“Well,” said David, “we started out going south from Sacramento, and we drove a long way through the valley. Barbs got cross and said, ‘Why can’t we go right up into the mountains to a dam?’ and Uncle said he was taking us to see one of the biggest dams in the world, and we couldn’t get there in five minutes. But in the afternoon we did start to go up into the foothills and then higher up until we got past all the farms and there were forests on both sides of the road.”

“Like the forests we saw on our trip last month,” interrupted Jim, “only there were no snow patches.

It was dry everywhere except the streams down in the canyons."

"And I told them about matches and fires," said Barbara, "and how terrible it is when forests burn, and how we have to have the forests to take care of the snow and the little streams—didn't I, David?"

"Yes, she did, and Uncle said it was a good sermon. He said he wouldn't even light his pipe again until we got out of the forest. In the evening we came to a big camp, high up in the mountains. There were tents all around among the trees. They were splendid tall trees, the biggest I ever saw."

"And I had a fine swim in a little lake near the camp. It felt good after that hot drive!" said Jim.

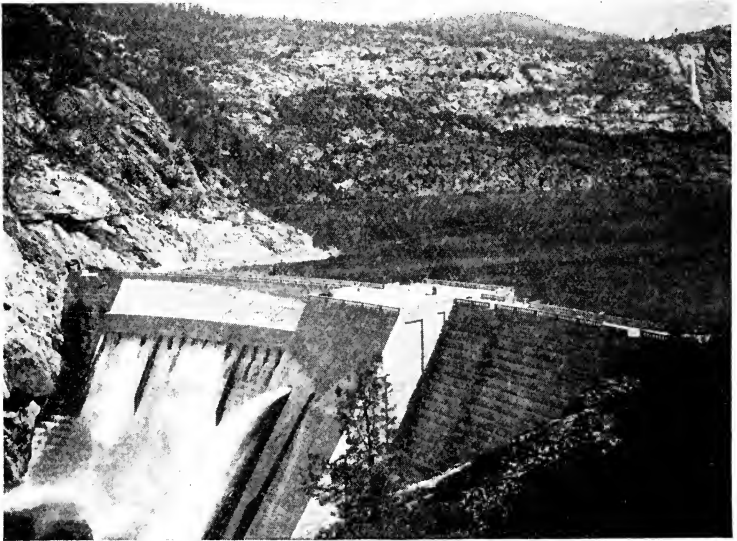
"Next morning, very early," David went on, not at all upset by these interruptions, "we drove about seven miles on up through the forest. All of a sudden we saw a great big lake. Then the road went down a steep place and we drove right straight out onto the top of an enormous dam.

"The lake was on one side, and on the other side we could look down the front of the dam, way, way down, and at the bottom was a river."

"It was the most beautiful lake, Granddaddy," cried Philip. "It was wide and so long we couldn't see where it went, because it turned and the hills hid it. It looked cold and rather sad, because the rocks around it were so bare and high, and oh, it

looked big, big!” Philip’s eyes were shining as he tried to tell them how beautiful the lake had seemed to him.

“But, Granddaddy,” said John, and his eyes were shining, too, “you should have seen that dam! It was like a mountain of stone, fitted into that deep canyon, so strong and tight, and holding back that huge lakeful of water! Oh, I wish I could have seen them build it! How could they, Granddaddy? Wasn’t there water in the river down in the canyon? How could they start to build it—do you know?”



—Courtesy Bureau of Engineering, San Francisco.
O'Shaughnessy Dam, across the Tuolumne River in Hetch Hetchy Valley. Built by the City of San Francisco.

“Yes, I know,” answered Granddaddy. “First they built a rather small dam out of logs, up the canyon. They cut a tunnel through the solid rock of the canyon side, a tunnel that started at the log dam and ended a long way below the place they were going to build the real dam.

“The log dam caught the river water and sent it through the tunnel. The tunnel carried it back to the river bed, way down the canyon. So they had a dry place to work. They worked nearly four years to build the dam, and it cost the people of San Francisco millions of dollars.”

“Yes,” said Betty, “Uncle told us that. And Jim was cross. He said he wanted to see an irrigation dam. Barbara and I thought it was fine to see a dam that gave water to a great big city. City water is just as important as irrigating water, isn’t it, Granddaddy? And San Francisco is an important city, isn’t it?”

“Well, Jim got his irrigating dam later, sure enough,” John went on. “But we didn’t see anything else so exciting as the Hetch Hetchy Dam. The dam is built so that they can let the water out when they need it, just so much at a time. There are holes, kind of tunnels, through the dam. Some are high up, some lower. There are huge strong iron gates to open or shut these tunnels. Only one was open when we were there. The water was

shooting out like a terrific waterfall, and pounding down into the river bed like thunder.”

“We went down some stairs on the dam, a long, long way down,” said Betty. “Everything was wet with spray, and there was a rainbow over the waterfall.”

“Did your uncle explain how the water will go from this great dam down to San Francisco, a hundred and fifty miles away?”

“Yes,” answered John. “But it isn’t finished yet. Now the water goes back into the river bed. When everything is finished it will go right from the dam into a big tunnel cut through the mountains, down to the edge of the valley. It will cross the valley in huge steel pipes. Then it will go in another tunnel through the coast mountains and into big reservoirs right in San Francisco. The pipes and tunnels will carry four hundred million gallons of water a day!”

“That ought to be enough to keep them all clean and give them plenty to drink, even in a big city like San Francisco,” said Barbara. “But go on, David, tell Granddaddy how we found the giant!”

“We drove back to the camp,” said David, “and then down along the same road we had come, for a long way. Then Uncle turned off suddenly and began to go down a steep road, down and down.”

“Mother was scared,” Barbara broke in. “She

said, 'Are you sure your brakes will hold, Daddy?' and Daddy said, 'Don't be afraid, I have it in low. It can't get away.' We were all wondering where in the world Daddy was going. Then we began to hear the most awful roaring!"

"Yes," said David, "John thought maybe it was another dam and a waterfall. But it didn't sound just like a waterfall. Barbara got kind of pale and said, 'Do you suppose it really *could* be a giant? I thought Granddaddy was only joking.' It got louder and louder and everyone was kind of excited, and then bang! we came round a corner and there was a great big building. There were a lot of arches at



—Courtesy Pacific Gas and Electric Company.
A power house in the high Sierras.

the bottom of one side, and big spouts of water were rushing out, but that was not what made all the roaring. Then John yelled so loud we could all hear him, 'Oh, it's a power house, and it's Granddaddy's giant, sure enough; he means electricity!' "

All the children laughed, remembering how excited they had been when John found the giant, and Phil began to sing again,

"Fee fi fo fum!"

"Well, honest, it was kind of dreadful when Daddy took us inside the power house," said Barbara. "The roar was so tremendous we couldn't talk at all. There were four green shiny monsters thundering, and things whirling, and the ground shaking——"

"She means the water wheels and generators," said John. "There was a man there that explained about everything to us, and I think I understood most of it, but I can't explain it again very well."

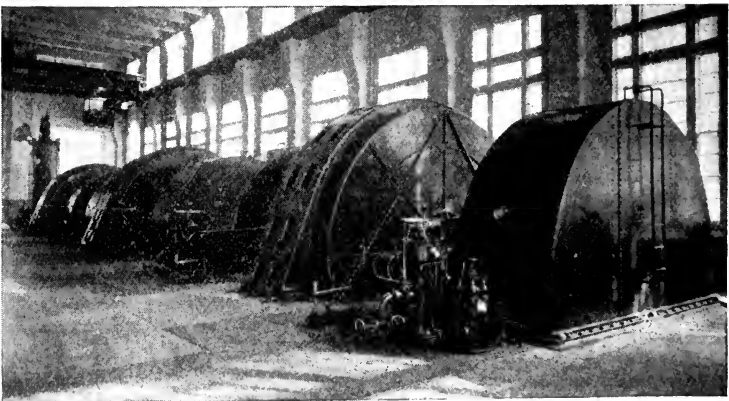
"I don't believe I could explain it myself," said Granddaddy. "But try to tell us as much as you can about your giant."

"It begins way up above the power house. There's a dam there and a reservoir that is filled from the Hetch Hetchy water. Then all that water is passed into four huge steel pipes, and they come right straight down the side of the canyon into the power house. The pipes are called penstocks. We

could see them on the side of the mountain. The water falling down that steep hill through the penstocks rushes into the power house and turns four huge, strong water wheels. They turn terribly fast, and when they turn they make electricity. I can't explain just how."

"I can't, either," said Granddaddy. "And nobody can explain very well what electricity really is. But you have told us how we make it. Can you tell us how we carry it from place to place and what we do with it?"

"Yes, even I can tell that much," said Jim. "The electricity is made in the generators, and it goes out on great big copper wires. They carry it down the mountains and out across the country on high steel towers. We saw them everywhere.



—Courtesy Great Western Power Company.

Water wheels and generators in the power house.

“And of course everybody knows what we *do* with electricity! We do *everything* with it. It makes light, it runs pumps and every kind of machinery, it runs street cars and trains and telephones and radios and ice boxes, and—oh, well, you know, it just does everything!”

“Granddaddy’s giant, Granddaddy’s giant!” shouted the children. “He does all our hard work and lights up all the world at night! And he scared Barbara, too, didn’t he, Barbs?”

“Well, maybe he did. Just the same I’m going to call him *my* giant, because really he’s a water giant, and didn’t I start all these stories about water?”

“*Your* giant! I like your cheek,” cried John, “why, you couldn’t even understand what that generator was for!”

“Oh, well,” interrupted Jim, “let her have her giant and don’t argue. I want to get on to the best part of the story.”

“All right, your turn, Jim. Let’s see what you think is the best part of the story,” said Granddaddy.

Jim took up the story, talking as fast as he could. “We left Moccasin Power House and next day we got down into the lower Sierra hills. Then Daddy turned off the road to visit another dam, the Don Pedro. He told us how this dam was built. It wasn’t built by a big rich city like San Francisco,

but by farmers, to get water to irrigate their farms. Two districts, the Turlock and Modesto districts, joined together to build it. They own all the water and all the works, from the dam right out to each farm.

“Don Pedro is tremendously high. Dad said it was the highest dam in the world. It holds back a huge lake of water. The farmers have built a power house, too—right down at the bottom of the canyon on the other side of the dam. We couldn’t see the penstocks, because they came down inside of the dam. But we saw the generators. They roared almost as terribly as the big ones at Moccasin. Daddy says the farmers own all that electric power and use it on their farms and in their towns.

“The Don Pedro Lake holds back the winter and spring water until the farmers need it for their crops. Then they let it out a little at a time. It goes through the power house and makes electricity. Then it goes back into the Tuolumne River and goes on down the river in a steady stream all summer to another dam at La Grange.

“We went to see that dam, too. It isn’t nearly so big as the Hetch Hetchy or the Don Pedro. But at each end of the La Grange Dam, high up on the side of the canyon, they have cut a wide deep canal in the solid rock. The dam holds the water way up high in the canyon, high enough so that it flows through

gates at each end of the top of the dam, into those two canals.

“They start off like real rivers, deep and rushing and plunging, one on each side of the canyon, high up. One goes to the Modesto district and one to the Turlock district. We spent nearly all day following one of them.”

“Fine!” said Granddaddy. “I know you liked that, Jim! I’ve been there. I remember what beautiful farm country those canals irrigate. What did you think of it?”

“Oh, Granddaddy,” cried Jim, “those were the finest ranches! Every kind of farming I ever heard of! Alfalfa and dairies—I like them best—fruit ranches, vineyards, and walnut groves. There were big poultry ranches, and beef stock on some places. Then there were farms where they raised melons, beans, corn, and sweet potatoes—and everything. And grow! You could just see them growing. Granddaddy, it’s great—irrigating on canals and ditches. No pump to run—you just open a gate and in comes the flood!”

“Tell me how they divide the water to the different farms. Can you remember?” asked Granddaddy.

“Yes. Each of those two big canals goes into a big reservoir, one for each district. Then they take water out of the reservoirs into canals that move

along slowly, wide and deep, through the districts. These are the main canals.

“Along each canal there are gates. If you open one of the gates, the water is turned into a smaller canal called a lateral. That means a side canal. One of these laterals runs past each farm in both of the districts. Each farmer has a main ditch that comes out of the lateral canal through a gate. When the gate is open, his ditch is filled full of water running pretty fast.

“The farmer has his place divided into level fields with checks, like ours here on this ranch, and he has a lot of little gates on his own ditch. He opens one, floods his field or one check of his orchard or alfalfa, closes the gate, and opens an-



☛ *The children visit a Modesto irrigated ranch. Jim and Betty and Barbara help open the farmer's head-gate.*

other. The water goes on until every field that needs it is soaked.”

“Did you find out how the water is managed and who decides which farm is to have the water each day?”

“Yes, Daddy went to see one of the district engineers, and he explained it to us. There are men paid by the district who watch the water and take care of the ditches and canals and gates, and visit the farms. They decide when each farmer may have the water to irrigate. They don’t have any trouble or fights. The men are fair, and there is plenty of water. I think it’s a splendid way to farm!”

“So do I, Jim!” said Granddaddy. “And I think you have had a splendid trip through the Great Valley and the mountains of our California home. When you saw the water running full in the ditches, and saw those green and happy farms, did you think of the old explorers who said our valley was no good at all? Now, see what we have done. Because we wanted water for our summer crops we have worked together to build dams that hold the winter water. Because of those dams we not only got the water we wanted, but we held back the river floods, and we dried the tule marshes into good rich farms.

“Best of all, we found a great kind giant. He

does our work for us and lights our houses and cities. He makes our houses warm, and keeps them cool. Hurrah for the kingdom of the Far High Peaks and for all the splendid things it gives us!"

"Hurrah for my good friend water and the giant he makes for us!" cried Barbara, and they left the granary singing once more Philip's rumbling song,

"Fee fi fo fum!"

WORK AND STUDY PLANS

Things You Can Do Alone

Although you are only a little girl or a little boy, the great giant of the Far High Peaks works for you. Write a story telling the things he does for you each day.

Things You May Do Together

Build a power house beside one of your Sierra dams. Show the penstocks. Make a line of towers to carry the power to the nearest city.

Important Facts You May Need

Electricity is often called "power." The place where electricity is made is called a "power house."

When electricity is made by the force of water falling through penstocks, it is called "hydro-electric power." California has more hydro-electric power than any other state in our country.

The heavy copper wires that carry the electricity from the power houses in the mountains to farms and cities are called "transmission lines." The tall steel towers that we see crossing

the hills and valleys of our state are transmission towers. They carry the transmission lines.

Although we have so much hydro-electric power, we can some day have a great deal more than we have now. There are still many streams in the Far High Peaks where dams can be built for irrigation and for power.

Books You May Want to Read

“Seeing California.” Paden. Page 49.

“Southern California.” Fairbanks. Page 82.

“Cubby Bears.” LeConte and Kyte. Pages 105 to 111.

CHAPTER XVII

PETROLEUM AND MANUFACTURING

“Granddaddy, do you remember that first night that vacation began, when we were talking about water?” asked Barbara next day when they gathered in the granary.

“Yes, of course I remember it. It was our talk that night that started all these stories about water and our Great Valley.”

“Well, do you remember when Jim and I made lists of all the useful things water gives us, you said both of us had left out one of the best things of all? We couldn’t guess then what you meant. Jim and I were talking about it last night. I think we’ve guessed now. You meant electricity, didn’t you, Granddaddy?”

“Of course I did! You were a long time guessing it!”

“Well, now that we’ve guessed it, are we at the end of our stories? We know all about water now. We know where it comes from, how we take care of it, how we use it, and what it did to change our valley and to make good farms. Is this the end of our stories?”

“If there were nothing in our Great Valley except farms, perhaps it would be the end,” an-

swered Granddaddy. "Farms are the most important things about our valley home, it is true. But there are cities as well as farms. Some of these cities are pretty important, too. And, of course, the great bay is part of our valley. It's our front door.

"The Golden Gate is the front gate of the Great Valley. Those cities around the bay are part of our story. Do you want to hear about them, too?"

"Oh, yes, I do!" cried Philip. "I've been hoping we would get down to San Francisco! Everything exciting is there—splendid buildings and beautiful pictures and orchestras—oh, everything!"

"And libraries and universities," added David. John and the girls joined happily, asking Granddaddy to go on with the stories.

Only Jim was silent. He looked rather cross. "I can't see what you think is interesting about cities," he said. "What is there to make a story about in a city? It was great hearing about the old Indian and Spanish people, and how they got their living. And I liked the cattle ranches and the wheat and the irrigated farms. And of course electricity is interesting, too. You couldn't run a ranch without electricity. But I can't see what there is about cities to make a good story. They don't grow anything in cities. They just sit around and eat up what we work hard to raise in the country. What's the good of cities, anyway?"

Jim was so much in earnest, and his words sounded so reasonable, that the children began to wonder if cities really were important. They looked at Granddaddy to see what he would say.

He laughed at Jim and said, "Good little farmer, Jim! I sometimes feel that way, too. I like the farm country best. But if you all really want the stories of our cities, perhaps before we are through even Jim will be glad that there are great cities at our front door. He will understand that farms need the town just as much as towns need the farms that feed them. So let's settle down for a few days of city life!

"Before we leave the Great Valley itself, there is one more story I must tell you. Barbara reminded me, when she was talking just now about her giant friend, electricity.

"Here in our valley men lately found two other giants. We can call them twin giants, because they come together out of the same hidden home. They are nearly as important as the great water giant you found in the mountains. Who can guess what they are?"

The children looked at each other. "A tractor seems like a giant to me," said Jim.

"One of those big locomotives, starting out of our Sacramento depot to go up over the Sierras—that always seems to me a real giant," said David.

“How about the steamer that took us down to San Francisco, and, oh, yes, those steamships ten times as big that we saw at San Francisco? They surely were giants!” cried Barbara.

“I think Granddaddy is only joking again,” John began. “But while you’re talking about tractors and locomotives and steamships—how about the new airplanes that come to Sacramento now? Those birds are giants for you, sure enough, if power and speed make a giant!”

“Your guesses are all ‘warm’,” said Granddaddy, “for all these things are children of one of my giants. Try again. Remember, they are twins. Men found them in our valley, not long ago. Down in the south end of the Great Valley.”

John began to laugh. “I know, Granddaddy! But make them guess!”

Jim was thinking fast. “Gasoline makes the tractor go, and the airplane. But steam engines run a ship and run the locomotive, so they can’t both be children in one family.”

“Oh, I know now!” cried David. “I’ve read about gasoline! It’s made from oil that comes out of the ground—thick black oil. And steam engines—they use that same oil to make a fire and heat boilers that make the steam. You mean oil, Granddad, don’t you—for one giant anyway. It’s got a name—a long one. What do they call it?”

“Petroleum!” John interrupted, rather proud that he knew the long word. “And it does come out of wells down in the end of the valley at Kettleman and Kitridge and other places. I know the twin giant, too—it’s gas!”

“Oh, well, John, you think you know everything,” said Jim. Jim was cross that he hadn’t guessed the giant himself.

“John is right about them both,” said Granddaddy quickly. “And here goes our story:

“Long ago, when the Indians lived in California, there were springs where water bubbled out of the ground, and on the water was floating a thin layer of oil. They didn’t like this water to drink. Around the edges was thick dark sticky stuff that they found was useful to put on cuts or bruises. It helped them to heal quickly.

“It was good for other things. If they wanted to build a warm, snug house, they plastered this thick sticky stuff between the woven twigs of the walls. It kept out the wind and rain. They found that it would burn. A stick smeared with this stuff and set on fire burned slowly and brightly, and made a fine torch on dark trails.

“Later the Spanish people used the same stuff for just about the same things. They called it brea, which means tar. They mixed it with gravel to make tight roofs on their adobe houses.

“Now California was not the only place in the world where these tar springs were found. Men had found them and used them in many other parts of the world. They tried experiments. They dug down into the ground where the springs were found, and sometimes a thick oil flowed out where they dug. It was like the tar by the springs. The tar was this oil dried until it was thick and stiff. Men found that the oil was fine to burn. If you put a rag or a thick string in it and put it in a bowl, it burned very brightly and steadily, better than candles.

“Little by little, in different parts of the world, men learned to use this oil, which they called petroleum. That means ‘oil that comes out of the rocks.’ Because it burned so well they began to think it was a very good thing to have. Whenever they found springs with tar around the edge, they dug wells and tried to find oil.

“Often, when they dug in the right place, the oil rose up fast in the well and poured out on the ground. They found that down in the ground with the oil there was gas. This gas tried to push up, and it pushed up the oil with it when it came. Sometimes there was no gas and then they had to pump the oil.

“But for a long time the oil wells were not important. It was not very often that they found tar

or any other sign of oil in the ground, and often when they did dig wells they found no oil. But after awhile men discovered that to get a great deal of oil they must dig very deep into the earth, deeper than any water wells had ever gone.

“They invented new kinds of tools that they called drills. These drills cut down through earth and through rock, down and down, until they ‘struck oil,’ as we say. Then a ‘gusher’ came rushing up to the top of the ground, a fountain of oil, driven up by its twin brother, gas.

“Now that there was a great deal of petroleum to be had, every day men found new uses for it. The oil just as it comes from the ground is called crude oil. They burn it and make steam to drive locomotives and ships. They ‘refine’ it as we say. That means, they make a clearer oil, like kerosene, which burns much more steadily and brightly than crude oil. Then, most important of all, they learned to refine gasoline from petroleum. With gasoline came the different kinds of engines that we use today, all of us, for all kinds of traveling, and for hard work. There could be no automobiles, no airplanes, no motorboats, if we did not have gasoline. Gasoline drives the tractors and heavy trucks, and the pumps in many wells.

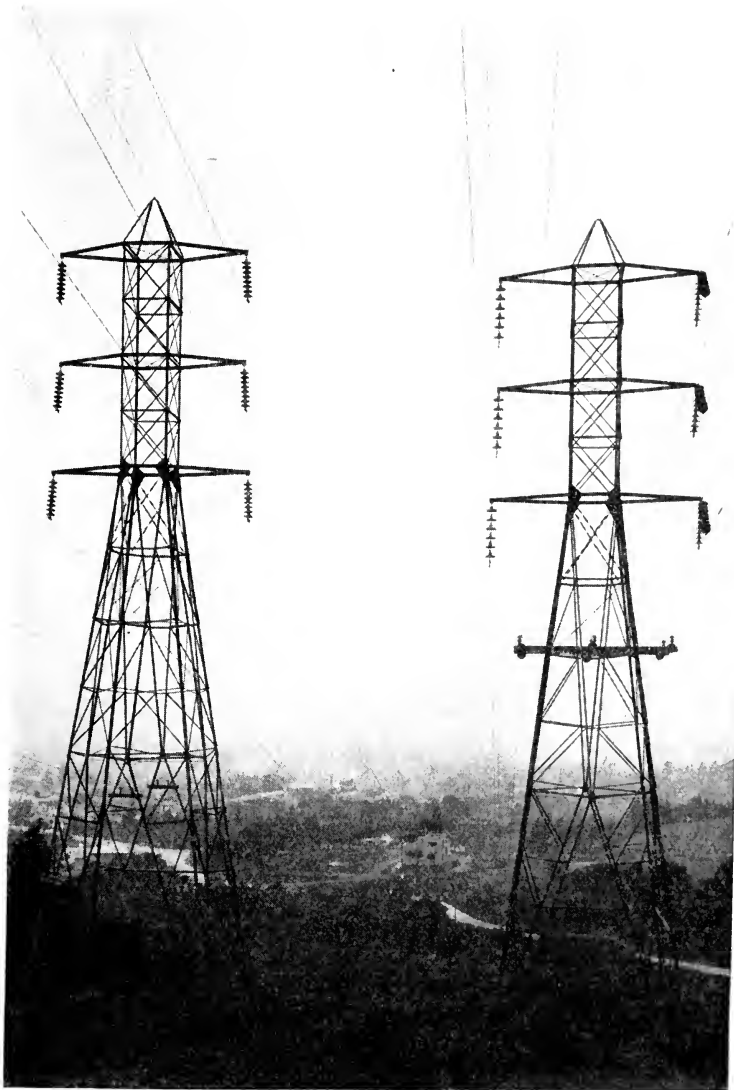
“Now all these things about petroleum wells, and the many uses of petroleum, were being discovered

in other parts of America just about the time that men were discovering gold in California. For many years we were busy with our gold mines up in the mountains. We did not dream that down in our valleys and near our sea beaches there was another kind of riches, perhaps more important than gold.

