

July 31, 1902.

Division of Mollusks  
Sectional Library

I certify that the journeys performed by me under this order were performed as specified below, viz:-

June 17, 1902, to June 18, 1902, from Zamboanga, Mind., to Cottabato, Mind.,  
150 miles.

June 19, 1902, from Cottabato, Mind, to Parang, Mind. 17 miles.

June 19, 1902, from Parang, Mind., to Malabang, Mind. 20 miles.

June 20, 1902, from Malabang, Mind., to Tucuran, Mind. 40 miles

June 21, 1902, from Tucuran, Mind., to Malabang, Mind. 40 miles

June 23, 1902, from Malabang, Mind., to Camp Vicars, Mind. 22 miles

June 25, 1902, from Camp Vicars, Mind., to Malabang, Mind. 22 miles

June 30, 1902, to July 1, 1902, from Malabang, Mind., to Makar, Mind.  
210 miles

July 2, 1902, to July