“When we did discover how much oil there was down deep in the earth of our California home, men were nearly as excited as they were in the days of '49. They called petroleum ‘black gold’ and went into the oil districts by hundreds and thousands, like a new ‘gold rush.’ Men grew richer from this oil in the rocks than even the luckiest miners who had dug gold from the rocks.

“All the gold mines in California were in the mountains around our Great Valley, and it was in the valley that most of the gold miners at last made their homes. Petroleum, however, has been found all over our state, and some of the most important districts are outside our valley. But we were lucky enough to discover some very rich oil districts here in the lower end of the San Joaquin, so that Nature has given us, right here in our home, three splendid giants to work for us—electricity, petroleum, and gas.”

“What kind of work does gas do, Granddaddy?” asked Betty. “I remember once I was in a house



—Courtesy Great Western Power Company.

The water giant comes down from the Sierras to the farms and cities of the Great Valley and the bay.

in Sacramento, an old house, and at night, instead of turning on electric lights, they turned on gas in a pipe and lighted it, and it burned quite bright. It wasn't so good as electric lights, though. And I don't call that work—just to make a light!"

"Well, I know lots of houses where they turn on gas in the kitchen stove and burn it to cook the meals, and they burn it in little heaters to keep the house warm in winter. Would you call that work?" asked Jeanne.

"Yes, I'd call cooking the meals doing work for us," said Granddaddy. "But the giant gas that I am thinking about does much harder jobs than that. Before we go on with his story, let's go back a moment to the old Spanish days. Where did those old Californians get all the things they needed—tools, cloth, tallow-kettles, dishes, and almost everything they used except leather things that they made at home from their own cattle hides?"

"They got those things from the Boston ships!" cried the children. They remembered the story of Great-granddaddy taking his hides and tallow down to San Francisco and trading them to the ship merchants for things he needed on the ranch and for presents to Great-grandmother.

"Yes, and later when my father wanted machinery for his farm and sawmill and flour mill, he sent for them to come from far away on ships.

“For years and years it was the same way in California. We didn’t make things. We raised all kinds of things—grain and cotton and fruit and cattle, but we sent them away on ships. The ships brought back whatever we needed to work with and to make life comfortable. We raised things but we didn’t make things. Why didn’t we?”

The children thought hard for a moment. John looked wise and smiled. “If you don’t mind, Jim,” said Granddaddy, “we’ll ask John to tell us. He’s going to be an engineer, and he ought to know.”

“If you don’t mind giving *me* a chance I think I can tell you myself, even if I don’t know as much as John,” said Jim, who was still cross because he had not guessed first about the twin giants.

“Go ahead, Jim,” answered John. “I’m sure you know the answer as well as I do.”

“Well, tools and cloth and farm machinery and everything like that, they are all made in factories with big machines. You have to have some kind of power to make the machines in the factory work. I don’t know how they ran their factories back in Boston, but here in California we hadn’t found our ‘giants’ yet. I suppose that is what Granddaddy means. We didn’t have any electricity to drive the machines, nor any oil to burn to make steam engines drive the machines. I don’t know just where the gas giant comes in, though!”

“Fine, Jim. You have the idea just about right. David, in all your reading, did you ever find out how they worked the factories in Boston and the nearby cities?”

“Yes!” cried David, who was so anxious to tell what he knew that he had nearly interrupted Jim. “They burned coal to make their steam engines go. They have lots of coal. They get it in mines, in that part of America. Wherever they have coal mines, near by they have factories and make all those things you said. They send them away in ships to sell. Haven’t we any coal mines in California, Granddaddy?”

“No, that is one kind of a useful giant that Nature did not give us. So for a long time people thought, ‘There never will be any big cities in California. Big cities grow up where hundreds of people come together to work in factories, to make things, and to sell them. There is no coal in California. They can’t make steam engines to drive machinery, so they can’t have factories. If they have to buy everything from far away, it will cost too much to live comfortably.’

“Indeed, it seemed true that we could never have factories or make the things we needed here in California, because people thought factories could be run only by steam engines, and steam engines had to have coal, and California had no coal mines.

So they said, 'California always will be a farm country. They can raise things but they can't make things.'

"Even the farmers were worried. After awhile sailing ships began to pass away from the ocean and steamships took their place. When steamships started off to California they had to carry enough coal for the trip coming here and the trip going back. They couldn't get coal in California. So it cost more for the farmers to send the wheat away to sell. And it cost a lot to bring the things they needed from the Eastern coast.

"'If only we had coal in California,' said the farmers, 'we could make the things we need right here at home and they wouldn't cost so much. Then, too, more people would come to work in the factories and they would use more of the things we raise. We could sell our grain and fruit and butter and meat right here instead of sending it so far.'

"All this time there were three giants waiting right here in our Great Valley to run factories for us and to make everything in the world that men could need or want!"

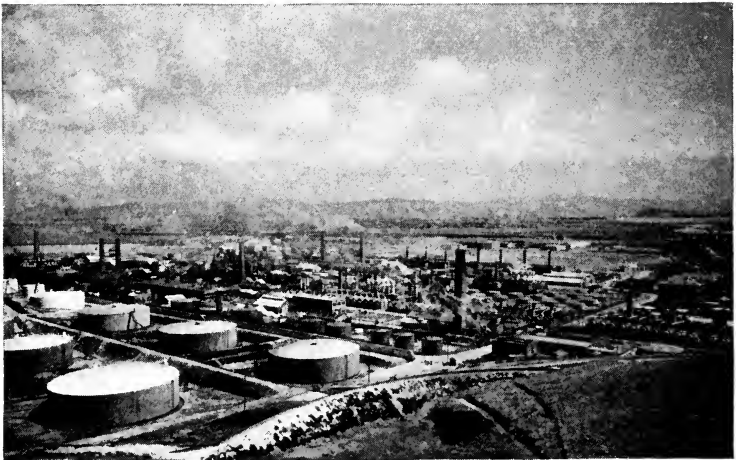
"Tell us about gas, Granddaddy. How does it work for us?" asked Betty.

"Just the same way that you said it worked in the house. It burns in great strong burners in the factories and makes steam to run the factory en-

gines. Men learned how to catch the gas as it comes rushing up from the deep oil wells and to carry it away in pipes. We have built miles and miles of pipe lines from the San Joaquin oil fields up here to Sacramento and to the bay cities.

“Some of these pipes carry the crude oil, some carry the gas. Both are used in the factories of our city, and of Oakland and San Francisco and many other important cities. It is even cheaper than coal, so our factories are growing fast. There are more and more of them every year.

“As more factories are started the cities grow larger. Even if you don't like cities, Jim, can't you



—Courtesy Standard Oil Company.

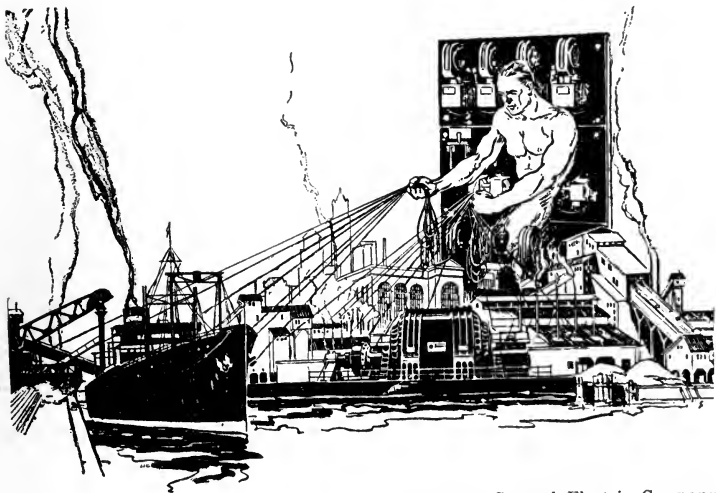
Storage tanks for petroleum at Richmond, on San Francisco Bay. Here the crude oil is refined and made into gasoline and kerosene and many useful kinds of oil and grease.

see how glad the farmers are to have them grow large and to have more factories year by year? For we sell the things we raise, in our own cities, more and more, instead of having to send them far away. We buy what we need right here in our own California cities, instead of sending far away for all we need, as the early Californians did.

“So we earn more, and we live more comfortably, because we found our three great California giants to do our work and to build up our cities. Tomorrow we will start on our way to be city children for awhile!”

“Really, Granddaddy?”

“Are we all going down to the bay?”



—Courtesy General Electric Company.

The giant Electricity comes to do the work of the city.

“Oh, hurrah! We’ll see San Francisco and the Golden Gate,” shouted the children as they scattered out of the granary.

WORK AND STUDY PLANS

Things You Can Do Alone

Make a list of the things that you use that are made of petroleum.

Write a story of one day of your life and tell about all the things that you use which are made in factories.

If you ever visited a factory, write a story telling what you saw.

Make a list of the factories in your neighborhood. Tell what kind of power runs each of them.

Things You May Do Together

Make some oil derricks and petroleum storage tanks. Put them in your map where they should go.

Visit a factory in your neighborhood. Find out what kind of power is used to run the machinery. Find out what kinds of things go into the factory. Find out how these things are changed when they go out again.

Important Facts You May Need

Long ago people made everything they needed with their hands.

Then they learned to turn a wheel with the foot. Perhaps you have seen a grindstone turned by a pedal worked by the foot. We call this “foot power.” It is easier than to turn a wheel by hand.

Then men found that they could use a donkey or a horse to turn a wheel to make things. This was “horse power.”

They learned how to use water to turn a wheel. Very good factories were built to make many kinds of things by "water power."

The next great discovery was "steam power." Steam was the strongest servant man had learned to use. Steam power is made by burning wood, coal, oil, or gas, to heat water.

"Electric power" is the greatest and most useful servant of all.

Electric power and gasoline, working together, give us "automotive power." This servant carries us swiftly over land and sea and through the air, in automobiles, motor ships, and airplanes.

Books You May Want to Read

"Southern California." Fairbanks. Pages 77 and 78.

"California." Fairbanks. Pages 87 and 88.

"Seeing California." Paden. Pages 111 to 117.

"Cubby Bears." LeConte and Kyte. Pages 73 to 79.

CHAPTER XVIII

THE WAYS MEN TRAVEL

“No suitcases in sight!”

“No lunch boxes!”

“Overalls and gingham dresses.”

“There’s Granddaddy in his old white suit!”

“No trip today, that’s sure.”

The children came into the granary with long faces. “Aren’t we going to San Francisco, Granddaddy?” they asked.

“Yes, we are, but not today. Before we start our trip, don’t you think you ought to know something about the road that we shall take? Traveling, you know, means roads. Do you know the road to San Francisco?”

“Why, no, but that’s easy,” said Jim. “You just get in the car and roll out to the highway and follow the signs that say San Francisco. Surely we don’t need any *lesson* to find our way, do we?”

“True enough. But look at our map. There are no highways marked for the old days we have been talking about. We have heard how men lived in California long ago, and how they made their living. Don’t you want to know how they traveled in our California home long ago, before there were any automobiles or highways or road signs?”

“Oh, yes!” cried David, “that will be great! There’ll be stage coaches and bandits and adventures in that story, I know!” The children brightened up and forgot their disappointment in the hope of a story of adventure.

“Maybe,” said Granddaddy. “Bandits weren’t very important, but the story of roads and of all the different ways that men travel is important—almost as important as Barbara’s story of water.

“Let’s go back to the beginning of our story—to those long two thousand years that California seemed asleep, when only the Indians lived here, and no one from other parts of the world ever found our beautiful land. Why was it hidden away from the world long after other parts of America were discovered and explored?”

“Because of the mountains—the Sierras?” asked Betty.

“I remember, it was the deserts. They couldn’t cross the deserts down there,” said Jeanne, pointing to the map.

“No, it was the ocean and the way the winds blew, so that it was hard for ships to get up our coast,” said David.

“Of course you are all of you right,” Granddaddy answered. “It was because there was no good or easy way to travel into California that it lay hidden away so long. Do you remember what

we found out about the Indians? They lived in California for at least two thousand years without changing their ways or learning any new ways in all that time. Do you remember what we said was the reason they stayed just the same, year after year, for two thousand years?"

"Oh, I remember!" cried Philip. "Because they didn't travel!"

"Because they had no roads!" added David laughing. "I see now, Granddaddy, why you wanted to give us a story about roads. Do you mean it was roads that changed the old California into the kind of a land it is today?"

"Listen to my story and see if that isn't pretty nearly true, David. It's true what you said about the Indians. There were no roads over the mountains or deserts by which they could travel to other lands, or other people could travel to their land. They could learn no new ways of living from stranger people.

"We know, too, that they did not travel very much even inside of their own land. Why do you suppose they stayed so quietly, each tribe in its own valley? Since the tribes almost never visited each other, their languages grew so different that they couldn't understand each other. Why didn't they know each other better?"

The children thought a minute. Then Jim said,

“I suppose the answer is, because they had no roads. But why didn't they make roads, or, anyway, trails? It isn't so very hard to travel around in California—anyway, not in this big valley. Why were they so lazy, Granddaddy?”

“Think a minute, Jim. What do you need, if you want to travel far, besides a road to travel on?”

“An automobile?” The children laughed, for they knew this was not the right answer.

“Well, anyway,” said Philip, “you need something to ride on, and to carry your things. Didn't the Indians even have horses or donkeys or anything?”

“No, they didn't, and surely that is part of the answer to our question why the Indians in California never traveled about and never learned new ways of living. They had no animals of any kind to work for them. Men cannot travel far on their own feet, carrying all their things on their own backs. The Spanish people never could have made that long trip up from Mexico without their good horses to ride and their donkeys and mules to carry the things they needed.

“The Spanish people were wise in the care of animals. In this pleasant land, with its rich pastures, they soon raised hundreds and thousands of horses and mules. But they were not very clever at making wagons to haul things or good coaches

to ride in. If they had made them, what good would they have been? There were no roads in California!

“The missions and presidios and little towns were far, far apart in this great land. It takes hard work and many men working together to make good roads. So the Spanish people just rode their horses and carried what they needed on mules and traveled on trails from place to place in California. It was always a terribly long hard trip back to Mexico, even after they learned the best trails to take. It was always a terribly hard trip by the sea. So in the old Spanish days California was almost as sleepy as when the Indians lived here alone. The first Spanish people lived and dressed almost as simply as the Indians did.

“But after a few years, some new travelers reached our California shores—the Americans in the Boston ships. You see, the Americans knew how to build fine sailing ships. They were such good sailors that they didn’t mind the long trip around the Horn and up the stormy California coast.

“They brought to California all kinds of useful and pleasant things, and they traded them to the Spanish people for their hides and tallow. California waked up a little and learned new ways from the American sailors and traders. Life was easier and pleasanter because the Californians had

a way to sell what they raised and to buy the useful goods from Boston.

“Trading the things we raise for other things that we need from other people—this is called commerce. But commerce, of course, can only come by traveling. People here make or raise something. Then they travel and carry their goods to people over there, who make or raise something different. They trade goods, and both are happier and more comfortable because they have this chance to trade.

“You see, then, roads, and ways to carry things, change our lives for us. The story of travel and trade is almost as important in California as the story of water that we have been telling all these days. Speaking of water, do you remember anything in our stories that would make you think water was important in the old Spanish days as a way of traveling in our land?”

“Yes,” said Barbara. “In the story about Great-grandmother, you said her father sent the furniture for her new home up from San Francisco by a boat.”

“Oh, yes,” added Jim, “and Great-grandfather killed the cattle and dried the hides and melted the tallow down by a creek on his ranch. They put the hides and tallow on a raft and took it to Sutter’s Fort and put it in boats to send to San Francisco.”

“Good! You do remember that story. Well, on

all the ranches they used creeks and rivers as much as they could to carry their hides and tallow to the coast where the Boston ships came to get them. So, Barbara, your friend water, even in those old days, was helping men in this business of traveling and commerce, besides helping them to farm.

“Now who can remember what was the next trail and who were the next travelers who changed our life in California?”

“The fur trappers,” cried David. “Those wise old fellows, slipping along through the mountains after the beavers, until they had crossed the Sierras and found our Great Valley. Then they went back and told the people in the settlements how splendid it was!”

“And then the first immigrants came,” said Betty. “They found the first trail across the desert and over the Sierras.”

“Then thousands of immigrants came later, after gold was discovered. All those Americans that came traveling over that trail changed California sure enough!” said Jim.

“They certainly did. As they came, thousands of them, as you said, little by little, working together, they changed that long dangerous trail into a road. It was still a very hard road to travel, over the desert and mountains. But they found the best ways to go. They made rough bridges and cleared

away trees and brush and rocks. Finally people could come all the way into California with their covered wagons and their ox teams.

“It was at last a road, not just a trail. It was this road, and the patient oxen and the stout wagons, that changed the story of California from a sleepy Spanish land to a busy American state. Of course the ships, too, did their part and brought hundreds of gold hunters and settlers. But the old immigrant road did most to change our California home to the land we know today.

“Now the gold hunters began to fill all the gulches and canyons of the Sierras with their camps and rough little mining towns. Almost the first thing they had to do was to build roads of some kind between the mines and the places where the miners got their food and tools and all the things they needed for their work. Where do you think they went, these trails and roads from the mines?”

“To San Francisco?” guessed David. “That is where the ships brought things from the East, so I guess that is where the miners went to get what they needed.”

“I don’t believe they packed stuff clear from San Francisco up into the mountains,” said Jim. He was looking at the map, and the broad blue lines of water that John had painted. “I think they did

just what the old Spanish ranchers did. They carried everything by water as far as they could. Did they have boats, Granddaddy?"

"That's a splendid guess, Jim. Of course it is always easier to carry things by water, if you have a good big river, than to pack them on mules or haul them in wagons. It's true there were very few boats at first, but they got them or built them just as fast as they could. Sailboats, even rowboats, and steamers were soon going busily up and down the rivers, carrying freight for the camps and towns in the mountains. Look at your map, and remember our story of the mining days, and see if you can guess where the boats stopped and unloaded."

"Sacramento and Stockton!" All of the children guessed that answer easily, and David added, "I suppose then the roads from the mines went to Sacramento and Stockton, whichever was nearest, instead of San Francisco."

"Yes, and then what happened to these places? You remember, before gold was discovered, there was Weber's ranch where Stockton is now, and Sutter's ranch and fort where Sacramento grew up. What changed these ranches to busy towns? It was travel.

"The boats traveled up from San Francisco full of freight and passengers. They had to have docks where they could tie up and unload. They had to

have houses or sheds to put their freight into, and hotels or camps for the passengers. Then the freighters who traveled down from the mines had to have corrals and barns for their animals. Some one had to build houses and barns. Some one had to cook for the people that came and went. Stores with food to sell were started. Then all of a sudden you have a town, with all kinds of people doing all kinds of things for each other."

Barbara began to laugh. "Granddaddy, I know now why we didn't go to San Francisco today," she said. "Before we went to see the city, you wanted to show us what made cities start, didn't you?"

"You're exactly right, Ducky. Now you see how roads, or ways of travel by land or water, make towns at the places where people stop to trade their things. Yesterday we found out that towns grow large if they are in places where people can use the power of our valley giants to make things. Whenever a town starts in a place where ways of travel cross or change, so that people stop there to trade, and when this same town is in a place where the giants are near by so that people can make things, that town grows to be a great city.

"There are two long words we use for such a city—we say it has commerce and manufacturing. That just means it is in a good place to trade things

and to make things. So Barbara is right, I wanted to tell you about ways of traveling so that you would understand more about our California cities when we went to visit them.

“For many years after gold was discovered, almost all the things that were needed in California came here by ships. These ocean ships unloaded at San Francisco, so the little town of Yerba Buena soon grew to a city, as I told you in our mining story. Then, as you said, the river boats took the freight to Sacramento and Stockton.

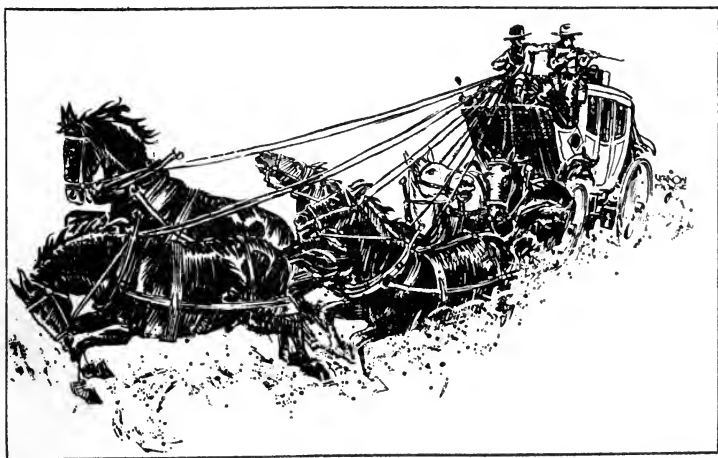
“Up from these two river towns, up and up into the high Sierras, went the trails to the mining camps. Mule trails they were at first, then little by little they were built into rough roads. The long lines of pack mules, winding along the side of canyons and over bridges, were followed by teams of mules hauling big freight wagons.

“Then came stage coaches, with fine horses and clever drivers, that took their galloping teams and rocking coaches along those dangerous roads at top speed. But they almost never spilled their precious loads of passengers and—well, I nearly told you the answer to my next question. We’ve been talking about towns and trade. What do you think went down those mountain roads to trade for the food and machinery and tools that were hauled back to the camp?”

“Gold, gold!” cried the children. “Did the stages carry the gold?” asked John.

“Yes. Their most important and dangerous duty was to carry safely down to the cities the precious yellow dust and nuggets. In each little mining town there would be a store, built strongly of the mountain rocks, with iron doors and iron shutters to close the windows. Here the miners brought their gold for safe keeping. Here it was weighed and packed into strong iron boxes that were fastened under the driver’s seat on the stage coach.

“Beside the driver sat a guard, his gun on his knees. You may be sure that at the end of each trip the driver and the guard were happy when they handed over the treasure box to the express company in Sacramento or Stockton. For you remem-



ber what a wild and lawless country California was in those days. Men who were too lazy to work for their own gold often turned into bandits and made their living robbing travelers. Sometimes they tried to rob the stages that carried the gold. Once in awhile they would get the treasure chest and would take, besides, all the valuable things the passengers had with them—gold dust or money, watches, and jewelry.

“That is why David was happy when I said this was going to be a story about traveling in the old days. The bandits made it dangerous and exciting to travel then. But we must go on to tell about more important things than robbers.

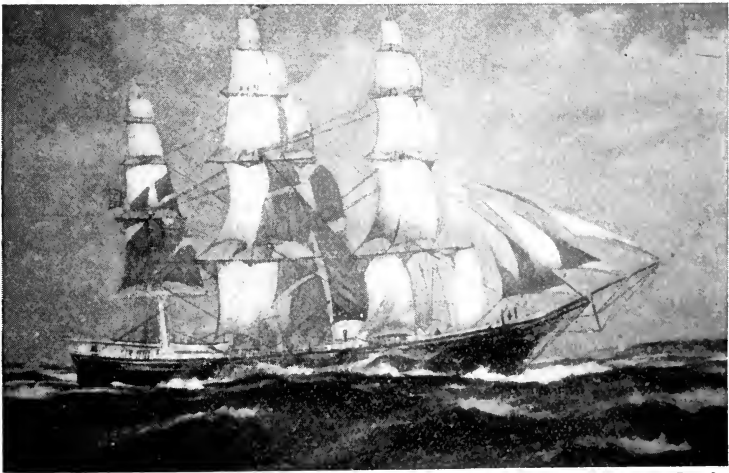
“You remember that just about a year after the gold rush began, California became a state in our United States of America. By this time most of the people in the new state were Americans. Their friends and relatives were back in those far-away American states. They wanted to have letters from their old homes. They wanted to send letters and money back to their families. We were part of our Union, and very exciting things were happening to the United States. Soon a great and dreadful war was begun.

“But here were the California Americans, far, far away, with the same old deserts and mountains and the same old stormy sea, hiding them from the

rest of the world. It took weeks and weeks for letters or newspapers to reach them by the ocean trip, and of course you know how slowly the ox teams traveled the long hard trail to California.

“But now every year the old trail grows better. Men work together, all along those two thousand miles, to build bridges, to cut down forest trees, to widen and level the old trail until at last the stages can travel over it.

“How they did travel! Six or eight horses—fine strong horses—dashed at a full gallop, the stage rocking and leaping, the driver cracking his long rawhide whip, the guard sitting beside him with his gun ready for robbers. It was a wonderful and



—Courtesy Wells Fargo Bank.

“Flying Cloud,” one of the wonderful “clipper ships.” She made the trip from New York to San Francisco in eighty-four days.

exciting thing to see them come dashing into Sacramento after that long two thousand miles across desert and mountains.

“They changed horses every ten miles. All along the road were stage stations where horses were kept ready to jump into the harness as fast as the tired teams were taken out. They carried the mail in twenty-four days!

“Still, the Californians were not satisfied. Twenty-four days was too long to wait for letters from home! Now across the plains and mountains comes flashing the bravest, gayest spirit of all the old California days. It is a young man. He seems only a boy. He is slim and light, but how hard his muscles are! How strong his young hands, holding the reins of his pony! His face is brown from sun and wind. It is only a boy's face, but his eyes are brave and steady, his mouth is firm.

“The pony he rides is a racehorse, light and swift. Brave hearted, like his rider, he is ready to meet danger. He is ready to go on and on, no matter how hard the road or how weary he may be, or what danger may lie in wait.

“This is the Pony Express. Under the light saddle the precious mail is strapped. The pouch is small, the letters are written on the thinnest paper. Through sunshine, clouds, or midnight blackness races the Pony Express! Storms, raging rivers,

Indians shooting at them, all dangers are met and forgotten. They carry the mail!

“Ten miles or more apart are the stations where fresh ponies and fresh riders wait. As one rider comes in, another catches the mail pouch and dashes on across the plains or snowy peaks. Eight days from the starting place back East they race into Sacramento!

“It almost seems as though the Californians would be satisfied. But were they? Not even for one day. For men were dreaming, planning, talking together, and exploring trails. They were dreaming of something that seemed so impossible that other men said they were crazy.

“They were planning a railroad, a strong iron



—Courtesy Wells Fargo Bank.

Pony Express rider, escaping from bandits.

trail across that cruel old desert, over that terrible tangle of high snowy peaks, down into our California home. An iron trail to bring us at last close to the world outside, to bring us news, letters, men and women, and all the things that we needed. An iron trail to carry out to that other world the grain and fruit and good things that we raised or made in California.

“It seemed impossible, but they did it. If men will work together it almost looks as though nothing could stop them. This time indeed it needed more than just the Californians to work together to build that railroad track. Our American Government had to help. Thousands of Chinese workmen came from China and helped.

“At last the tunnels in the mountains were dug, the roadbed was cut on the side of the cliffs, snowsheds were built to keep the deep snowdrifts off the track, and the tracks were laid. Trains ran all the way from far-off New York right into Sacramento.

“Now in truth we have a new California. We are no longer a hidden land, reached only by the bravest hearts, with danger and hardships. We are a great, rich, happy land, to which men come easily and from which we easily send the things we raise and make, and bring back whatever we need to make life comfortable. Men working together at



—Courtesy of the Southern Pacific Company.

The iron trail conquers the desert and mountains. What stories of the old trail can you see in the smoke of the locomotive?

last conquered the deserts and mountain peaks and made us part of the busy, interesting, great world.

“Now let’s look a little at some of the changes the railroad made. Let’s think first about our valley farms. The old wheat farms did well enough with ships to carry away their grain and to bring back the things they needed. Ships were slow, it is true, but wheat does not spoil. There was no hurry.

“You have already heard the story of irrigation and how water changed the wheat ranches into fruit and dairy ranches. It is true that a great deal of this fruit was used in our state. But soon there was so much fruit that some had to be sold. Swift trains carried the fresh fruit away to far-off cities, and it was sold before it spoiled.

“With this good quick way of selling their fruit, farmers knew it was safe to plant more orchards and vineyards. So mile on mile the ditches spread and the orchards followed, while the wheat fields grew smaller. In the same way the railroad helped the dairy man to sell his butter, and the vegetable farmer to sell his melons and potatoes and many other crops.

“It is true that water changed our valley to the busy, happy world it is today. Still, we must remember that railroads did their part to build up the valley farms and orchards.

“Then, too, the railroads made our cities grow.

Sacramento and Stockton were still busy trading places, where water travel and land travel met. Sacramento was especially an important trading place. Here the old immigrant trail had ended and the stage coaches finished their run here. Here the pony express rider brought his precious load and here at last was the end of the great railroad across the mountains. Here to Sacramento came the gold from the mines, the wheat and the fruit from the farms. And here came the boats from San Francisco Bay.

“It was such a good place for trade, and it was so easy to come here from different parts of our state, that it became our Capital city. Here the men come who make our laws, and our governor lives here.

“After awhile the railroad was built on down to San Francisco Bay. Soon railroads were built into the San Joaquin Valley and up the coast country and down the coast to Los Angeles. All these railways came to San Francisco Bay. Here to that wide safe harbor came ships from all over the world.

“Today the new ways of travel, the ways you children know best, by paved roads and automobiles and by roaring airplanes, all lead to San Francisco Bay. Here, day after day, come motor trucks and railroad trains, river steamers and river

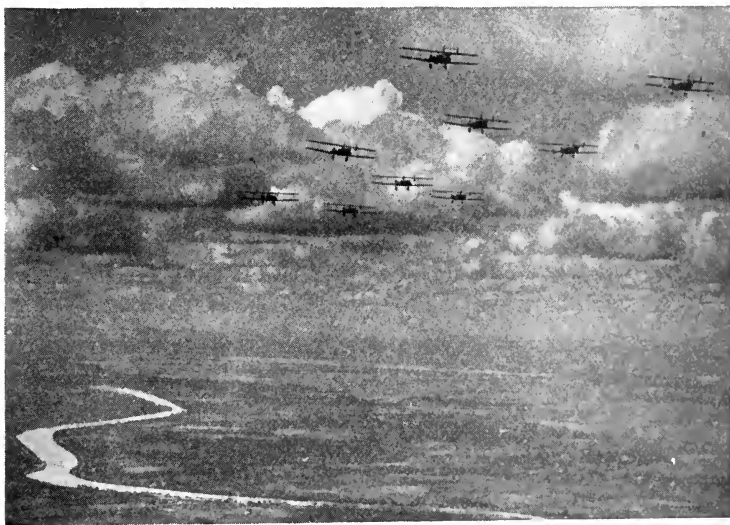


He carries the mail!

barges, bringing from our Great Valley all the things we raise and make.

“Here to San Francisco Bay come the valley giants—electricity, petroleum, and gas. And here people come to live—thousands and thousands of people. Many work in factories. Even more of them are busy trading. They take the things our valley sends them and load them on ships, or sell them in stores. They unload the ships that come from far away and send us what we need from distant lands.

“They are busy, these thousands of people in the



—Courtesy Sacramento Chamber of Commerce.

Going down to San Francisco Bay. Airplanes above Sacramento River and the Great Valley.

bay cities, in manufacturing and commerce. They aren't just sitting around, Jim, eating the things we raise on the farms. They are doing even more important things than trading and manufacturing—but that will be tomorrow's story.

“This is the end for today, and here is something for you to remember. Water made our valley farms rich and busy. Roads and the valley giants make our cities rich and busy. But the farms cannot get along without the cities and the cities would never be here at all without the farms. We have to work together, farms and cities, to make life comfortable and happy for us all.”

WORK AND STUDY PLANS

Things You Can Do Alone

If you live in the country, write out all the things you can think of that cities have done to make your life comfortable or interesting.

If you live in a city, write out all the things you can think of that farms have done to make your life comfortable or interesting.

Here are the names of some cities in our Great Valley—Sacramento, Stockton, Red Bluff, Chico, Oroville, Marysville, Fresno, Bakersfield, Visalia.

Copy these sentences and in the blank spaces write in the name of the city that you think belongs there. It will be one of the names in the list above.

1. is a large city because the country around it is very rich. It is delta land made by the Kings River. This city is famous for its raisins.

2. is a large city because it is the stopping place for boats from San Francisco and it was in the beginning the stopping place for the railroad across the Sierras.

3. is a large city because it is the center of a rich oil district.

4. is a large city because the boats from San Francisco come here to unload their cargoes and to load the products of the San Joaquin Valley farms.

5. is a city on the Feather River. It is famous for its orange orchards.

Things You May Do Together

Make river steamers and barges to put on your valley rivers. Paint on your map the most important railroad lines that go through the valley to San Francisco Bay. Make small railroad trains to go on some of these lines.

Paint in the most important highways leading through the Great Valley to San Francisco Bay. Make small automobiles and trucks to put on the highways.

Paint the most important aviation fields in the Great Valley and near the bay. Make a biplane and a monoplane and a hydroplane to put above these fields.

Make houses and factories, churches and schools, to show the cities of the Great Valley and of San Francisco Bay.

Important Facts You May Need

Carrying things from one place to another is called "transportation."

Trading things is called "commerce."

Men have carried things on their own backs and by packing them on horses, donkeys, mules, camels, llamas, and elephants.

They have carried things in carts or wagons or sleds hauled by dogs, horses, donkeys, mules, oxen, and reindeer.

Today we travel and transport our things by the power of steam or gas or electricity, in trains, automobiles, or airplanes.

Travel, transportation, and commerce teach men new ways of living.

Books You May Want to Read

“In Old California.” Fox. Pages 128 to 143.

“California the Golden.” Hunt. Chapter XXXI.

“California History.” Wagner and Keppel. Chapter XXX.

“History of California.” Bandini. Pages 185 to 188.

“Boys’ and Girls’ California.” Salisbury. Pages 173 to 176.

“The Ways We Travel.” Carpenter.

CHAPTER XIX

DOWN TO SAN FRANCISCO BAY

There could be no mistake about it, next morning, when the children met. They were going somewhere, and very plainly they were going to the city. How fresh and sweet the girls looked in their best dresses and hats! How fine and dignified the four boys were in their new suits! They were rather quiet. Going to the city in one's very best clothes seemed no time for skylarking or shouting. The big car had been freshly polished, too, and here was Granddaddy looking so handsome in his city clothes that even Barbara felt a little shy of him.

"There's room for us all if you sit tight and don't squirm," said Granddaddy. While Daddy carefully strapped the suitcases on the trunk rack, the children took their places, goodbys were said quickly, and they were off.

"We'll go through Sacramento and take the river road," said Granddaddy.

The first stop he made was in the court of the Capitol, beside the lovely fountain. "Our own city has been a good place to teach you how cities grow through travel and trade. The stories I have told you, you can find again if you look for them here in Sacramento. There is a museum now in Sutter's

old fort. There you can see many of the things the old Spanish Californians, the immigrants, and the miners used. Pictures in our Capitol building tell the same old stories. Sacramento will be a good place to start our new story about cities.

“That day that Jim and Barbara and I went down to San Francisco, we followed the trail of the waters down to the sea. You have been learning how those waters give us the riches of our valley. Today we shall follow the trail of our riches, as they, too, go rolling down to San Francisco Bay.

“Here in Sacramento, where the mountain and valley roads meet the river, many of the valley riches stop awhile and are changed into different shapes before they go on to the bay. Some of the biggest canning factories in the world are here. Fruit and vegetables come here. With the help of the valley giants we shut them up in cans. Now they will keep for months and months, and can go all over the world.

“Cattle and sheep and hogs come here. Their meat is canned or dried or frozen, so that it can be shipped a long way and still be good to eat. The valley grain ranches send us wheat and rice, and we turn it into flour and make it ready to use in other ways. The mountains send us rough lumber. We turn it into doors and windows and shingles and smooth boards.

“All the people coming here to trade and to work in our factories have made a big city. It is a busy and pleasant place for men to live. Now we’re off, to follow the trail of the valley riches as they go on down to the bay.”

As they went spinning out of the city they passed by several blocks of buildings, with railroad tracks running between them and engines busily moving cars back and forth.

“These are railroad shops,” said Granddaddy, “where cars and engines are repaired and kept in good order. In the old days all the people of the valley and all the gold and all the crops went down to the bay by the river boats. They still go that way. But now there are railroads, too, to carry us and our things. There are electric trains and trucks and automobiles and auto stages, all rolling down to San Francisco Bay. Just keep your eyes open and make a list of what you see on its way to town!”

It certainly kept them busy. Now the road came out on the wide levee of the river bank. Here was a big flat barge loaded with sacks of grain, and hauled along by a small tugboat. Here was a little wharf loaded with bales of hay waiting to be shipped. They passed boats whose cargoes were hidden out of sight, but Granddaddy said very likely they were loaded with cases of canned fruit

and vegetables. They passed trucks filled with crates of fresh vegetables and fruits.

They passed a great tank truck and trailer. "That is milk from our valley dairies, in refrigerated tanks. Even on this hot day it goes safely down to the cities by the bay," said Granddaddy.

John was not so interested in the trucks and boats as he was in the big dredges that they saw in some places, working in the river. Granddaddy explained to him how the dredges sucked up mud from the river bottom and poured it out on the shore.

"You see, these big fellows do three jobs at once. They take mud out of the shallow parts of the river



The valley riches going down to San Francisco Bay.

and that makes the river deeper and better for boats. They pile the mud on the shore and that makes the levees higher and stronger to hold back the floods. When the levees hold the water safe in the river, the land behind them is dried and makes these fine rich farms."

They were in the delta island country now, passing fields of asparagus beds and other vegetables. At last they rolled out across a very fine stretch of farm land, away from the river and the levees. Suddenly there was the river ahead of them!

"How did it get over there, Granddaddy?" asked Jim.

"It didn't," answered Granddaddy. "Use your wits and remember our map."

"Oh, I know!" cried John, "It must be the San Joaquin River! Is it? Is this where they join?"

"They join just a little way from here, sure enough. Now look ahead."

Right ahead was a wonderful high bridge across the wide San Joaquin. A few moments after they had crossed it they were spinning along the shore of Suisun Bay.

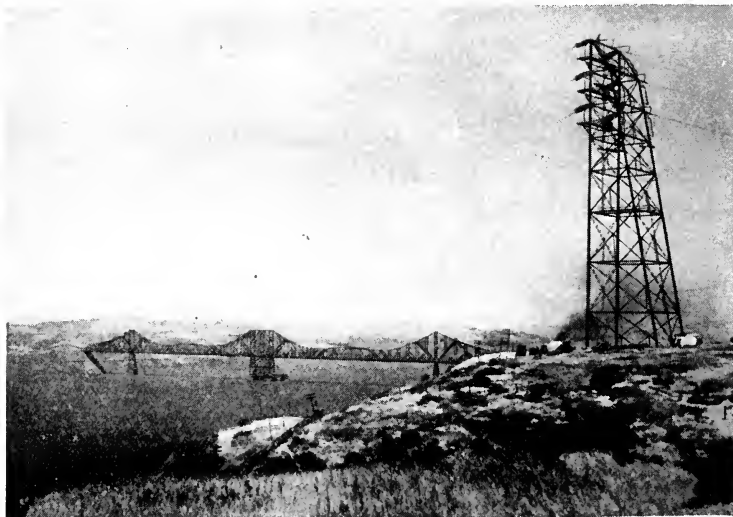
Now they began to see big ocean vessels coming up with their loads from distant lands.

"Here is a ship from the Hawaiian Islands," said Granddaddy. "She is loaded with raw sugar. Here at Crockett, in these big factories, it will be

made into the kind of sugar we use. Much of it will go in the river boats up to the canneries in Sacramento. It will come back in the river boats in cans of fruit, to San Francisco. Then it will be loaded again into ocean ships and go all over the world.”

Now they passed the great Carquinez Bridge. “That bridge carries another highway that comes down from Sacramento to the bay, on the west side of the river,” said Granddaddy. “We came down on the east side.”

“Look,” said John, pointing across the hills toward the east, where a high steel tower stood against the sky. “That is one of our valley giants



—Courtesy Great Western Power Company.

Carquinez Bridge and a great transmission tower.

coming along with us, isn't it, Granddaddy? I wonder which power house up in the Sierras this line comes from."

"I don't know," answered Granddaddy. "But look, there comes one of the other valley giants, though you can't see him coming. He is underground until he gets here."

Among the hills where they were driving now they began to see huge round tanks, low on the ground, and shining like silver in the western sun. "These are storage tanks for the petroleum that comes in pipes underground from the San Joaquin Valley. In factories here at Richmond the crude oil is refined, and kerosene and gasoline and machine oil and grease are made from it."

After Richmond came Berkeley. They began to climb. City streets and houses fell behind them. The road went up into the hills, and along the hillside. Lovely eucalyptus trees followed them as they flew along. Between their tall white trunks the children caught glimpses of the wide bay. Beyond the islands they saw the Golden Gate.

Granddaddy stopped on a high point, so high that no trees hid the view below them. Between the hills and the shore of the bay they saw a level plain, stretching along the bay for miles and miles. Everywhere, as far as they could see, it was covered with houses.

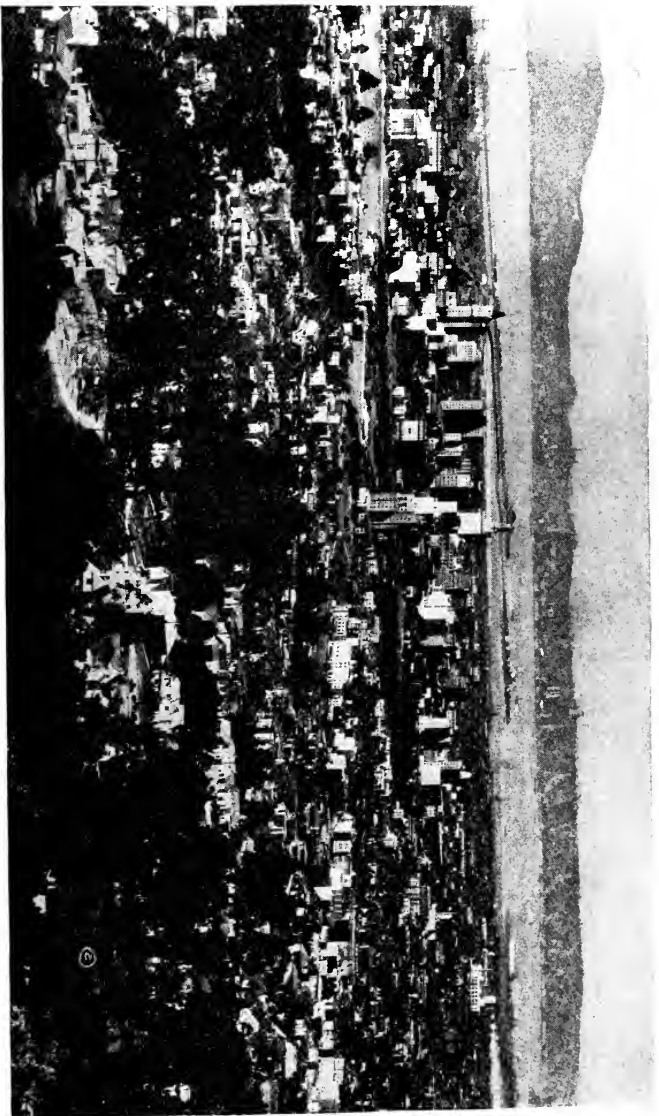
“Is it all one city? Is it all Berkeley?” asked Barbara.

“No, there are three cities there below us—Berkeley, Oakland, and Alameda. But the cities touch each other. All this eastern shore of San Francisco Bay is like one great city. You can see what a good place it is for a city, because it is such a long level piece of land.

“This plain was dotted in the old days with oak trees, so the first city to grow up here was called Oakland. It was a good place for men to gather, for trade and for manufacturing. At first Oakland did not have a very good harbor for large ships. The water was not so deep as it is on the San Francisco side. But as the city grew, men worked together and with giant dredges they made the harbor deeper.

“Now the largest ships can come here safely and easily. Ships from the ocean, boats from the valley, trains from far across our land, and all the valley giants meet here in Oakland. There are miles and miles of factories and places where men trade. There are docks and shipyards and railroad yards. Back toward the hills, and in Berkeley and Alameda, there are miles and miles of pleasant homes.

“It is a fine and comfortable place for men to live and work, this sunny plain beside the bay. I drove you this long way so that you could see how big a

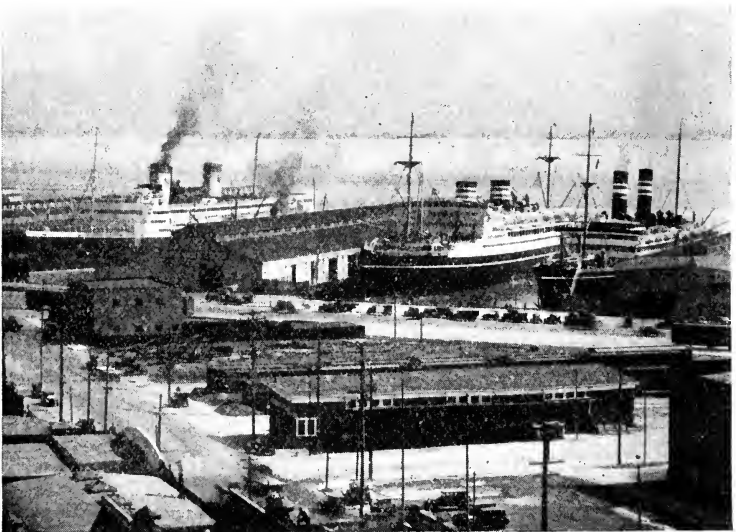


Oakland, the city where ships and trains and the valley giants meet.

city grows to be when it starts in a good place for men to trade and make things.”

Now they drove down into the city, and at last the car rolled out on a roadway built into the water. There were waves on both sides of them, and the wide bay stretched in front of them. At the end of the roadway they drove onto a wharf and then onto a ferryboat. A few moments later Granddaddy was making his way slowly through the traffic of San Francisco.

“This wide street that goes along the shore of the bay is called the Embarcadero,” he explained. “That’s the Spanish word for ‘landing place.’ Al-



—Courtesy Californians Inc.

Docks and ships along the San Francisco Embarcadero.

most every old California town or ranch had its embarcadero, where boats came to load and unload. We will have just time enough before dinner to explore this Embarcadero of the most wonderful port in California.”

As he drove along, the children caught sight of huge ships close to the docks. They rose up into the air like tall buildings, one after another, until the children lost count of them.

After a long slow ride Granddaddy stopped the car. They crossed the street and went out on a great covered wharf, filled with crates and boxes and bundles of every sort. It smelled most excitingly of salt water and tar and coffee and spices, all mixed together. Standing at the end of the wharf, Granddaddy pointed to an island not far out in the bay.

“That is called Mission Rock,” he said, “and it belongs in the story of our valley, the old story of yesterday and the new story of today and tomorrow. Long ago, before these splendid wharves were built, it was hard for big ships to come close to the shore where the water was shallow. The loads of hides and tallow had to be carried out in small row-boats that could come up on the beach to load. That was a good deal of bother. But sailors soon discovered this little island, which was really a rock that went right down into deep water. The largest ship could come close to the rock safely.

“So the old mission fathers brought their hides here to load them into the Boston ships. Later on, the boats and barges from the Great Valley brought their wheat here. Those big sheds or warehouses that you see were built to store wheat in. Then, when the ships from far away came into the bay, they tied up at Mission Rock and filled their holds with our valley wheat.

“Now it is going to be changed, just as the valley crops have changed. Those old sheds are going to be torn down, and men are planning to build here a great refrigerating plant. That is a place where, with the help of our giant electricity, they will chill the fruits we send down from the valley. The fruits will go into the ships so cold that they will keep fresh and good, no matter how far we want to send them.

“Here is another way that our valley giant comes to the city to help the valley farmer, for this refrigeration gives us a chance to sell our fruit to every country in the world. So we plant more orchards and make a better living, back there in the valley.”

Jim smiled a rather crooked little smile. “Wasn’t I a stupid to say that cities were good for nothing?”

“Well, if you were, anyway you are smart enough to see that you made a mistake,” laughed John.

Now they are back in the car. "Tell us, Granddaddy, what all these great ships bring us," asked David.

"Oh, dear, it would be such a long list! First of all, there are the ships that come from our Eastern states. They still bring us, as in the old days, machinery and tools, furniture and clothes. Now they bring us automobiles and radios and pianos. English ships bring us fine woolen cloth and linen. German ships bring us toys and some special kinds of fine machinery. The biggest loads that come to San Francisco Bay are silk, rubber, coffee, spices, coconuts, and bananas—things that we like to have but that we can't raise in our own country. They come here from the hot countries south of us and across the Pacific Ocean.

"In exchange, our Great Valley sends these other countries first of all, petroleum, and the things we make from petroleum. We send fruit—fresh refrigerated fruit, canned fruit, and dried fruit. We send milk from our valley herds, canned or dried into powder, and meat, canned or dried or frozen.

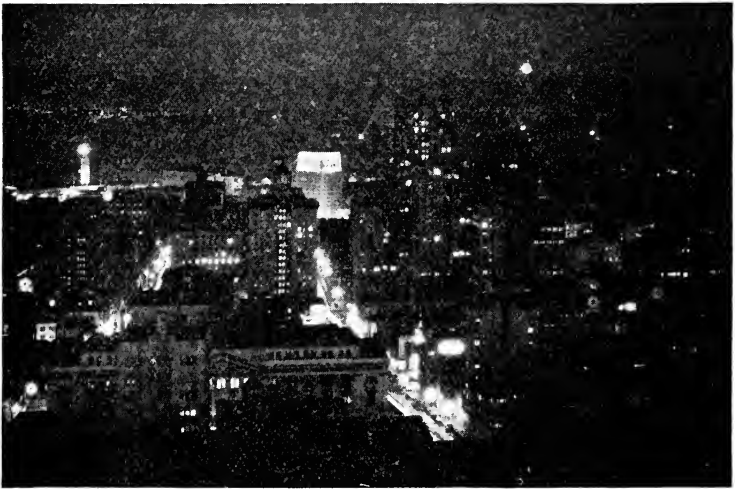
"We still send grain, though not nearly so much as in the old days, and now it goes mostly as flour. And we send some lumber from the Sierras that guard our valley, and some gold and other minerals. But aren't you hungry?"

Of course they were, and Granddaddy guided the

car back along the Embarcadero and up a long steep hill. Here they were, going into a great hotel, porters carrying their suitcases, and Granddaddy asking for rooms for all of them.

After a little freshening up, they found themselves in a great beautiful dining-room. They were hungry, but they were almost too excited to eat. "It's like a fairy tale, Granddaddy," whispered Barbara. "I never saw such big rooms and such splendid things."

"Well, if it is a fairy tale, Ducky, it's all part of the fairy tale of your old friend, the valley water,



—Courtesy Californians Inc.

*The giant from the far away Sierras comes to light the city at night.
This is the way San Francisco looked to the children from the
hotel on the hill.*

and the valley giants. For they bring great riches to the bay cities. Trade and manufacturing increase these riches. The wonderful harbor is a meeting place for ships from all over the world. So San Francisco became a stopping place for travelers.

“Travelers come here from our Great Valley and from other parts of our state. They come from our Eastern states. They come from every other land on earth. Most of them come here to trade. Others come just to see our pleasant valley and our splendid city. So San Francisco has to have many hotels to take care of all these travelers. But now eat your dinner, little travelers, and we shall be off early to bed. Lots to do tomorrow!”

The first trip next day took them down Market Street and into other streets that seemed like mountain canyons—the buildings rose so high on either side. They explored one of these great towering buildings. They raced up and down in swift elevators, and looked far out across the busy bay from the windows of the twenty-seventh floor.

“There must be *millions* of offices in these buildings,” said Jim. “What in the world do they do in all of them, Granddaddy?”

“Well, Jim, most of the men in these offices are working for you and your Dad,” answered Granddaddy.

“Are you teasing me? What do you mean?” asked Jim, looking suddenly cross, for he hated to be teased.

“I mean just that, Jim. In one way or another they are working to sell the things that you are raising out in the valley, you and thousands of other farmers. Then they are working to buy for you all the things you need on your farm and in your comfortable home.

“You and your Daddy are just as busy as you can be raising the fruit and milking the cows. You haven’t time to carry your fruit to market, and freeze it, or can it, and find a buyer. You haven’t time to go shopping all over the world for the things you need and that make life pleasant. The men in these offices are doing all that work for you! Now I’ll show you some very busy people who are working for the girls.”

They went up some more steep hills and got out of the car in a narrow street. The girls were almost breathless at the sight of the gorgeous windows of the shops. They were filled with silk coats and wraps and shawls, gay china, jewelry, and carvings of ivory. There were a million things, and every window was more exciting and beautiful than the last one. “It’s Chinatown, isn’t it, Granddaddy? Mother has told me about it,” cried Betty. “Oh, may we go in and explore?”

“Of course we may. And don’t forget that in the old days of my Spanish mother it was China who sent us our first beautiful things. She sent us silks and shawls and linens, jewels and carved shining combs for dark heads, bright-colored dishes and fine tables and chairs. China gave us our first gifts of beauty in return for the otter furs we used to send her. Now we send her petroleum and fruit, and she is still sending us back lovely things to make our homes gayer and our ladies more beautiful!”

Their next stop was far away from Chinatown, clear across the city, in Golden Gate Park. There every one of the children found something wonderful to make them shout, “Oh, look!” There were great wide lawns, trees of more kinds than they had dreamed were in the whole world, flowers, and handsome buildings.

They visited a strange building full of glass tanks of water. In the tanks queer and lovely fish with a thousand shapes and colors swam before their eyes. They visited another building, where every sort of animal that ever lived in California was shown in small glass-covered rooms. They looked so natural among trees and grass that it almost seemed they were alive.

“Granddaddy, we could study here a week, couldn’t we, and learn all about our California animals?” said David. But David was even more

excited when they visited the great museum. There he found pictures and clothes and armor and swords and spears of all the different people he had ever met in his history stories. "We could stay here a *year*, I guess, and find something new every day!" he said.

Next day there was another museum to visit, and more to learn as they went up from one floor to another. Each floor showed them how some race in far-off lands and long ago had lived. At last they came to the topmost floor, and as they went into a large room all the children shouted at once, "Why, we're home!" "It's our own Indians!" "It's like our village—oh, what fun!"

Sure enough, there were all the things that Granddaddy had shown them in his books and had taught them to make. How much more beautiful and interesting were these real things that real Indians had made! They ran from case to case, happy that they knew so well what all these Indian things were for.

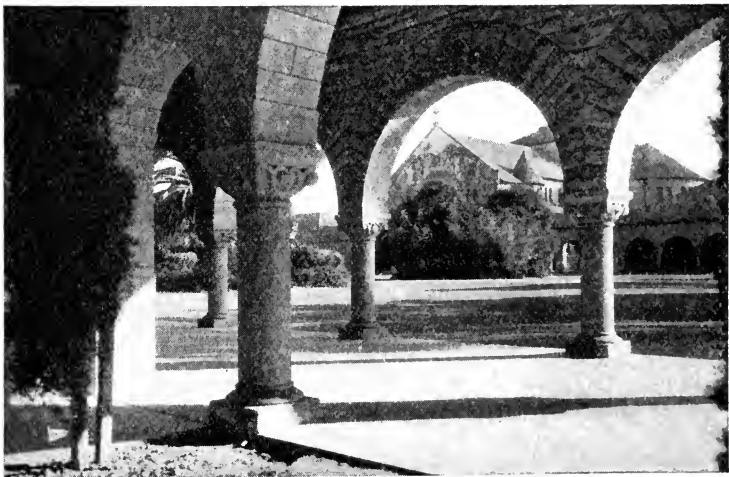
"Here's a dance head-ornament!" "Here's a beautiful shell skirt!" "Oh, look at this bow and arrow!" "Here's a set of sticks for the guessing game!" Granddaddy could hardly get them out of the room when closing time had come.

Another day took them for a drive down to Stanford University, not far from San Francisco.

When Granddaddy had shown them all the buildings, and they were resting in the lovely inner court that is called the "Quad," John said, "Granddaddy, is there anything in the world that you couldn't learn here? I never knew there were such splendid places to learn how to be an engineer and to learn about engines and motors and airplanes and everything.

"And books—oh, just think of the *miles* of books in that library, and all the men who teach you about books and history and how to write. Oh, Granddaddy, can I come here some day?"

"Of course you can if you want to, David. All of you, I hope, will go to college either here or in our other great university at Berkeley. Jim will like it



The "Quad" at Stanford University.

better at Berkeley. All kinds of farming are studied there. Many great buildings are there, just for our farm boys, and many teachers show them how they can be better farmers and how they can best use the good gifts of our California valleys.

“There, too, Philip, if he still wants to be a musician, can make a good start to learn what he needs about music. If he’s really good at his violin, we’ll send him some day to great teachers in far-away cities. Our valley farm will pay for his travel and lessons, and he’ll bring back to our valley the music that will make our life happier and finer.

“The girls, too, will come here or to some other college and learn what they will need to make them more useful citizens. They will come home to make our valley a better place to live in. That is what great universities are for.”

That night (Granddaddy made them take a little nap before dinner), they all went to hear some wonderful music in the Auditorium of San Francisco. This was Philip’s treat, and his heart was beating hard with excitement as the great orchestra began to play. There were singers, too, and although the others did not love the music as Philip did, they felt how beautiful it was. They went away with a happy feeling in their hearts. They were sure they would never forget their first great concert.

“Today is our last day,” said Granddaddy at

breakfast. "I've saved the best trip for the last." The car was soon out in the clear morning sunshine, and they were speeding toward the Golden Gate. They went out through the grounds of the Presidio. Granddaddy showed them where, among the new buildings of our American army, there was still a little piece of the old, old adobe fort that the Spanish people had built.

On around the cliffs they went, and then suddenly they swung up to the top of a hill into an open place before a noble building. It was so beautiful on its high hilltop that the children were silent, feeling how beautiful it was, but not knowing how to say it.



The Palace of the Legion of Honor.

“This is the California Palace of the Legion of Honor,” Granddaddy told them. “It was built to help men remember the brave soldiers that fought and died in the Great War, in the years just before you children were born. It is used for something fine and splendid. All its great rooms are filled with pictures and statues. Some of them are brought here from other parts of the world. Some are painted or carved by our own California artists. Everyone is free to come here and to enjoy them and to study them. Let’s go in.”

They wandered through the long rooms. Barbara’s hand was tight in Granddaddy’s, and for once her tongue was still. She did not even ask questions. For of all the children, Barbara most of all loved beautiful things. She loved pictures. She loved their colors and the things they tried to tell her. She loved to draw and paint although she could not make very good pictures. But she wanted to learn. So in these long rooms of beautiful things her heart was as full of happiness as Philip’s had been last night at the concert. Indeed, all of the children felt that it had been a wonderful morning, when Granddaddy gathered them again into the car.

“One more spin,” he said. “Then we shall bid the city goodby.”

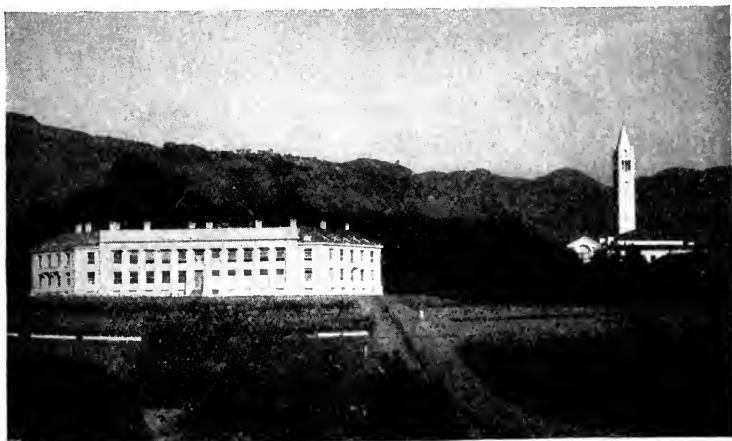
Once again they were climbing. Now they are out on a high hill road, and suddenly all the world

seemed to be lying spread out below them. It seemed an endless city, stretching on and on, streets and streets and streets, on down to the bay. They could see the docks and wharves, the busy ferry-boats and ships here and there, all over the blue sparkling water.

Clear and bright across on the opposite shore were the other cities of the bay—Alameda and Oakland and Berkeley. “That high white finger pointing up to the sky over there is the Campanile, or clock tower, on the campus of our great university,” said Granddaddy.

“I’ll be there some day,” whispered Jim to himself.

“Now say goodby to the bay and to its splendid



The Campanile and Hilgard Hall, University of California. Hilgard Hall is one of the buildings used to study about farms and farming.

cities," Granddaddy went on. "And while we're saying goodbye, tell me, now, what you think cities are good for."

The children were ready enough with answers. "A place where they buy and sell things." "A place to make things." "A place for travelers to stop." They were silent a moment, then Philip said, "A place where they have fine music, lots of it, and all kinds." "Universities, where you can learn everything, are near the cities," added David, "and museums where you see how people used to live." "Beautiful buildings and pictures, that's the best thing of all in the cities!" cried Barbara.

"Yes, all these things are true. Let's put them all together," said Granddaddy. "Let's say, all the riches of our valley come to this city, and here men gather for commerce and manufacturing. Hundreds and thousands of men live close together and work together. Because there are so many men close together, working together, they can do many fine and splendid things that we cannot do in the country because we live scattered far apart. That is why all these lovely things we have visited must be in cities."

"And Jim thought they just sat around in cities and ate up what the farmers raised!" teased the children. Jim started to get angry, but John threw an affectionate arm around his little cousin's

shoulder. "Don't tease him," he said. "Didn't Jim say himself he'd made a mistake? He knows better, now. And, after all, he was partly right. If it wasn't for Jim and the other farmers there wouldn't be any great cities here beside the bay, would there?"

"But oh, Jim, isn't it fun to think of all the things we can do pretty soon? You and your old tractors and plows will be up in the valley and I and my motors, oh, just everywhere! Phil will have his fiddle and David his books, and Barbs maybe will be an architect making fine buildings. The valley and the city will be working together, all of us working together! What fun we'll have, and what splendid things we can do!"

All of the children began to talk at once, each saying what he or she meant to do, soon, when they were grown up. Nobody noticed that Granddaddy was standing off a little way, very silent. No one noticed that there were tears in his eyes.

For looking down over the great busy city, Granddaddy was thinking of his lovely Spanish mother who had ridden up the valley to her new home. He was thinking of his blue-eyed father who had come those weary miles across the desert and the mountains to far-off California. He was thinking of the tiny little settlement of Yerba Buena and of the wide empty plains out in the Great Valley.

He was thinking how, in just the time that he had lived, all had changed, the valley and the bay.

And he was thinking, as he listened to the children talking, "It is their world now—their California home. What will they do with it? Will they change it, too? Will they make it a happier and more beautiful and more interesting home than it is now? I believe they will."

Out loud all he said was, "Say goodbye! We're going home."

WORK AND STUDY PLANS

Things You Can Do Alone

Look in the dictionary for the picture of the flags of the different nations. Draw and color those flags that you think might have been on the ships the children saw in San Francisco. Under each flag make a list of the things you think the ship that flew the flag brought to California. Make a list of the things the ship took home again.

If you have been in San Francisco, did you see the lamp-posts on Market Street? Around the base of these metal posts the artist has made a story. Can you tell this story? There are many statues, too, in San Francisco that tell some part of the story of our California home.

Each one in your class might write a letter to the Supervisor of Intermediate Grades in San Francisco. Tell what your class is doing in your study of San Francisco. Ask her to give your letter to some class in the San Francisco schools that is studying the story of California. Ask if some one in that class may write you a letter and tell you the story of the lamp-posts, or tell you about some of the other interesting things in the city, or send you pictures of them.

There are many things in Sacramento, too, that tell about our California story. You might write another letter to Sacramento and ask Sacramento children to tell you about the interesting things in their city. Choose the best letters to send.

Things You May Do Together

Build the Antioch and Carquinez bridges on your map. Take the sailing vessels out of the bay and put in steamships.

If your map is large enough, perhaps you can show some of the places the children saw in San Francisco. Find pictures of the docks, the Ferry building, the Telephone building, the Russ building, the Fairmont Hotel, the Legion of Honor Palace. Make small models of these for your map.

Important Facts You May Need

Nature has given California almost everything that we need for comfort and happiness. There is one important thing, however, that we do not have. That is iron. Iron is found in mines in many parts of our Eastern states. But there is almost no iron found in California.

For this reason the most important things that ships bring us from the Eastern states and from Europe are things made of iron and steel, especially tools and machinery. We have some factories in California to make things of iron and steel, but we have to get the iron from some other state.

So one of the most important kinds of business in San Francisco is buying for us the things we need that are made of iron. The most important things that we trade for the iron products are our fruits and our petroleum.

Books You May Want to Read

“Seeing California.” Paden. Pages 148 to 150.

“Boys’ and Girls’ California.” Salisbury. Pages 150 to 153.

“California History.” Wagner and Keppel. Pages 292 to 303, 311 to 315, 318 to 322, 324 and 325.

CHAPTER XX

THE REDWOOD HIGHWAY

“Shall I bring the children over next week, Father?” Aunt Jane was gathering the cousins into her car. Tired and happy, they had just rolled into the home ranch, back again after their wonderful days in the city. When they heard Aunt Jane’s question they all looked at Granddaddy. Were their stories ended? Or were there still more things to learn about their California home?

Granddaddy did not answer Aunt Jane at once, but looked at the children. “What do *you* think?” he asked. “Are you tired of our stories? Don’t you think we have come to a good stopping place?”

“Oh, no, we’re not tired of them!”

“I wish they would last until school begins!”

“And there’s our map,” said John. “Remember what big pieces of it we have never painted? Aren’t we going to finish our map?”

“Well,” said Granddaddy, “there are still several weeks of vacation left, and there is still a good deal of paint in our pots. So if you will bring the children again next week,” he said to Aunt Jane, “I’ll try to find some new stories to tell.”

“I hope there’ll be some more trips, too,” said Betty to Jeanne, as they got into the other car.

Betty had her wish. Monday morning early, when they gathered again at the home ranch, there was Granddaddy waiting, ready for another trip.

"It's camping this time, I can tell that! Look at the tent and bedding rolls strapped on the car!" cried David. "Oh, hurrah for Granddaddy!"

Even Jim and Barbara did not know what Granddaddy was planning. "Are we going up to the mountains again?" asked Barbara.

"We're all going out to the granary!" he answered. "And be quick about it, too!"

This seemed a surprising thing to do, when the car was all ready for a trip, but the children obeyed promptly. "Now," said Granddaddy, "look at your map, and tell me where you think we ought to go exploring."

John was all ready with an answer. "To the coast country, Granddaddy," he said. "We live in the Great Valley, and we've had some trips to the Sierra Mountains on one side. Now we ought to explore the mountains on the other side, and paint that part of our map."

The children agreed, and Jim said, "Let's cut right across here and go into the mountains and explore the north part first, and then go all the way down the coast to Mexico!"

"That's a long way, Jim! We might not get back in time for school. And what do you children

think about Jim's idea, to cut across the valley from here into the mountains? Could we do it?"

"I don't believe we could," said David, looking at the map. "Maybe we could, but look at all these coast ranges that we made. They go north and south, and the valleys go north and south. It looks as though the roads would have to go north and south, too. Are there any roads to go *across* the Coast Ranges, Granddaddy?"

"Yes, there are, David, and we could do what Jim said. There are a few roads that go across, but they are new roads and rather hard to travel. The truth is, you were quite right. The old road, the important road, goes north and south, through the valleys of the Coast Ranges. So we'll take the old road, the one men have traveled on for nearly a hundred years, up and down the north coast country. Now how shall we start our trip?"

The children looked at the map carefully. Then Philip laughed and said, "Oh, I know, we'll go rolling down to San Francisco Bay again, won't we? That's what the valley people always had to do, wasn't it, when they wanted to go anywhere? First they went down to the bay!"

"Philip is right," answered Granddaddy. "Like the old valley people, we'll go down to the bay. But we'll go in the car instead of the river boat. Now fit yourselves in your places, for we're off!"

They came to the bay at the town of Vallejo. "Old-timers would have had to cross the bay in boats," said Granddaddy. "They would have started their trip at Sausalito. But we have a new road around the bay, to the shore that you see over there."

They drove around the head of San Pablo Bay, and soon it was left behind them.

"Now we turn into the Redwood Highway," said Granddaddy. "It is the famous old road that runs the whole way from Sausalito, opposite San Francisco, to Oregon. The first part of the highway runs through Marin County."

"It's not a farm country, is it, Granddaddy?" asked Jim. "It looks too hilly for farming. How do they make a living over here?"

"It certainly is hilly, Jim. It isn't at all like our Great Valley, with its miles and miles of level fields. It has no great irrigation canals, like the ones in the valley. There are no snow fields in these low coast mountains to keep streams running all the year. Still, they do farm, and they make a good living, too.

"Between the mountain ranges are a few long valleys, like this one we are in. And there are many small ones. These valleys have fine fruit ranches. They don't need irrigation. They are so near the ocean that the cool fogs reach them.

“But hillside pasture lands give Marin people their best way of making a living. The sea fog and heavy winter rains make fine grass. It lasts a long time, much longer than the valley pastures. So Marin is famous for its dairy herds, and their golden crop is butter.”

“Here’s a highway sign that says ‘Sonoma County,’ ” said Jeanne. “It’s a new county, but it looks like the same kind of country, doesn’t it?”

“It is about the same as Marin County,” said Granddaddy. “But Sonoma is larger and raises more fruit. It has fine dairies, like Marin, but it uses its grass lands for beef cattle, too, and for sheep. It is famous for its chicken ranches. Petaluma sells more eggs than any other town in the world. So, you see, Sonoma, although it is a mountain county, makes a good living for its people with its farms.”

They went through Petaluma and Santa Rosa and other smaller towns that looked busy and contented. Before long another highway sign said “Mendocino County.” Then a little later they came into a bustling town that Granddaddy said was Ukiah.

“We’re near the end of the day’s trip,” he said. “A few more miles up the highway there is a fine place to camp, and we’ll be ready for supper and bed when we get there.”

It *was* a fine place. The boys helped Granddaddy unpack the tents and set them up, while the girls put up cots and unrolled blankets and made beds.

When everything was ready, Granddaddy said, "Just time for a swim before supper." They scrambled into suits and raced off to the river near by.

After the swim seven damp-haired helpers stood by and carried out Granddaddy's orders. A fire was built, food unpacked, and dishes set out. Something sizzled in the hot pan. "Oh, what a delicious smell!" "Oh, Granddaddy, it *must* be done, I can't wait any longer!" "It *is* done—pass your plates!"

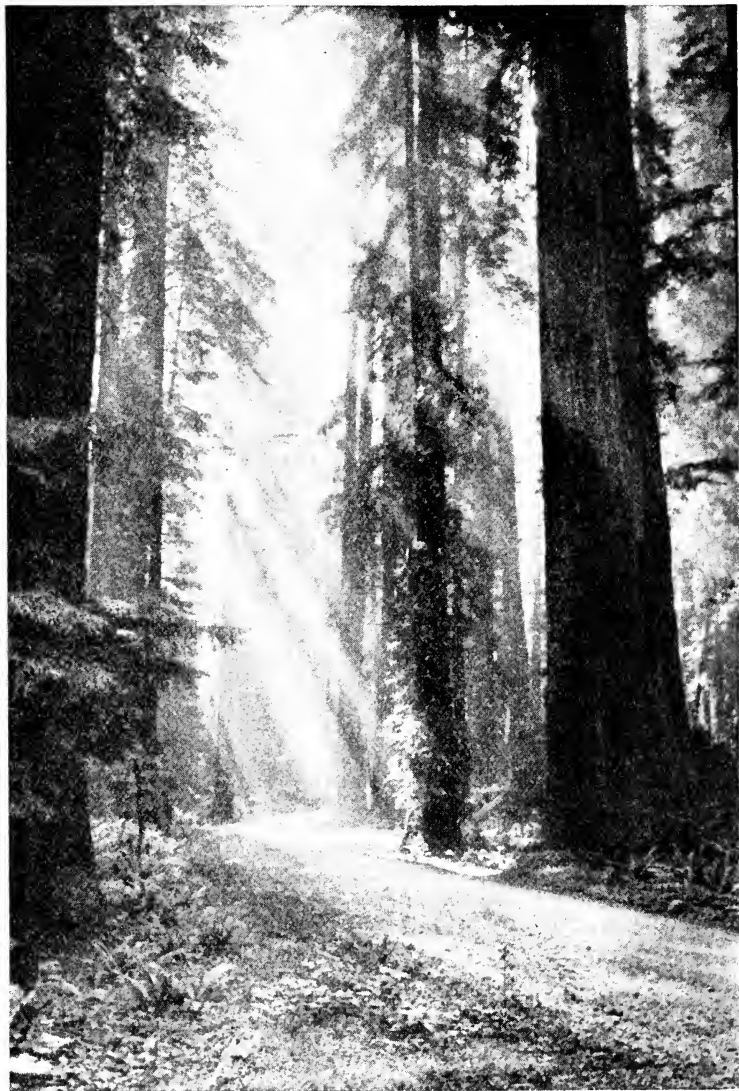
Supper was over and dishes washed. Seven little travelers, tucked in their cots, stared for a few moments up at the stars, through the far-off high tree tops—and were sound asleep.

Next morning they were out of bed early. Granddaddy hurried breakfast and began packing up the camp things.

"It's so lovely here, *must* we go on right away, Granddaddy?" said Barbara.

"I'm afraid so, Ducky, but don't worry. We shall be in beautiful places all day long today. Let's get started, and you will see."

Before the morning was over the road suddenly slipped into a grove of great trees. They were so



—Courtesy *Sunset Magazine*.

A road in the redwoods.

tall, so straight, and so beautiful, with their red trunks and their green crowns far off up in the sunshine, that the children begged Granddaddy to stop.

“Oh, please, mayn’t we stay and explore a little?” they asked.

Granddaddy stopped the car and they scattered among the great trees, calling to one another to come and see this one or that one. Each tree seemed taller than the one before it. The children were excited by the fun of trying to guess how tall they were, or how thick the great trunks were.

But after awhile they began to be quiet, and stopped running about and shouting. They felt serious. “It is almost like being in church, isn’t it, Granddaddy?” said Barbara.

“It *is* like a church,” said David. “Anyway, it’s like pictures I’ve seen of great churches, beautiful ones, built long ago. They have tall straight columns, in rows, like these tree trunks.”

“I don’t know about David’s pictures,” said Betty, “but I know it *feels* like church. You feel serious, and happy too. And I know it is beautiful.”

“I’m glad you feel that way,” answered Granddaddy. “I do, too. I’ve seen the churches David means, and I’ve traveled over most of the world and have seen most of the famous places in far lands. But, believe me, near or far, in all this wide

world, there is nothing more beautiful or more wonderful than these redwood groves in our California home. Do you want to hear their story?"

"Oh, I knew they were redwoods! Remember, you told us a little about them that day we were painting our map. Tell us some more, please!" said John.

"First of all," Granddaddy began, "redwood trees are the largest living things on the earth today. No other tree in all the world, and, of course, no animals, are so tall or so great as our redwoods.

"Then, too, they are the oldest living things on this earth. Some of the redwoods, here in the coast mountains, are more than a thousand years old. In the Sierra Mountains the giant redwoods are older still. Some are three or four thousand years old.

"When Americans came into California, all this long strip of coast country, from Monterey Bay as far as Oregon, was one long forest of redwoods. It was the most beautiful forest in all the world. There was nothing like it in all the world.

"Now most of this splendid forest is gone. The trees have been cut for lumber and sold to build houses or to make fence posts or railroad ties. Where the great trees stood in lovely groves there are today miles of ugly bare land, not even good for farms.

"Men have done foolish things in many lands,

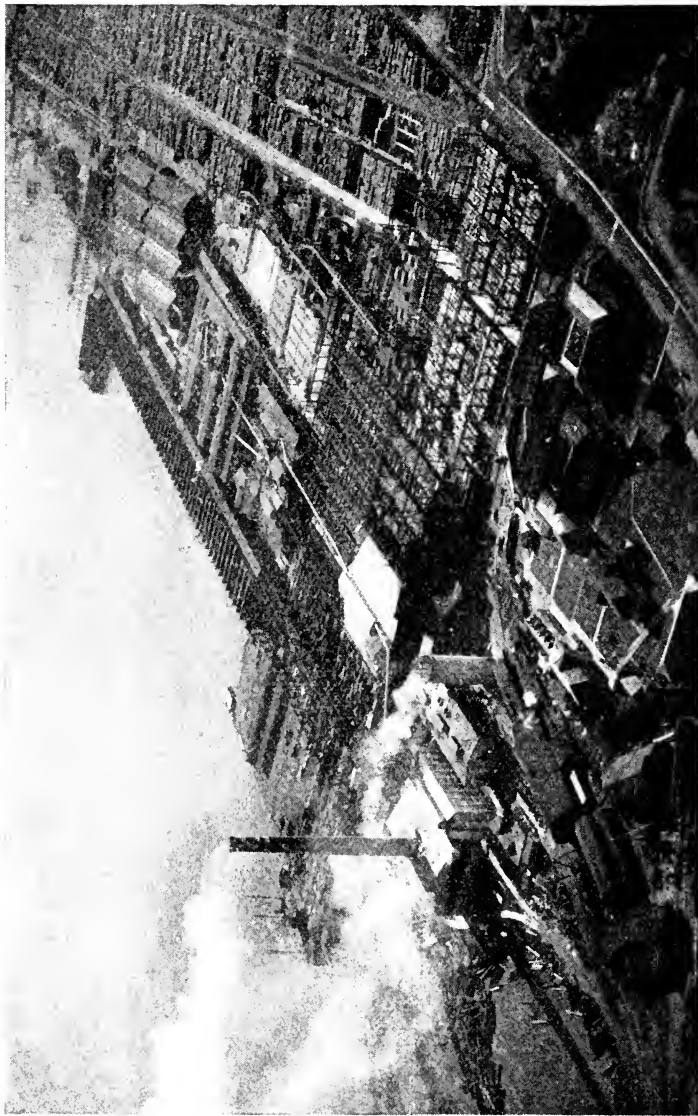
but it seems to me that there is nothing sadder in the world than the story of our redwood forests. For when they are gone they can never come again. New groves may grow up, but the splendid giants that stood here through hundreds of years—they are gone forever.

“Now the people of California are beginning to understand what a dreadful thing they have done. They are trying to buy back the redwoods, that are still left, from the lumber companies that own them. Many groves have been bought. This is one of them. It is owned and protected now by our state. There are many others, as beautiful as this one. Perhaps some day the state will own and take care of even larger redwood groves. We hope so.

“But all along this coast country, lumbering is still an important business. Every day, every day, the great trees fall and are sawed into lumber. Come, let’s be on our way, and before night you will see one of the largest lumber mills in the world.”

Early afternoon brought them to Humboldt Bay and the town of Eureka.

“All this northern coast is rough, and dangerous for ships to come near the land,” Granddaddy told them. “But here is a fine safe bay, the only one on the northern coast. For many years there was no railroad or good roadway up through these coast



—Courtesy of the Redwood Empire Association.
A lumber mill on Humboldt Bay, near the city of Eureka.

counties. The only way men could come here was by boat from San Francisco to Eureka.

“So Eureka grew to be an important town. All the lumber from the forests was sent away in ships that loaded safely in this fine harbor. Lumber mills were built here to saw the great logs as they came from the forest. We’re going to visit one now.”

It was a busy, interesting place. Logs floated in the bay. Piles of lumber were drying in the sun. But the children felt sad as they watched the great saws rip through the logs. They were thinking of the beautiful groves where, only a few days ago, those logs had stood, tall and straight, with a crown of green far up in the sunshine.

They were happier next day, when Granddaddy took them to visit the Forest Nursery, near Eureka. Here were wise gardeners taking care of millions of small plants. “They are young redwood trees,” the children were told. “We raise them from the seeds. Every year when they are large enough, we take them out into the hills where the trees have been cut, and plant them, so new forests will grow.”

“It’s a splendid work,” said Granddaddy. “In fifty or sixty years they will grow to be fine trees. But they will not be like the old forest giants that are gone forever!”

From Eureka they turned homeward. Jim had his happiest day when they visited some of the fine

dairy ranches of Humboldt County, and all of them loved the beautiful Jersey cows.

They went home slowly, camping as they went, in the deep redwood groves. They tramped and explored and went swimming in warm, sunny pools of the river that followed them along the highway.

"Oh, dear, I hate to go home! The valley will seem so hot after these cool dark groves and this lovely river!" said Jeanne, as they were packing up for the last day's drive.

"So do I," Philip answered. "I feel just made over, after this week in the redwoods. Hasn't it been great?"

Granddaddy laughed. "That's a good way to say it, Phil. I think we all feel 'just made over.' There's a long word for that—it's 'recreation.' It means what you said, 'making people over.' And you hit on the very most important thing that this redwood country gives to California. It is recreation.

"All the way from Sausalito to Oregon, all along this wonderful Redwood Highway, there are places for people to rest and play. There are springs of all sorts in these coast hills—hot springs, cold springs, and mineral springs. Sick' people visit them and are helped.

"Farmers from the hot valley, like us, come to the cool coast country and forget how tired they

are. They go home fresh again and ready for work.

“People from the cities, tired with the noise and rush of factories and offices, come here. In the quiet of the groves their hearts are rested, and they, too, go back to work, made over.

“That is what we must do now, go back to our work at home. So finish the packing, and say goodby to the redwood country that has given us such a happy week.”

WORK AND STUDY PLANS

Things You Can Do Alone

Draw a map of the Redwood Highway showing the road, the rivers, and the towns that the children saw on their trip.

Write to the “Save the Redwoods League,” San Francisco, and tell them you are studying about the redwood country. Ask them to send you booklets that will tell you how children can help save the redwoods.

Read the story of the Russians in Sonoma County, and of Fort Ross, and of the Spanish girl, Concepción Arguello.

Perhaps Granddaddy and the children drove past the gardens of Luther Burbank. Pretend you are Granddaddy and write the story he told the children about the “Plant Wizard.”

Things You May Do Together

Paint on your big map the lakes and rivers of the North Coast Region. Paint the Redwood Highway and put in the most important towns.

Put in the redwood groves that are still standing. Make lumber mills and ships for Humboldt Bay.

Show the pasture lands. Put in herds of Jersey cows in Humboldt County and of Holsteins in Marin and Sonoma counties. Put in beef cattle and sheep in Mendocino and Sonoma counties. Put in poultry ranches and flocks of White Leghorn chickens near Petaluma.

Important Facts You May Need

The country of the North Coast Region is nearly all mountainous. There are several long valleys, with very good farm lands, running north and south between the mountains. There is a great deal of good pasture land, especially near the ocean.

There are many mineral springs in the mountains.

All of this country, on the side near the ocean, used to be covered with redwood forests. Redwoods of the coast are called *Sequoia sempervirens*. Redwoods of the Sierra mountains are called *Sequoia gigantea*.

Lumbering is the principal business of the North Coast Region. Raising sheep and cattle and dairy cows is the next most important business.

There is a large beautiful lake in this region—Clear Lake. It is near the eastern side of the Coast Range. The most important rivers are Russian, Eel, Trinity, Klamath, and Mad River.

Sonoma County is famous for two stories that belong to old California—the story of the Russians at Fort Ross and the story of the Bear Flag Republic.

There were two missions in this region, San Rafael in Marin County and San Francisco Solano in Sonoma County.

The home and gardens of Luther Burbank, the "Plant Wizard," are in Santa Rosa.

Books You May Want to Read

"California." Fairbanks. Pages 98 to 106 and 121 to 123.

"Seeing California." Paden. Pages 96 to 110.

“Boys’ and Girls’ California.” Salisbury. Pages 122 to 127, 170 to 171, and 180 to 185.

“Human Geography.” J. Russell Smith. Pages S. 26 and S. 27.

“California History.” Wagner and Keppel. Pages 119 to 122.

“California the Golden.” Hunt. Pages 113 to 119.

“Our Neighbors Near and Far.” Thompson. Pages 205-215.

CHAPTER XXI

EL CAMINO REAL

"All in the golden weather
Forth let us ride today,
You and I together
On the King's Highway.

It's a long road and sunny,
It's a long road and old,
And the brown padres made it
For the flocks of their fold."

Philip and Betty were singing softly, as they worked with the other children on their map. They were waiting for Granddaddy.

"What's that song?" asked David.

"I don't know. We heard Mother singing it, and we liked it."

"It must mean that road Granddaddy told us about, El Camino Real. Remember? The one they used to travel from San Diego Bay to San Francisco, with missions where the travelers stopped at night."

"Yes, it must be that road," said Betty. "And I wish Granddaddy would take us for another trip so we could explore El Camino Real and learn about that country. Then we could paint it on our map. See how fine our Redwood Highway is now!"

It did look fine, with its forests and rivers and highways. There were valley orchards, too, and good grass lands with flocks of sheep, and Jersey cows looking very contented indeed. But down the coast from San Francisco Bay the map was still blank. There were mountains and valleys, but no rivers or roads or towns or farms.

"Let's ask Granddaddy when he comes if we can take that trip, too," said Barbara. "I wonder where he is."

"He went to town early this morning," Jim answered, "but he told me he'd be home before lunch. Listen! there's the car now."

Presently there was Granddaddy standing in the doorway of the granary. But he wasn't alone. There was a tall dark boy with him, a little older than John, and a younger girl who looked a good deal like Barbara.

"Good morning, children," said Granddaddy. "We have guests this morning, Fernando and Dolores. Fernando, these children are all your cousins. They are my grandchildren, and your grandfather and I are first cousins. So you children are related, too."

John came up first to shake hands with the newcomers. Soon they were all telling their names and getting acquainted. Granddaddy told them that his mother's brother had gone to Los Angeles in the

old days. He had married a Spanish girl, and there had been many children and grandchildren. This family, even after California became an American state, had kept the old Spanish names and many of the old ways of living.

“Fernando and I of course go to school and do everything that other children do,” said Dolores. “But at home Father likes to have us speak Spanish. We like it, too. We like the old songs and dances, and the stories that our grandfather tells us of the time when he was a little boy.”

“We live in Los Angeles,” Fernando explained, “but Grandfather has a ranch near San Diego. We like to stay there in vacations. We like it better than in town. But this is the first time we ever came to San Francisco. We’ve been there a week with Mother and Father.”

“Did you come up on the train?” asked John.

“No, we drove,” answered Dolores. “It was a wonderful drive, all the way from San Diego to San Francisco. It took us more than a week, for we stopped to visit the old missions, and Father told us stories all the way. The road is called El Camino Real, the King’s Highway, and it’s the one the old padres made.”

The valley children looked at each other and laughed. “We were talking about that road just when you came in,” said Barbara. “We were wish-

ing we could take that trip ourselves, so we could paint that country on our map.”

“But what is this so great map I see on the floor, *primita?*”* asked Dolores. Then all the children began to tell the new cousins about their summer’s work, the map, and the trips and the Indian village.

“Ay! de mí! You make my head whirl!” cried Fernando. “I know a great deal about our south country. But never did I think there was so much to know about this big California! Dolores, we should ask Father to let us stay here until we have learned what these small cousins know!”

“Oh please do!” said Philip. “Then you can tell us about the coast country and the South, and we can finish the map!”

Fernando and Dolores began to talk very fast in Spanish to each other. Granddaddy added a few words in the same language. Then he said in English, “I think I can manage it. I’ll go right now and telephone to your father in San Francisco.”

When he came back he said, “It’s all settled. You may stay a week.”

“Muy bueno!” said Dolores, and “Gracias, primo mio!” said Fernando.

“No hay de que! Now let’s see what you can tell the children about this coast country you have been

* You can find the meaning of all the Spanish words used in the story in the “Little Spanish Dictionary” in the back of the book.



—Courtesy San Diego Chamber of Commerce.
San Diego Bay and the city of San Diego. A transport of the U. S. Navy in the harbor of San Diego.

exploring. They will want to hear where you went and to know about everything you saw on your way.”

“That is a long story to tell, but we can try,” Fernando answered. “You know, we started from San Diego, and Father said, ‘We are going to take the same trip that the padres often took. I think it would be interesting if we tried to follow their trail and visit the missions where they used to stop on their journeys.’

“We had often seen the old mission at San Diego, at least what there is left of it. You should mark it here, on your map, a short way out of the city of San Diego. It is on a little river called the San Diego River. Let’s put a cross on your map for each of the missions.”

John was ready with his paints, and quickly put the cross where Fernando pointed.

“We know a little about that mission,” said David. “Granddaddy told us about it. It was the first one built by the padres, wasn’t it? And San Diego Bay was the first bay explored by the Spanish sailors. There was a presidio here, too, and a little pueblo.”

“Bravo, primito! That is quite right. Today there is still a presidio. There is a fine fort, many guns, and camps for troops of the army. We Americans think just as the old Spanish commandante

thought, 'San Diego is an important harbor and we must guard it carefully.'

"Besides the army camps and the fort, there are always ships of our navy in the bay. There are great aviation fields, for airplanes, hydroplanes, and dirigibles. We are very proud at San Diego that Lindbergh's plane was built there. I mean 'The Spirit of St. Louis,' the one in which he flew to France.

"The little Spanish pueblo is a fine big city now. Indeed, you will have to paint a town that goes all the way around the bay and up the coast. It's a pleasant place to live, on San Diego Bay."

"But, Fernando," interrupted Dolores, "we can't stay forever at San Diego. These children want to hear about our trip. Vamos! Here we go on El Camino Real, along the coast and wide beaches. Now we come to a little valley. It the valley of the San Luis Rey River. We go up the river from the coast about four miles, and here you place your second cross, Juan."

"It is the Mission San Luis Rey. They used to call it the 'King of the Missions,' it was so rich in cattle and crops from the fields and the orchards. Even now it is not so ruined as many other missions."

"Ruined? What do you mean, Dolores?" asked Jeanne.

Dolores looked at Granddaddy. "Don't they know what happened to the missions?" she said.

"No, I haven't told them that sad story. Those busy, happy mission days only lasted about fifty years. Then the government of Mexico took the missions away from the Franciscan padres. The padres went to Mexico or Spain. The Indians scattered. Some went back to their old savage ways, joining the tribes in the mountains or the tularas. The herds were driven away or killed, and the mission lands were given to new people.

"The buildings fell into ruin from lack of care. Earthquakes and storms soon left little standing of the fine old missions. Some of them have been rebuilt in these later days by people who love the memories of early times. Some are just sad ruins that will never be used again."

"Yes," said Dolores. "When we see the little that is left today, it is hard for us to picture in our minds the rich missions and the happy life that filled them a hundred years ago."

"Well, if the mission farms and herds are gone," asked Jim, "there are still farms of some sort, aren't there?"

"But yes," said Fernando, "fine farms are everywhere. The coast lands are not like your Great Valley here. The farms here follow one after another for more miles than we can count. But all

the way from San Diego to San Francisco we passed through small valleys and over mountains. The mountain land of course has no farms. The valleys have dairies and orchards and grain and hay fields. Even on the mountains there are cattle, but not so many as in the old Spanish days.

“My grandfather’s ranch near San Diego is in the hills. He has fine cattle. On part of his land, in small valleys, he raises hay.”

“You see,” said Granddaddy, “this southern coast country in some ways is like the north coast country. There are farms in the valleys and cattle on the hills. There is some irrigation, but not great reservoirs or canals like the ones we have built in the Great Valley from the Sierra snow fields.”

“You can paint some orange groves on your map back of San Diego, and beans close to the coast where fogs can reach them,” said Fernando. “Then you can paint avocados also near the coast. These are famous crops of our county.”

“Now, Jim, isn’t that enough about farms for you? I’d like to hear more of their trip!” begged Philip.

So Dolores went back to her story. “From San Luis Rey we returned to the highway on the coast and went on toward the north. Then we went away from the coast, up another little valley, to the Mission San Juan Capistrano. The old church and

many of the buildings here have been repaired, and the gardens are full of flowers. It was a pleasant place to visit.

“Through San Juan Valley we went out into the big plain of Los Angeles. We didn’t go into the city. Father said we would keep to the old mission trail. That led us to San Gabriel, in the long valley that goes east from Los Angeles. San Gabriel Mission is one of the best of them all. There is a theater near the mission, where we saw a play telling the story of the old mission days. Then the road went back through Los Angeles and a pass in the hills to another big level valley, called San Fernando, and another mission.”

John was painting the crosses where Dolores pointed on the map. Now he said, “Why did the road leave the coast and go so far inland?”

“I think I know,” answered David. “See those hills that go right out to the ocean? Maybe they couldn’t travel over them.”

“That is the right answer,” Granddaddy said. “To go on north, the best way was over the Los Angeles plain and through the San Fernando Valley. They went out of that valley by an easy pass in the hills, to the valley of the Santa Clara River. That brings us back to the coast again.”

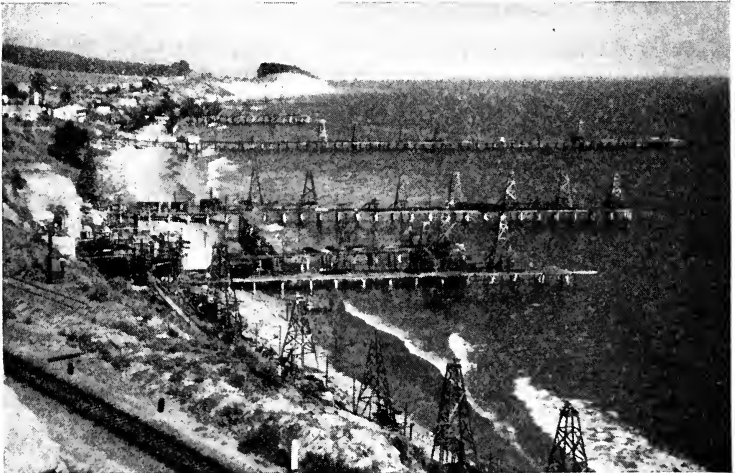
“At the end of the Santa Clara Valley,” Dolores went on, “is Ventura and a mission.”

John put in another cross.

“I see you have made oil derricks on your map, in your Great Valley,” Fernando said. “Now you must make many more to put along this Santa Clara Valley and the seashore from Ventura to Santa Barbara. Some of them you will have to put right out in your blue ocean, for here they pump oil from wells beneath the sea.

“Jim can plant many orange groves, lemon groves, and hundreds of acres of lima beans and sugar beets close to the cool seashore. All the way from Ventura to Santa Barbara the road, too, goes close to the sea.”

“At Santa Barbara there is one of the most



—Courtesy Southern Pacific Company.

Oil wells in the ocean, near Ventura

beautiful of all the old missions," Dolores went on. "There are priests living there still, and many interesting things are saved to show how they worked and lived there a hundred years ago. I loved the beautiful gardens and the church and the long arcade.

"From Santa Barbara the road goes along the coast again for awhile. Then once again the mountains block the highway. It goes up the steep long Gaviota Canyon to the Santa Ynez Valley.

"Our paved road today does not follow the same canyon as the old camino. At the end of the old trail, through San Marcos Pass, stood the Santa Ynez Mission. It is a lonely place, far away from the main road, there in its high valley.

"The valley and the road go down toward the sea, and near the coast was the mission called Purissima. There is almost nothing left here. The buildings have not been repaired and they have almost disappeared. But the valley is a fertile place, with fine orchards and fields of sweet peas and other flowers. They are raised here for seed.

"Now the road runs along back from the sea until it comes to Pismo. There is a wonderful beach there, and Fernando had a swim."

"Don't forget the clam chowder after the swim! Pismo clams are famous. You never saw such big ones!" said Fernando.

“All this part of the coast, near San Luis Obispo, is famous, too, for fine herds of cattle. In the old days of course they were all beef cattle. Now there are more dairy herds, and the milk is made into cheese. This whole region is rather rough and hilly, but it is so near the sea that it has good pasture for the herds. Of course there are valleys, too, and in the valleys fruits and vegetables grow.

“Now for the next missions, Juan. Put a cross at San Luis Obispo, just before we climb up over another mountain range, by the Cuesta Grade. That brings us out into the longest valley of the south coast country, the Salinas. Here in this valley you will need three crosses for San Miguel, San Antonio, and Soledad. San Miguel is very interesting. San Antonio is in a little side valley of its own, that opens into the Salinas. It is a lovely valley. But the mission is neglected and falling to pieces.

“The Salinas Valley is very pleasant in the upper part, near Atascadero and Paso Robles. Lower down, near Soledad, it was hot and windy. No one takes care of the Soledad Mission and it is melting away in the rains and the winds.

“The bed of the Salinas River was nearly dry, but all through the valley there are good ranches. We saw miles of grain, ready to cut, and alfalfa and beets. In the lower part of the valley there

were many condenseries. The milk from the dairy ranches is brought to the condenseries and goes away in little cans.

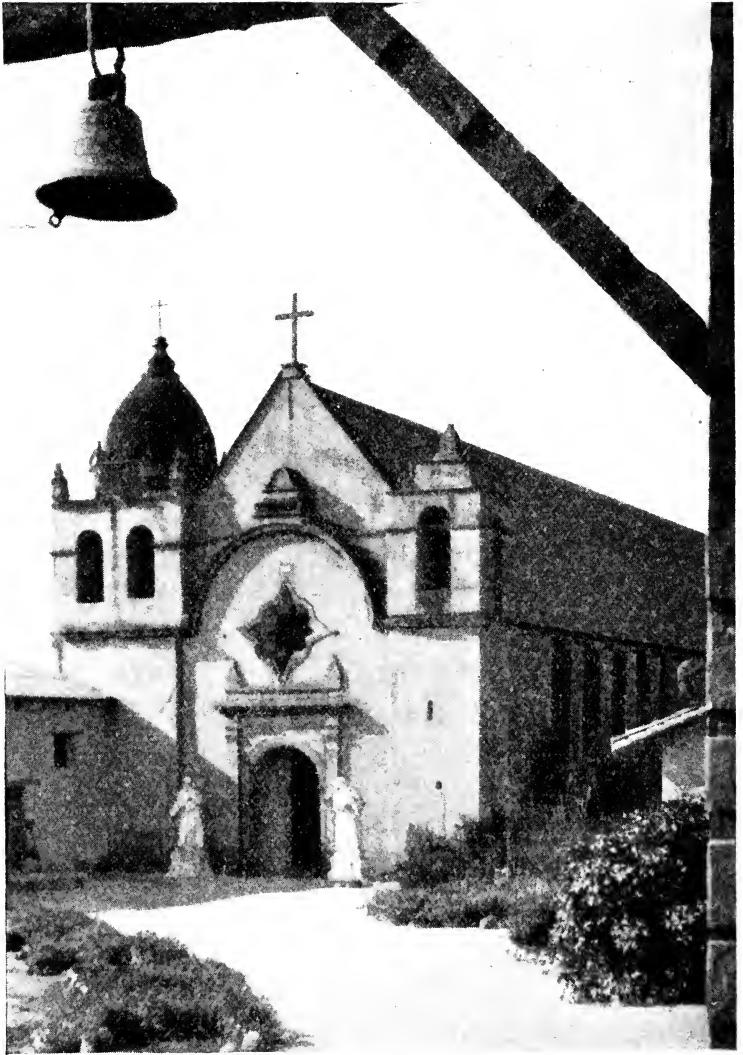
“From Soledad the next mission is San Carlos at Carmel, near the old town of Monterey. This mission has been partly repaired. In the church is the grave of Father Serra.”

“Is there still a presidio at Monterey?” asked John.

“Yes, and a regiment of cavalry and a battalion of artillery are stationed there,” answered Fernando. “But I think the United States does not believe this Bay of Monterey is as important as the Spanish people did. We Americans have most of our soldiers and ships at San Diego and San Francisco. Santa Barbara has no presidio today, and Monterey, which was the most important fort in the old days, is now a very quiet little town.”

“But it is very beautiful,” added Dolores. “All along the coast from Carmel to Monterey, and in the towns, are lovely homes. That is true at Santa Barbara, too. In the city and all along the coast for miles, there are beautiful houses with fine gardens. It seems to me that nowadays we think more about the beauty of these two bays than we do about forts and armies to protect them.”

“That is true,” said Granddaddy. “With our good paved roads and our swift ships and airplanes,



—Courtesy Californians Inc.

Mission San Carlos at Carmel.

two harbors well defended are enough. So we leave the other two big bays to be enjoyed by thousands of happy homes. We have almost forgotten that they used to be important for their forts and soldiers.”

“Well,” said John, “we haven’t reached San Francisco yet. Are there any more missions on our road?”

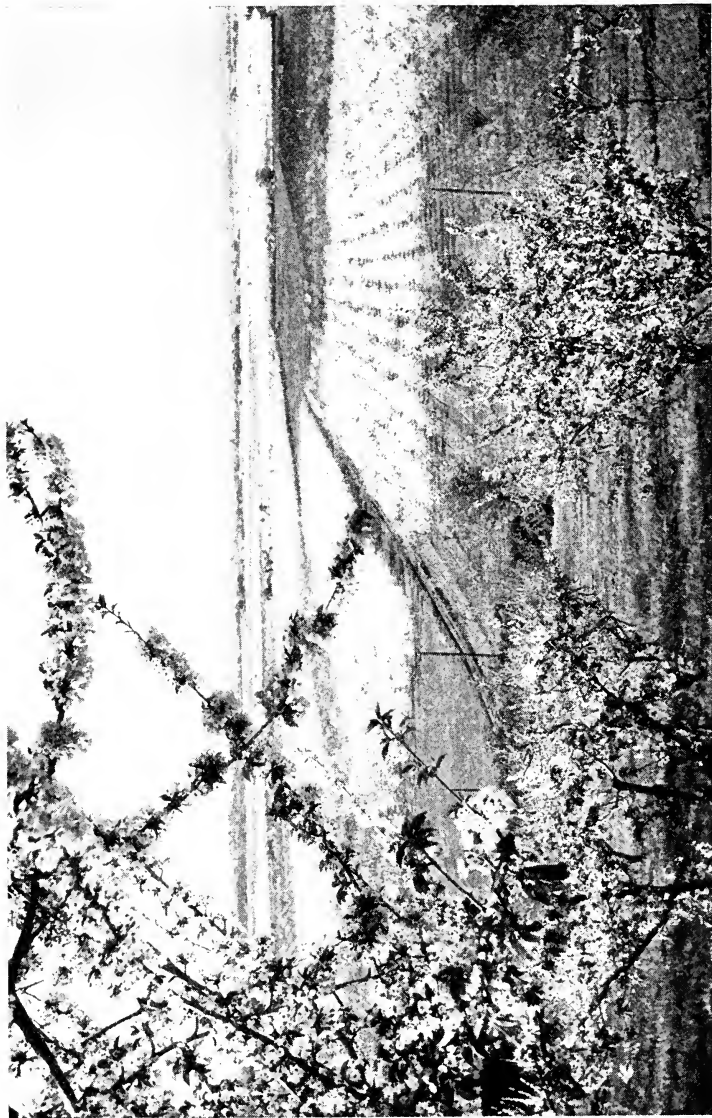
“Five more!” said Dolores. “The one at Santa Cruz, on the bay of Monterey, really wasn’t on El Camino Real at all. But we went around the coast to visit Santa Cruz. Fernando was interested in the bathing beach and the fisherman’s wharf and the little fishing boats.

“To get back to El Camino Real, we had to return to Salinas at the end of the Salinas Valley. We went out of the valley by the San Juan Pass. At the end of the pass is the San Juan Mission, named for your saint, Cousin Juan.”

John laughed and marked another cross on his map. “I’ll go to see his mission some day,” he said.

“It’s a fine one to visit. A good deal of the old church is left, and it is well cared for. The next cross is at Santa Clara, and here we found our mission right in the middle of a college!

“The Santa Clara Mission was one of the greatest and the richest of them all in the old days. For the Santa Clara Valley was then, and is still, the



—Courtesy San Jose Chamber of Commerce
Blossoming orchards in Santa Clara Valley, "The Garden Spot of the World."

richest and most fertile valley of the coast. But it was hard to imagine the Indians and the herds and the farms, here on the campus of a busy college!"

"It was easier at the Mission of San Jose," said Fernando. "No, Juan, put the cross here, near the end of the bay. The Mission San Jose was fifteen miles away from the Pueblo San Jose. There is only a little village near the old mission today. In its sleepy gardens it was easy to dream of the old days.

"Father was more interested in this mission than all the others, for, he told us, his great-grandfather, Don Pablo, used to come to church at this mission. His ranch was not far off, in the rich Santa Clara Valley."

"Why, that was my great-grandmother's father! We know about him, and how he gave cattle and horses to our great-grandfather when he married Doña Barbara!" Barbara was quite excited to hear about the church where great-grandmother Barbara had been baptized. In this church, too, she had married the blue-eyed American, who took her away to live on the Rio Sacramento.

Dolores and Fernando were so interested to hear the story of Doña Barbara that they almost forgot about their journey, until Granddaddy reminded them.

"You are near the end of your mission road,"

he said. "Tell John where to put his last cross, for it is nearly time for dinner."

"I think I know where to put it," John said quickly. "It must be in San Francisco, isn't it?"

"Yes," said Dolores, "the old building is right in the midst of that great city now. It was the Mission Dolores. It is still used as a church, and is well cared for. Near by is Mission Street, and that is the end of El Camino Real."

WORK AND STUDY PLANS

Things You Can Do Alone

If you have ever visited one of the old missions, write a story telling all that you can remember of your visit. Draw a picture of the mission.

Make a collection of pictures of California missions.

Many people in California today like to build houses that look like the old missions or ranch houses. Tell what buildings in your neighborhood are built in this old California style.

Draw a picture of the kind of a house you would like to have for a home, built in the mission style.

Things You May Do Together

Paint El Camino Real on your map. Put a cross for each mission.

Put in the orchards, field crops, cattle ranches, and dairy farms where they belong. Put in oil derricks to show oil fields.

Put in Lick Observatory and Stanford University.

Make battleships for San Diego and San Francisco bays.

Make a dirigible mooring mast at San Diego.

Build a little adobe mission with adobe bricks, as Docas did.

Important Facts You May Need

The South Coast Region is like the North Coast Region. Most of it is mountainous. The mountain ranges do not all run north and south. Some run crosswise, so it is hard to make a road up this part of the coast.

The road follows valleys where it can. Sometimes it has to cross from one valley to another through passes over the mountain ranges.

Although it is a hard road to travel in many places, this was the best way in the old days to go from San Diego to San Francisco.

Today we have a fine road from Los Angeles to San Francisco through the Great Valley. But the favorite road to travel up and down this part of our state is still El Camino Real.

There are not so many farms in this region as there are in the North Coast Region, because there is less rain and fog to make things grow.

Remember, there are two important valleys in this coast country that are both named Santa Clara Valley.

Santa Clara Valley in the south is famous for its lemon and orange groves, and for its oil wells. The principal cities in this valley are Santa Paula and Ventura.

Santa Clara Valley in the northern part of this region is famous for its prune and apricot orchards. The chief city in the valley is San Jose. Stanford University is near the end of the valley, close to San Francisco Bay. Lick Observatory is on Mt. Hamilton, on the east side of the valley.

The song that Philip and Betty were singing was written by John McGroarty. He wrote the "Mission Play," a story of Father Serra, Portola, the Indians, and the early missions. This play is given every year at the old San Gabriel Mission.

Books You May Want to Read

"The Spanish in the Southwest." Winterburn. Pages 109 to 170.

“California the Golden.” Hunt. Pages 67 to 102.

“California History.” Wagner and Keppel. Pages 34 to 68, 315 to 318, and 327 to 328.

“In Old California.” Fox. Pages 31 to 45.

“Boys’ and Girls’ California.” Salisbury. Pages 51 to 65 and 24 to 44.

“Seeing California.” Paden. Pages 52 to 58.

“California.” Fairbanks. Pages 106 to 113 and page 120.

CHAPTER XXII

DESERT MAGIC

“Granddaddy, what has become of our story of the Great Gray Sea and the Far High Peaks? All these days that we have been painting the coast country we haven’t heard anything about the two kingdoms and the Sun Prince and the Knight of the Two Great Winds.”

Barbara and the other children were putting the last touches to the Coast Regions of their map. While they worked, Barbara had been telling Fernando and Dolores the story that had started them on their summer trips and their work on the big map.

“These last stories seem to be all about roads and forests, up north, and roads and harbors and missions, down south,” Barbara went on. “But it’s still all California. I remember you said once that you couldn’t have a story about California that wasn’t some kind of a water story. So what is the water story for the coast counties?”

“It isn’t a very long story, Barbara, but I think you are right. We must not leave this part of our California home without telling its story of water.

“Now let’s look carefully at our map. You have painted all the places where there are orchards or

vineyards or crops of grain or beans or vegetables. Now that you have finished this painting, take a look at it. All the way from Oregon to Mexico, in the coast regions, have you used very much paint for these farm lands?"

"When you look at the great big strip of paint that we put in the Great Valley for farm lands, our coast patches do look small and far apart!" said John.

"They certainly do look small," answered Granddaddy, "and that is why our story of water for the coast regions is short. Compared to our vast valley, with its miles and miles of level land and good soil, there is very little land in the hilly coast regions that can be farmed. So water is not so important to that country as it is to our Great Valley. There are not so many thousands of acres that need it for crops.

"Then, too, there isn't so much water to be saved and used, even if there were more need for it. You can see your coast mountains are not so high as the Sierra Nevada. You remember the coast mountains catch the clouds that are driven in from the sea by the low west wind in the summer; but there are no snowy peaks to catch the high winter storm clouds and to hold their load of water, frozen hard, until summer comes.

"These coast mountains give back to their valleys

the summer fogs. Many crops do well enough with only the rainfall in winter and the fog in summer. Some of these coast valleys are irrigated from reservoirs built in the hills, but the rivers are short. They cannot fill such great lakes behind their dams as you have seen in the Sierra Mountains.

“So this is our water story for the coast. In the North the fog has given the coast country the giant redwoods. They can only live in the damp cool land where all summer long the fog drifts in from the sea and the winter rains are heavy. The redwoods are the best gift of the Great Gray Sea to the north coast country.

“All down the coast from San Francisco to San Diego the sea gives the land a cool even climate that people love to live in. Winters are sunny, because this is a southern land. Summers are cool, because the sea is near. The best gift of the sea to the south coast country is four fine harbors and a climate that people want to live in all the year round. So, on the shore, and in the valleys near the shore, this is a country of pleasant homes.

“Last of all, the whole way up and down the coast, the sea gives this country good grass lands. So, from the time of the first Spanish missions until today, the coast regions have been rich in cattle and sheep. That’s all there is to the story of water in the coast country.”

“That’s a good enough story, too,” said Jim. “I guess we need the Great Valley and the coast country, both of them, in California. We need the valley for great farms, the redwoods for vacations, and the south coast lands to live in when we don’t have to work so hard making a living!”

The children laughed at the way Jim had divided up the state. Then Fernando said more soberly, “But, primo mio, these children who know so much still know nothing at all about the best part of our state! Look! even their map has not a line on it for the greatest city in California and for all that rich country behind it!”

The valley children looked surprised and even a little vexed at Fernando’s words. But Granddaddy answered quickly, “Fernando is quite right; you have a great deal still to learn.

“All this part of our California home that lies below the curve of our valley mountains is called Southern California. Part of it, along the coast and the old mission trails, you have learned to know from the story Fernando and Dolores told you. But there is still a wonderful land and a wonderful story that you do not know at all.”

The children looked at Fernando, and David said, “Will you tell us then about your home country?” John waved his paint brush and said laughing, “Go to it, cousin! I’m ready to paint

whatever you want on the map—cities or farms, lakes or rivers!”

Fernando looked puzzled. “All my life I have lived in Los Angeles, and I’ve taken trips over all that southern country. I can tell you what it is like today. I know many stories from my grandfather about the old Spanish days. But this water story of yours I do not know at all.”

“This water story is all Barbara’s idea,” laughed Granddaddy. “But it is really a pretty good way to tell the story of California, in the North or the South. Perhaps you would all like to hear this part of the southern story. Then Fernando and Dolores can tell us how it looks today.

“Take a good look at your map down here. We have nothing but mountains and valleys here now, but they will help explain our story. Here, beside the ocean, between the San Diego mountains and the Ventura mountains, you have made a wide plain. That is where Los Angeles is built.

“There is another large level valley just north of Los Angeles, the San Fernando Valley. East of Los Angeles is a long narrow valley called the Los Angeles-San Bernardino Valley. Beyond this valley are high mountains. Mountains lie north and south of it.

“Beyond the eastern mountains to the south is a vast low country that is all hot desert. This desert

land is almost as level as our Great Valley. It is called the Colorado Desert. East of the mountains to the north is another great desert land, called the Mojave.”

John and David were busy with their brushes, painting in these names as Granddaddy pointed to the hills and valleys on their map.

“There are three rivers in the Los Angeles Plain. The Los Angeles River flows out of the hills around San Fernando Valley, through that valley and out to the Los Angeles Plain. San Gabriel River flows down from the mountains through the San Gabriel Valley to the Los Angeles Plain. The branches of the Santa Ana River flow from the mountains on both sides of the San Bernardino Valley. This river, too, after passing through the long valley, comes out on the Los Angeles Plain.

“This sounds as though there were a great deal of water in these three Southern California valleys. But, you see, the mountains are not so very high. It is true, snow falls on them, but it does not pack and freeze to deep fields of ice as it does in the Sierras. The rivers are swift torrents in flood time, but down in the valleys, through the long hot summers, they are dry river beds.

“When the padres started their missions at San Gabriel and San Fernando they made sure that there was enough water in the near-by canyons,

even in summer, for their cattle and their gardens. But for the most part these valleys in summer were very hot and dry. No one tried to use them except for cattle.

“The first Americans who came to Southern California had no idea that it would be a great farming country. They thought the valleys were more like desert lands than farm lands.

“Not many Americans came to Southern California at first. You remember that most of the early immigrants came because of the gold. They came by ship to San Francisco, because that town was near the gold fields. Or they came over the mountains to Sacramento, because it was near the gold fields.

“About three years after the discovery of gold a large company of people came from Salt Lake to Southern California. They were not gold seekers. They wanted to find a good place for farms. They settled in the eastern end of the San Bernardino Valley.

“It did look very dry and like a desert, but these men were wise farmers who had already learned what a miracle water can work in desert lands. They built dams in the canyons from which the Santa Ana River flows. They irrigated the level valley lands from ditches.

“The farms they made in that desert country

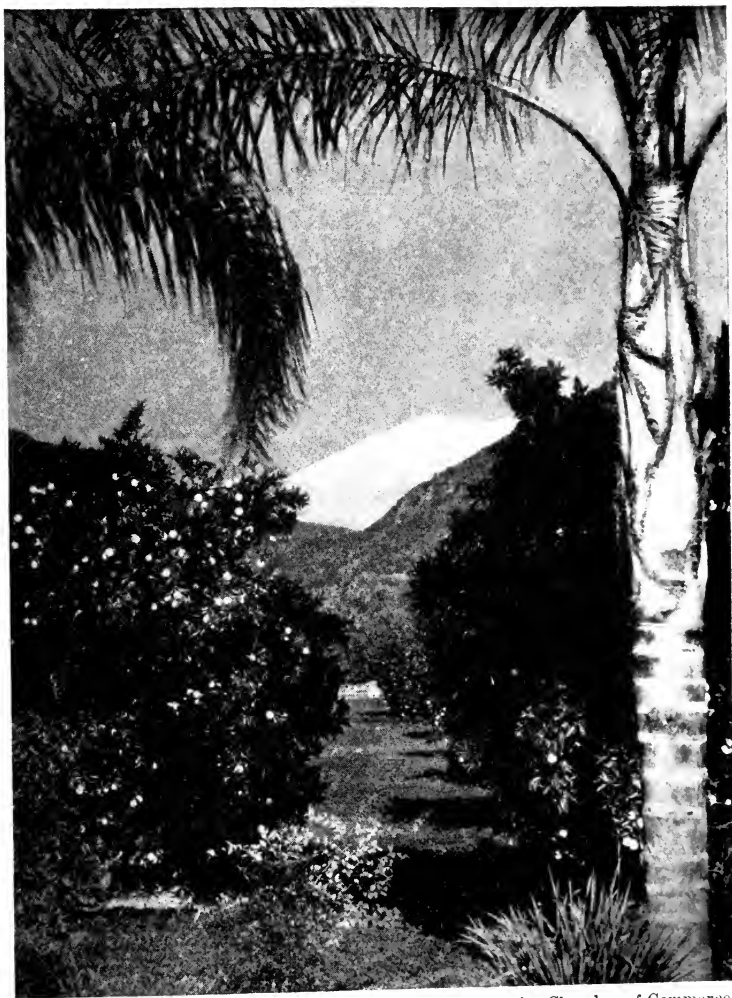
were so rich that soon the whole valley began to fill with farmers. The water from the near-by mountains was carefully saved and used. All kinds of crops grew well in that warm, sheltered valley, where frost almost never touched them.

“Presently two orange trees were sent to a lady named Mrs. Tibbetts. She lived at Riverside, a settlement in this valley. The orange trees came from Brazil. She carefully tended them. Soon they bore fruit. It was a fine orange that had no seed. Everyone liked it; but there were no seeds to plant. Mrs. Tibbetts gave cuttings from her precious trees, which were grafted into seedling trees.

“They grew well. Whole orchards were planted. Southern California had discovered her gold mine. It was the navel orange.

“You may be sure it was not long now before the good rich lands of these three valleys, San Bernardino, San Fernando, and the Los Angeles Plain, were full of farmers. Almost every kind of crop grew well, but oranges, lemons, and grapes seemed to do the best of all.

“Today the water in the mountains around these valleys is carefully saved and brought down to the orchards and other crops. The farmers wish they had more water, but they use what water there is in their mountains so wisely that all these valleys are like one garden, spreading out for miles and



—Courtesy Los Angeles Chamber of Commerce.

The golden crop of Southern California—the orange groves in her sheltered valleys.

miles. No one would ever think that these valleys, once upon a time, had seemed like desert country.

“While these valleys were being settled and planted, out beyond the mountains the vast deserts still lay—lonely and desolate. Why did they have no water at all? Can you tell me from looking at your map?”

“I suppose those mountains back of San Diego and San Bernardino and Los Angeles catch all the clouds that are driven in from the sea. The way we have built them, they look pretty high. They look high enough to stop all the clouds driven in by the lower winds, anyway,” said David.

“But that’s just what all the coast mountains do,” said Philip. “They stop the low clouds so that they can’t reach our Great Valley. But the valley isn’t a desert!”

“Oh, Phil, you’ve forgotten the Far High Peaks,” cried Barbara. “It’s our Sierras that catch the high winter storms and send the water back to us in our great rivers.

“I know why this south country is a desert back of the coast mountains. Look! There isn’t any kingdom of the Far High Peaks down here to catch the big winter storms and send the water back in summer time!”

The children agreed that Barbara must be right. “Poor old desert!” said Jim. “No hope for it.

Let's just give it some yellow paint to show it's all desert, and go back to the irrigated lands!"

Dolores and Fernando looked at each other and smiled. "I do not know at all about this fairy kingdom of yours, little cousin," Fernando said to Barbara. "But we are sure Diego is wrong about his poor desert that has no hope!"

Just then John spoke up, so excited that he almost interrupted Fernando. "Look here," he said, "look what we painted when we first made the map, along the edge of California, down here at the corner. It's a wiggly river. It looks like a big river, too. I don't know where it comes from and I don't know where it goes, but here it is along the edge of this big desert country!"

"It's the Rio Colorado," said Fernando. "That means the 'Red River.' I, too, cannot say where it comes from, but I know it goes on down through Mexico and into the ocean in the Gulf of California. On its way it sends a stream of water into this 'poor old desert' of Diego's. It has made this piece of desert such farm land as Diego has never seen in all his life, even here in this fine Sacramento country."

"Where does it come from, Granddaddy?"

"Tell us about it, please!" asked the children.

Granddaddy went over to the wall and unfastened a map that he had hung there. They had not

noticed it before. The map unrolled and showed them a picture that looked like their adobe map of California. That is, it was a picture of mountains and valleys and rivers, but it wasn't the same shape as their map of California.

"This is our whole country," said Granddaddy, "the United States. You see here, far, far away from California, nearly halfway across our land, is a great range of mountains. It is called the Rocky Mountains. It is one of the longest and highest ranges in all the world. Its peaks are higher and snowier even than our Sierra peaks.

"Barbara was right, there are no high mountains near by on the east of the California deserts to catch the winter clouds and send rivers down in summer. Those clouds that pass above the coast ranges in the South go far indeed before they reach the high peaks of the Rockies. But though the peaks are far from the sea, the clouds reach them. Their snow fields are vaster and deeper than those on our Sierras. Out of this Kingdom of Far High Peaks flow many mighty rivers. Some flow to the east, some to the west. Among the mightiest is this Red River of the West.

"On its way down to the sea it flows, not through one state, but seven states. Here at the lower corner of our California home it passes us. And here, just below our state, in Mexico, it sends back a little

part of its stream to visit our barren desert. Tell them what it has done, Fernando.”

“I am not a farmer, like Diego,” said Fernando, “but I know this desert country now is the most wonderful farm land in our state. That is because the soil is good, the sun is always shining bright and hot, and there is never any frost.

“Even here, in your warm Sacramento, I know the winter is cold—too cold for crops to grow. But in this Imperial country it is always warm. A farmer can grow two or three crops on the same land in one year.”

“Can you explain to them why it is so warm in this country?” asked Granddaddy.

“Yes. It’s because the mountains on the west keep the ocean winds away, and the land is very low and far south. This valley is called Imperial now. It used to be part of the Colorado Desert.

“Long ago it was all under water. It was part of the Gulf of California. The Colorado River flowed into this gulf here at the corner of California, where the town of Yuma stands now.

“But the river washed down so much sand from the country it came through that at last the sand filled the gulf at this end. This low country was left, dry and hot, and the river went on southward to the sea.

“The sand, or silt, that made this land, is really

very rich soil but, because it was so dry, it was true desert country for hundreds of years. Finally men found that they could take water out of the river, down in Mexico, and that it would flow back into the Colorado Desert, because the desert was lower than the bed of the river is now.

“After water came, farmers moved in. Soon the valley was green with crops of every kind. Now there are towns and schools all through the valley. People like to live there although it is so hot. It is the heat and the good soil, and much water, that make the farms so rich.

“They can raise vegetables and fruit and melons



The Colorado Desert. This fine paved road follows nearly the same trail that Anza used when he led his band of settlers through the desert into California.

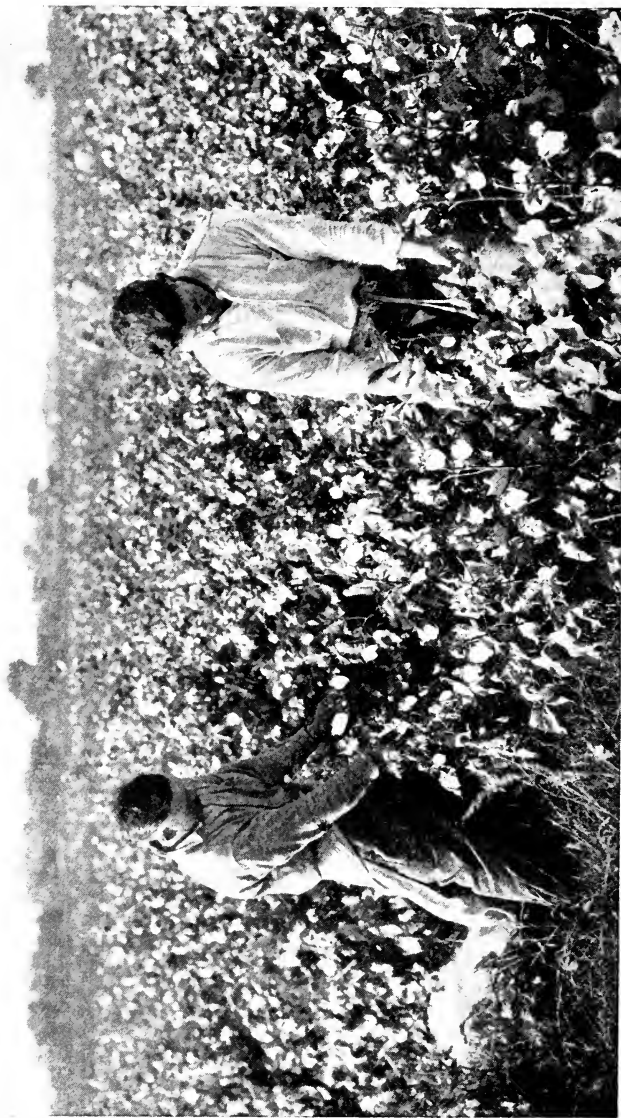
even in the winter. These winter crops bring good prices, because they come to the city markets at a time when other places have nothing to send. They raise great fields of cotton, too. It is a good kind of cotton, very strong, and brings good prices, also."

"Well, Jim," said John, "I guess we want more green paint than yellow for this job. How far does this Imperial Valley go?"

Fernando showed him, and then he said, "In here, a little north of this farm land, you must paint a big lake called Salton Sea. It isn't a live lake; it is a dead lake. The river made it one season about twenty-five years ago. The river was flooded. It was racing down to the sea so fast and so fiercely that it broke down the head gates of the irrigation canal. It rushed into the canal and soon almost the whole raging river was pouring down into the valley.

"At first it seemed as though the river had come back to stay. They feared the valley would soon be under water again, as it had been long ago. But men gathered together and thousands of them worked day and night. They built a railroad track to the place where the river had broken through. They hauled carloads and carloads of rock. They dumped the rock across the broken river bank.

"At last they filled the broken place and the



Picking cotton. Water has changed the desert into rich farms. Cotton is one of the best crops of the Imperial Valley farms.

—Courtesy Los Angeles Chamber of Commerce.

river went back to its bed, and on down to the sea. The good farm land was saved, but the lake is left here from that flood time. It is slowly drying up.

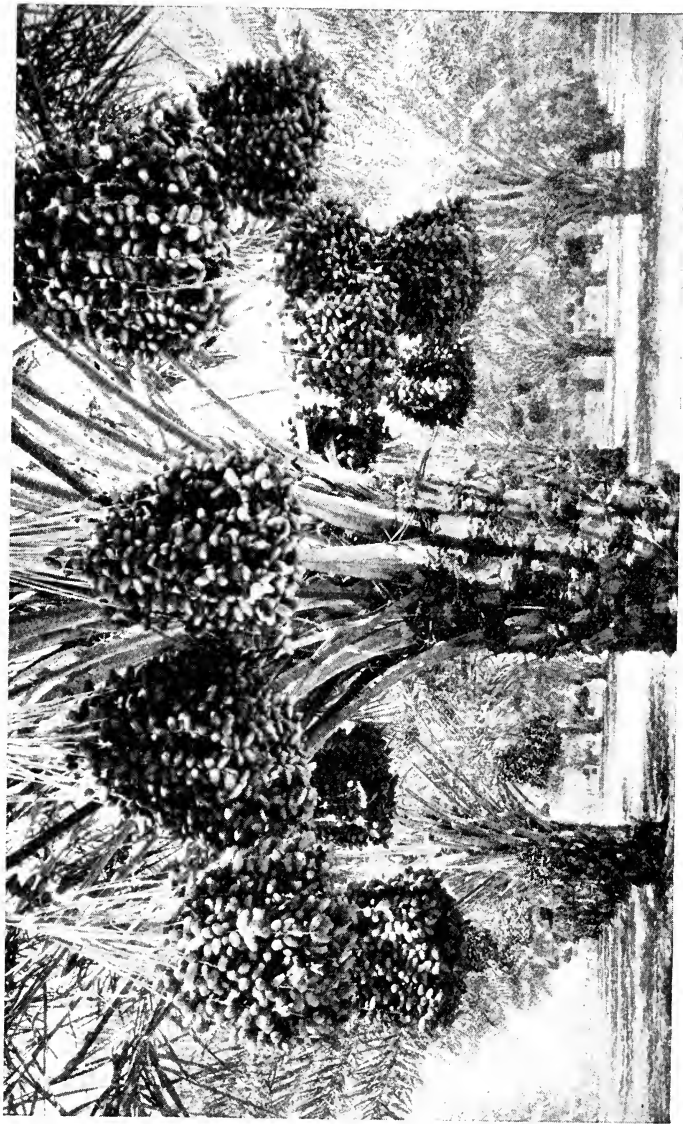
“Here, above the lake, in this valley called Coachella, there is another story of water magic. There is a stream that goes down through the Coachella Valley from the mountains to the Salton Sea. It is called Whitewater. Most of the time this river is only a dry stream bed. All the valley used to be true desert country.

“At last men found that the dry stream bed carried plenty of water, but it was far down in the ground out of sight. Wells were dug and the water flowed up without pumping. The land was irrigated and farms began to spread through this valley, too.

“There are all kinds of farms and orchards, but Dolores and I like best the date orchards. This one valley is the only place in our country where dates grow. The first trees in Coachella were planted from shoots that were brought from Arabia.

“Now there are many acres of date orchards. The palms are already tall and wide-spreading. When you come out of the hot, strong sun it seems cool and dark between the orchard rows. The dates are better than candy.”

“Oh, Jim!” cried Barbara, “do you remember that night, early in the summer, when Granddaddy



—Courtesy Southern Pacific Company.

A date orchard in Coachella Valley.

gave us a box of dates for a prize? We were guessing the most important things that water does. Granddaddy said then, 'If these dates could talk they would tell you a story of desert magic.' Is this the story, Granddaddy? Did those dates come from Coachella?"

"You guessed it, Barbara! There is no more wonderful magic in all our California home than this story Fernando has told you. There never was a lonelier, more desolate or more dreaded desert than this Colorado Desert used to be. And of all the things that water has brought to this desert land, nothing is more magical than these cool dark orchards.



The Mohave Desert. Today, in part of this desert, fine fields of alfalfa and orchards have taken the place of these strange desert trees.

“They spread their palms today where only a little while ago the sands of the desert burned and white bones marked the trail of beasts and men who died of thirst, crossing its weary miles.

“Now you will have a busy time painting this southern country, with Fernando and Dolores to tell you what to paint. This much is sure. All those valleys that seemed so dry and useless to the first Americans must be painted to show the richest orchards in all the world, the green and golden orange groves. And the desert will show, at least in these two large valleys, some of the finest farm land in the world.”

WORK AND STUDY PLANS

Things You Can Do Alone

Here are some “scrambled” sentences. The correct sentences were cut in half. The halves were mixed up. Write out the first half of each sentence. Match it with another half sentence so that when you put them together you will have a correct sentence:

San Fernando Valley farms are irrigated....from the Colorado River.

Coachella Valley farms are irrigated from....the Santa Ana River.

Imperial Valley is irrigated from....artesian wells or wells with pumps.

San Bernardino Valley is irrigated from....the Los Angeles Aqueduct.

Many trails from north, south, and east meet in....Coachella Valley.

Many immigrants died from thirst in . . . the cool moist coast valleys.

Date orchards are a beautiful sight in . . . the Los Angeles Plain.

Snow often covers the ground in . . . the hot Imperial Valley.

Beans grow best in . . . the hot desert lands.

Very good cotton grows in . . . Antelope Valley.

Things You May Do Together

Paint the orange groves of the San Fernando Valley, Los Angeles Plain, and the Los Angeles-San Bernardino Valley.

Paint alfalfa and fruit farms in the Antelope Valley.

Paint date orchards and grape fruit in Coachella Valley and cotton, alfalfa, and vegetables in Imperial Valley.

There is still a great deal of desert land to be painted in the Mojave and Colorado deserts.

Important Facts You May Need

The padres at San Gabriel and San Fernando Missions were the first in this region to use irrigation to grow orchards and gardens.

The first Americans to build dams and irrigation ditches were the Mormon colonists at San Bernardino, in 1851.

The irrigation of the Imperial Valley was begun in 1901.

Antelope Valley is part of the Mojave Desert. It is not low country like Imperial Valley. It is quite high. The winters are cold and snow often falls there, but the summers are hot. Antelope Valley is irrigated mostly by wells, pumped by gas-line or electricity. Alfalfa and fruit are the principal crops.

Books You May Want to Read

"Human Geography." J. Russell Smith. Pages 93 to 95. Map on pages 52 and 53. Pages S. 19 to S. 22.

“Southern California.” Fairbanks. Pages 292 to 304.

“California.” Fairbanks. Pages 203 to 205.

“California History.” Wagner and Keppel. Pages 281 to 286.

“Seeing California.” Paden. Pages 73 to 77.

“Boys’ and Girls’ California.” Salisbury. Pages 12 to 14.

CHAPTER XXIII

LOS ANGELES, QUEEN OF THE SOUTHLAND

“Granddaddy, Dolores and Fernando are going home tomorrow. Can’t we go with them? I’d love to take that trip and see the old missions?”

“Oh, yes, Granddaddy! Let’s go! I want to see those farms in Imperial Valley!”

“I’d like to see the aviation fields in San Diego and the place where they build airplanes!”

“Please do take us! I want to see Los Angeles! Remember what fun we had in San Francisco? Los Angeles is a great city, too, isn’t it? Let’s go!”

Granddaddy did not answer them but pointed to a calendar on the wall. The children looked at it.

“Oh, dear, I’d forgotten! School next week!”

“Not a chance this year! Will you take us next year, Granddaddy?”

“Next year is a long way off. But right now we have a chance to learn about Los Angeles from your cousins. It’s their last day. Don’t you want them to tell you about their home city?”

Dolores looked a little puzzled. “We do love our city,” she said, “and we should like to tell about it. But, ay de mí! we don’t know what to tell these clever children! They have been telling us about your San Francisco. They talk about the valley

riches rolling down to the bay, the valley giants, and places where roads cross. They say these things make cities. If they must know these things about Los Angeles, we cannot help at all. We are sorry."

"You will have to teach us, too, primo mio, about our own city," Fernando added. "We know it is very great, but we don't know why it is. Tell us, please!"

"I'll tell you what I can. But you will still have much to tell us. It is a long time since I have been in the South. They say I would not know how to find my way about your city because it grows and changes every day.

"Now let us see if we can explain why it grew so fast from a sleepy little village, when I was a boy, to the splendid city you children know.

"Let's begin with your map. You haven't painted anything for Los Angeles yet, but you know where it is. We can put a little square here. That will mark the plaza of the old Spanish pueblo. Now look at your valleys and mountains and see what they tell you."

"I guess Granddaddy is thinking about roads and ways of traveling," said David. "We know already that the old padres had to go through Los Angeles when they went from San Diego to the other harbor towns—Santa Barbara and Monterey and San Francisco."

“Yes,” said Granddaddy, “they couldn’t pass over these mountains that come down here to the sea. So they had to turn inland and go through the San Fernando Valley to find a pass through the mountains to the North. You see, Los Angeles is just where they passed from the plain into San Fernando Valley.”

“And it’s just where they passed when they went to the San Gabriel Mission, out in this big long valley,” said Betty. “Now that’s two roads that cross at Los Angeles. Were there others?”

“Go on out through that long valley and see what we find. Here at the eastern end is a low place in the high mountains. It is called El Cajon Pass. And here at the southeast end of the San Bernardino Valley is another low easy pass, called the San Gorgonio.”

“We can see these low places all right,” said John, “but, Granddaddy, they just go out into the desert. No one traveled that way, did they? Where would they go to?”

“You are right, John, it does look as though no traveler would try to come into California across those dreadful desert countries.

“But it was through this very Colorado Desert and this pass that the Spanish people had to come from Mexico to California, with their herds and flocks.

“And far over here to the east were the American settlements and trading posts from which the old trappers used to start out on their trips. Some of them managed to cross this desert and to reach San Gabriel and Los Angeles.

“One of the stories the trappers carried back to the trading post at Santa Fe was about the California horses and mules. They said the Spanish people in California had fine horses and mules, and that they sold them very cheap.

“So traders began to come across the desert trails with loads of blankets and other useful things, to trade in California for these good horses and mules.

“These traders used two trails: one, across the Mojave Desert and through the Cajon Pass, they called the Spanish Trail; the other, across the Colorado Desert and the San Gorgonio Pass, they called the Santa Fe Trail. Both of them came down the San Bernardino Valley to Los Angeles.”

“You see, Fernando, how it works?” said David. “I guess the missions sent their horses and mules by El Camino Real to Los Angeles to meet the Santa Fe traders, because the roads crossed there. That made the beginnings of a town. That’s what we were trying to tell you. Were there any other roads crossing at Los Angeles?”

“Yes. Some of those trappers that came in through the desert wanted to go up into the Great

Valley to trap beaver on the valley rivers. They found that there was a pass going out of the San Fernando Valley that led north. They went out by this pass and traveled around the edge of the Mojave Desert. Then they came to a pass through the mountains that close our Great Valley on the south. This was the Tejon Pass.

“Not far distant was another good pass into the Great Valley, called the Tehachapi. Better mark them both carefully; you will find they are going to be important in our story. You can reach the Tehachapi Pass either by way of San Fernando Pass or Cajon Pass; but the starting place for both trails was Los Angeles.

“After gold was discovered, the two desert trails were used a good deal. You remember the trail across the Sierras to Sutter’s Fort was deep in snow six months of the year. So many gold seekers, starting too late to cross the mountains in summer, turned south and came into California by the desert trails. They came first to Los Angeles, and then took the trail northward from there.

“Now let’s count our trails. There is one from San Diego, one from the north coast missions, two from Mexico and the eastern trading posts, and two from the Great Valley. All met at Los Angeles. So the little pueblo had a good start in life as a place where many roads cross.

“Still, it grew very slowly, while San Francisco was growing very fast indeed. Why did San Francisco grow so much faster at first?”

“Because of the gold mines,” said Philip. “The miners came there in ships, and the ships brought the things men needed, and the gold went out in ships. It was the gold mines and the good harbor that made San Francisco grow.”

“How about the valley wheat?” said Jim. “And before that the hides and tallow? Didn’t they send the wheat out from San Francisco Bay?”

“Now we have two good answers,” said Granddaddy, “Los Angeles had no gold mines to bring men and business to her, no vast wheat fields to send her their wealth, and no great port to bring ships to visit her. So for a long time she was a quiet little town, while San Francisco grew and grew.

“Then suddenly she discovered her gold fields. They were the streams of water hidden in her canyons or under her dry gravel beds, and the golden oranges. Los Angeles began to wake up.

“But even after the orange groves spread out in her near-by valleys, Los Angeles could not sell her golden crop. The oranges did not stay good on a long ocean trip. Of course, they could not send them away across the hot desert on freight wagons. A few could be sent up to San Francisco and to the mining country, but not enough to make a great

business. Oranges were not like wheat, which could be sent all over the world on long slow voyages.

“At last the railroad, which had already crossed the Sierras to Sacramento, came down the Great Valley to Los Angeles. Then it went on out through her two eastern passes to the far-away Eastern states.

“Now there was a chance to sell her oranges! The railway carried them quickly to the Eastern states. She could sell as many as she could raise.

“You may be sure that after the railroad came all the valleys of Southern California went busily to work to find out if they could plant oranges. If water could be found, and if the valley was free from winter frosts, the orange groves were set out.

“Soon the golden harvest was rolling east. Eastern goods for homes in town or on farms came rolling back. Before long there were several railroads to Southern California. They all followed the old trails and the old passes.

“So the oranges from San Diego and Ventura and Santa Barbara came to Los Angeles, over the old Camino Real trail. The oranges from her own neighboring valleys came there to start on their journey eastward. The useful things from Eastern cities came back to Los Angeles. From there they went in many directions to the valleys where the oranges grew. Los Angeles began to be a city.

“The railroads and trade brought many people to Los Angeles. If they went away again, wherever they went they always talked about something that Los Angeles had that was different from all other American cities. What do you think it was that now began to make Los Angeles famous?

“It wasn't her oranges. It wasn't gold mines. It wasn't a great harbor. It was just her sunshine! People came from the Eastern cities in the winter. They left their homes deep in snow. They left bundled up in woolen clothes and furs. They reached Los Angeles to find warmth and sunshine. Flowers were blooming, oranges were ripening. Children ran about in cotton clothes, happy and free, with bare brown arms and legs. This seemed like heaven to people used to the cold and windy winters of the East.

“People came from the East in summer. At home it was hot, too hot to work or play in comfort, too hot to sleep at night. In Los Angeles the breeze was blowing from the near-by ocean. The sun was shining, bright and clear, but the air was cool. People worked hard all summer and felt comfortable. They slept well through cool summer nights.

“Many Eastern people said, ‘It is a good place to live. Let's move out here and stay!’ Thousands of them sold their homes in the East and came to live in Los Angeles, or in the valleys and hills or on the

beaches near the city. The city grew larger and larger. It spread out farther and farther on its level plain.

“After a few years this young city, which had waited so long to begin growing, suddenly found itself face to face with danger. It was growing so fast that there wasn’t enough water any more for the people to drink! They weren’t thirsty yet, but the wise men who managed the city could see that, if it kept on growing, a day would soon come when there wouldn’t be enough water for everyone.

“When the old Spanish explorers picked out this place on the plain for a pueblo, they said, ‘It is a good place because a good river comes out of the mountains here, and the pueblo will always have water.’

“They didn’t dream of the great city that would some day spread out on the plain. They did not suppose that it would need a river of water far bigger than the stream coming down in the Los Angeles River.

“It is true, the people of Los Angeles had built reservoirs in the hills and had done all they could to save and use the water of their precious little river. But they could see that it wasn’t enough.

“So one day the chief engineer of the city, named William Mulholland, hitched up a team of mules to an old buckboard wagon and started out of the

city. 'Where are you going?' they asked him. 'I'm going to look for more water for our city,' he said, and off he went.'

"Oh, I wish I could have gone with him!" cried John.

"Some day we'll follow his trail, John. He went north toward the Sierras, toward our kingdom of the Far High Peaks and the great snow fields.

"He knew that most of the rivers from those snow fields flowed westward, down to the Great Valley and out through the Golden Gate. But I think he must have had a map something like ours here. Look. Do you see this long valley on the eastern side of the Sierras? It has a long river, you see, and a lake near the end.

"It is Owens Valley and Owens River. You see this valley opens down to the Mojave Desert. It comes down to a valley in the Mojave called Antelope Valley. From there a good pass leads to San Fernando Valley, and on to Los Angeles.

"Mulholland spent a long time exploring Owens Valley and the country between Owens Valley and Los Angeles. Then he went back to the city.

"'I believe we can get the water we need from Owens River,' he told the people in Los Angeles. 'There is an immense lot of water there. It will never go dry. It comes from the high snow fields that never entirely melt.'

“ ‘But that’s too far away!’ said the people. ‘We can’t bring water that far! It’s 250 miles!’

“ ‘Yes we can, if we all work together. It will cost a lot of money. I think it will cost nearly \$25,000,000. Will you give me that much for the work we must do?’

“They trusted to his wisdom and gave him the money. He went to work. For five years thousands of men worked to bring the water to Los Angeles. They worked through freezing winters in the high cold mountains. They worked through burning summers in the dry hot desert.

“They built dams and canals. They built miles and miles of huge pipes. They crossed canyons and tunneled through mountains. They brought the Sierra river to Los Angeles.

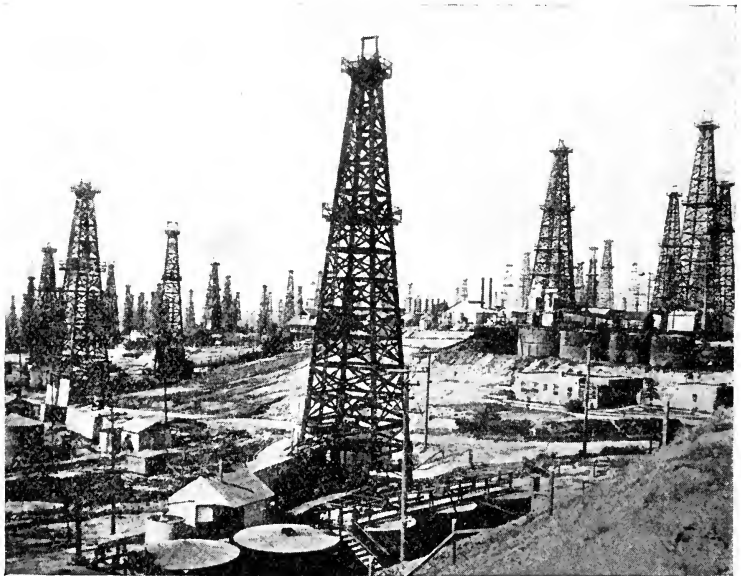
“ ‘Now,’ said the people of Los Angeles, ‘we have water enough to last us forever and ever!’ The city spread out a little farther, out on the plain and up into the hills, and into the San Fernando Valley. Gardens and parks and little farms grew green and happy, warmed by the sunshine and cooled by the mountain waters. Los Angeles was indeed a pleasant place to live!

“Now suddenly something happens that brings great changes to our crossroads city, with its wealth of fruit and its happy homes. The three giants come striding into town!

“Electricity came with the Sierra waters, just as it comes to San Francisco. Near the dams that hold the Owens River, power houses were built. The same great towers that you have seen in our valley came down from the power houses, bringing the giant electricity on their wires.

“Oil wells were discovered all around Los Angeles itself. Some wells were even in the city. Oil and gas flowed and spouted on the very doorsteps. They were rich fields of oil.

“The twin giants were there, shouting for work to do, and the mountain giant was shouting, too.



Oil well derricks and tanks in a rich oil field near Los Angeles.

Now you know very well what happened to our Great Valley cities when the three giants came to town, don't you?"

"They built factories, and the cities grew rich from manufacturing and commerce!" The children knew this answer well, but John looked puzzled. He was staring at his map.

"Some of this story sounds like what we learned in San Francisco," he said. "But there are some things I can't understand. Fernando says Los Angeles is even larger than San Francisco now. How can it grow by manufacturing and commerce when there is no harbor there? You told us how Los Angeles was a place where trails crossed and railroads met. But you told us in the bay cities that their wealth came from trade with other countries.



—Courtesy Los Angeles Chamber of Commerce.

A factory at Los Angeles. Where electricity is used for power there is no smoke or dirt. The factory can be clean and beautiful.

Ships can't come to trade with Los Angeles. I can see that!"

"Oh, Juan, you will have to change your map!" cried Fernando. "For Los Angeles has a good harbor. That is one story I can tell you, for even I remember the way it used to look when I was a little boy. It is very different now."

The children were polite, but they looked as though it was hard for them to believe that an inland city could have a good harbor!

"You see, Fernando," said John, "on our map Los Angeles is a long way from the ocean. Even on the coast there is no real bay in the shore. There's nothing to make a safe harbor. If it is true that ships come to Los Angeles, it must be a good story. Tell it to us, please!"

"It is a good story. It is one of those stories that you children call 'men working together.' When we found that we had many things to sell that needed to be sent away in ships, we called our people together to see what we could do for a harbor. The people voted to make the city larger by joining to Los Angeles the towns of San Pedro and Wilmington. These towns were here by the coast. We also voted to join to the city a strip of land running from Los Angeles to these coast towns. So, you see, Los Angeles moved down to the sea!

"The land at San Pedro and Wilmington is not

rocky coast. It used to be a sort of big marsh made by the Los Angeles River where it ran into the sea. We put big dredges to work. In the soft marsh land they dug deep channels where the largest ships could pass and turn. They dug large deep basins, with wharves and storehouses all around the basins.

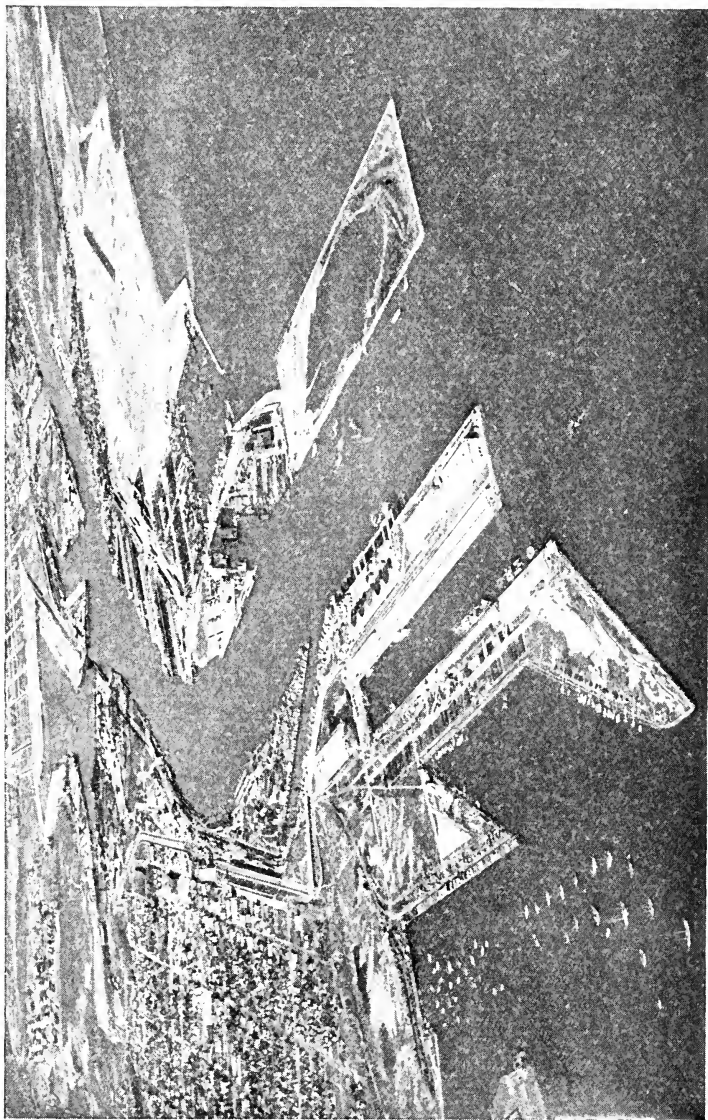
“Out farther in the ocean a breakwater of stone was built. That is a strip of land made in the sea by dumping rocks in the water. It took several years to build this breakwater.

“It is 240 feet wide, down under the water, and twenty feet wide at the top. It rises fourteen feet above the water. It is two miles long. In stormy weather the big waves from the ocean break furiously on the outside of this great stone wall, but inside, the water is quiet and safe.

“So it is true that Los Angeles is now a seaport city, with a fine safe harbor. Ships from all over the world come here. They take away our oranges and other fruits. They take cotton from our desert valleys, and borax and other minerals from the deserts. Most of all, the ships come to Los Angeles to get oil and the things we make from oil.”

“That’s a fine story, Fernando! Now we can understand how Los Angeles grew to be a great city,” said David.

“Have you ever visited these wharves?” asked Betty. “We went to see the wharves in San Fran-



—Courtesy Los Angeles Chamber of Commerce.

The Harbor of Los Angeles.

cisco. We saw such huge ships, and so many different flags on their masts, and such funny names written on their bows, and smelled such funny cargoes in the warehouses, it seemed as though we were in some strange far-away land."

"Oh, yes," cried Dolores, "we have done that, too. We often go down to the dock when a ship from China or some other far-away place comes in. They bring great loads of silk and rubber and coffee and spices and fine and beautiful things."

"That's just like San Francisco," said Philip. "Isn't it fun to live where you can visit such wonderful cities?"

But Jim, as usual, had something bothering him. "Look, Granddaddy," he said. "Look at this immense valley of ours just *full* of farms. You know what an enormous lot of things we raise and send to San Francisco. But back of Los Angeles here, look! there is only a little bit of farm land. With all her oranges and her oil wells, she couldn't have very much to send away, from these four or five small valleys!"

Granddaddy sighed. "It sounds as though you were right, Jim. But the fact is, this story is getting too big even for our big map! We shall have to make a larger one next time! But perhaps you can understand the answer to Jim's question from this map on the wall."

He showed them again the map of the United States. "You see, out here in the great countries east of California, men have been working together as they have in our home. A good deal of this country is like a desert. Yet there are great rivers, as you see.

"Men are building dams on these rivers. There is a big dam here on the Salt River in Arizona called the Roosevelt Dam. Another here on the Gila River is called the Coolidge Dam. Thousands of acres are irrigated from these dams, and others, out in this land that used to be desert or range for sheep and cattle.

"Now that Los Angeles has become a seaport city, the wealth of this southwest country comes rolling in through the old desert passes. It goes on, out to all the world, through this good harbor Fernando told you about.

"So you see, Jim, there are thousands and thousands of farms sending their riches to Los Angeles that you cannot paint on our map. Los Angeles is busy sending away these riches and sending back to Arizona and Nevada and other states the things they need.

"There is something else that makes Los Angeles feel very close to these states that are east of her deserts. Fernando told you about the Colorado River, which came back into California to water

the Imperial Valley. You remember this river flows through seven different states on its way from the Rocky Mountains to the Gulf of California.

“It is such a swift strong river that for a long part of its journey it has cut its bed deep, deep down in the rocks. In one place the sides of the canyon where the river runs are nearly a mile high!”

“A mile, Granddaddy! Just think what a huge dam you could build in a canyon like that!” cried John.

“That’s exactly what the people in those seven states have been thinking, for a long time! Now they are going to do it. They are going to work together and the government of the United States will help them. They are going to build a dam in one of those deep canyons, at Boulder. That dam will hold more water than any reservoir men have ever built on any river from the Far High Peaks.

“When it is finished, Imperial Valley will get more water than she does now, and Coachella Valley will have a share. Los Angeles City will bring another stream into her wide plain for her millions of people, for soon even the big stream she brought from Owens Valley will not be enough for the city that is spreading wider and wider every day.

“Think of it, Dolores. Some day, when you open a faucet in your house, the water that flows out

will have come all the way from the Far High Peaks that are halfway across our Continent of North America!

“With the water from the Boulder Dam new farms will be started in those dry southwest states. More and more their riches will come rolling in to our great crossroads city. She will grow even greater than she is today.”

“Well, it’s plain enough that we need two big cities in California,” said David. “One wouldn’t be enough. I wish I could see Los Angeles, too. Is it as beautiful as San Francisco, Dolores?”

“It is very different. San Francisco is wonderful, on its hills by the great bay. But Los Angeles is my home city. I love it. I love the sunshine, the orange groves all around the city, and the homes with beautiful gardens.”

“Has it great buildings and museums and universities and music?” asked Philip.

“You may be sure it has every fine and good thing that a great city could have,” said Granddaddy. “Besides those things you named, Philip, Los Angeles has one interesting business that is famous all over the world.”

“Oh, I know,” said David. “It’s the movies! Most all the moving pictures are made in Los Angeles, aren’t they? Did you ever see the places where they make the pictures, Fernando?”

“Yes, and when you come down to visit us, that will be our first trip. We will go to see a great studio and watch the actors and cameras, and you will see how pictures are made.”

“We shall come, all of us, some day soon, we hope,” said Granddaddy. “But now let’s all work as hard as we can to finish our map, while Dolores and Fernando are here to help us. We have much to paint and to build.

“There will be streets and houses spreading miles and miles. There will be highroads and railroads. Electric transmission towers will go from the mountains down to the plain and the port. Derriks and tanks will show the petroleum fields. Skyscrapers for the busy city, docks and ships in the harbor—oh, there’s no end to the things you will need to finish your pictures of Los Angeles.

“Last of all, don’t forget to paint her name on the map! The old padres gave the little pueblo a long name. They called it ‘Pueblo de la Reina de Los Angeles’—City of the Queen of the Angels.

“In the long years when the little town seemed almost asleep, men sometimes laughed and called her ‘Queen of the Cow Counties.’ Because the lands all around her seemed good only for pasture, they thought that she would never have any business except selling cattle.

“It was a good crossroads place for the cattle-



—Courtesy Los Angeles Chamber of Commerce.
Los Angeles City Hall.

men to come to sell their hides and beef, so for a long time she was called 'Queen of the Cow Counties.'

"Today those dry hills and valleys are watered with streams she has saved from her own mountains or has brought from far away. They are green and golden with orange groves.

"In through all her desert gateways come, day after day, the riches of a vast land, watered from great rivers, and warmed by hot suns.

"At her ocean gate she has built the harbor she needed, and out of this gate go the riches of all that great south country. The good things of far-off lands come back to her, and she sends them where they are needed.

"She is a queen indeed. So let us write her name on our map—Los Angeles, Queen of the Southland. Let us be proud that we have two splendid cities—San Francisco and Los Angeles. For these cities make our lives interesting and beautiful, no matter where we live in our wide California home."

WORK AND STUDY PLANS

Things You Can Do Alone

Draw and color a picture of a queen on a throne, to stand for Los Angeles. Draw children, each child to stand for one of the valleys of Southern California. Each child carries gifts for the queen. Show by this picture what each valley brings to Los Angeles.

Things You May Do Together

Paint on your map the names of the passes that lead to Los Angeles. Show the railways and highways that come through the passes.

Make the Port of Los Angeles, with docks and ships.

Show on the big map the line of the Los Angeles Aqueduct.

Put in oil derricks and storage tanks to show the oil fields.

Model small buildings to show the city of Los Angeles. See if you can get pictures of the Los Angeles City Hall and the Los Angeles Library, so that you can make small models of these buildings.

In Los Angeles, as in San Francisco and Sacramento, there are many interesting things that tell about the story of our California home. Your class might send a letter to Los Angeles, too, telling what your class has done in the study of their city. Ask the supervisor if some Los Angeles class may write you a letter to tell you about some of the places in their city where people can learn about our state and its history. Ask them to tell you about the Southwest Museum and the Museum of Natural History in Exposition Park. Perhaps some children in Los Angeles will send you pictures that they have drawn or collected of interesting and beautiful things in their city.

Important Facts You May Need

Anza, with a large band of men, women, and children, and herds of cattle and sheep, started for California from an old town of New Spain called Tubac. That was near where the town of Tucson in Arizona now stands. He went through the Colorado Desert to San Gabriel Mission. In later years the Santa Fe Trail followed almost the same trail that Anza first made.

The Spanish trail went through the Mojave Desert and the Cajon Pass to Los Angeles.

Some of the American immigrants of the gold days came to California by these desert trails.

The two saddest stories of the immigrant trails are the story of the Donner Party, who were lost in the snows of the Sierras, and the Manly Party, who were lost in the hot desert.

Today the deserts send to Los Angeles many valuable fruits and other farm products from their irrigated lands. The dry, barren desert lands also send some valuable minerals. Borax and magnesia come from the deserts, and some metals—silver, copper, and zinc.

The first railroad came to Los Angeles in 1872.

Oil was discovered in the Los Angeles district in 1892.

The Los Angeles Aqueduct was finished in 1913.

The Port of Los Angeles was begun in 1906.

The Panama Canal was finished in 1915. This canal made the trip from our Eastern states to California by water very much shorter than it was in the old days, when ships had to go all the way around South America. So, many ships now come to our coast easily from our own Eastern states, from Europe, and from South American countries. The Panama Canal then was one reason why Los Angeles needed a large, safe port.

Here are some of the places in Los Angeles that help to make life more interesting and more beautiful for the people of California: The Hollywood Bowl, the museums of Exposition Park, the Southwest Museum, the University of Southern California, the University of California at Los Angeles, the Observatory on Mt. Wilson.

Books You May Want to Read

“Southern California.” Fairbanks. This book is all the story of Los Angeles and the country around Los Angeles.

“California.” Fairbanks. Chapter VII.

“Seeing California.” Paden. Pages 44 to 50, 129 to 139, and 144 to 146.

“Boys’ and Girls’ California.” Salisbury. Chapter X.

“California History.” Wagner and Keppel. Chapter XXIII, and pages 303 to 311.

LITTLE SPANISH DICTIONARY

adobe, *ä-dō'-bā*, a clay soil which can be used for modeling or for making bricks.

ay de mi!, *ī dā mee*, oh dear me!

bravo! *brä'-vō*, fine!

caballero, *cä-bäl-yā'-rō*, a horseman.

Camino Real, *Cü-mee'-nō Rā-ül'*, royal road; King's Highway.

commandante, *cōm-män-dän'-tā*, commander.

Colorado, *Cō-lō-rä'-dō*, red.

corral, *cōr-räl'*, a place with a fence around it, to hold horses or cattle.

Diego, *Dee-ā'-gō*, James.

Don, *Dōn*, Sir, a title of respect.

Doña, *Dōn'-yā*, Lady, a title of respect.

el, *ēl*, the.

embarcadero, *em-bär-cä-dā'-rō*, landing place.

era, *ā'-rā*, a place to thresh grain.

gracias, *grä'-thee-äs*, thank you.

Juan, *Hwän*, John.

matanza, *mä-tän'-thä*, place where cattle are butchered.

muy bueno!, *moo'-ee boo-ā'-nō*, good!

No hay de que, *nō ī dā kā*, you are welcome.

padre, *pä'-drā*, father; a priest is called "padre."

plaza, *plü'-thä*, an open square in a town; the important public buildings were on the plaza.

primo, *pree'-mō*, cousin.

primita, *pree-mee'-tä*, little cousin (a girl).

primito, *pree-mee'-tō*, little cousin (a boy).

presidio, *prā-see'-dee-ō*, a fort.

pueblo, *poo-ābe'-lō*, a town.

ranch, *rän'-chō*, a ranch.

riata, *ree-ä'-tä*, lasso; a rope of braided leather or horsehair.
with a loop at the end; used to catch horses or cattle.

rio, *ree'-o*, river.

rodeo, *rō-dū'-ō*, round-up; the gathering of cattle, to separate
them into bands.

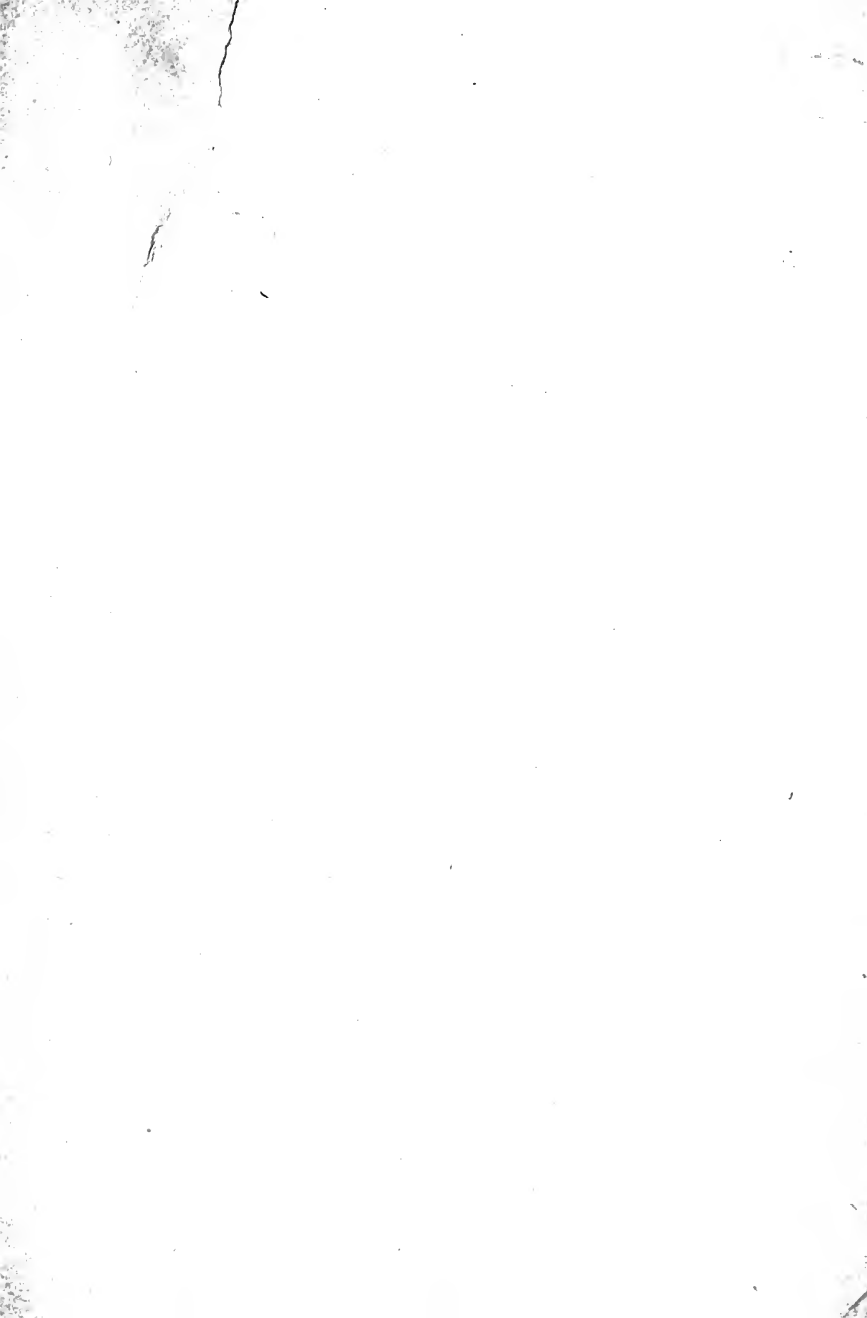
Señorita, *Sā-nyō-ree'-tä*, Miss.

tule, *too-lā*, a reed or rush growing in swampy land.

tulares, *too-lä'-rāse*, swamp country.

vamos!, *vü'-mōs*, let us start!

vaquero, *vü-kā'-rō*, a cowboy.





MAP *of California*

The green parts of
this map show the
irrigated farm land
of our state.

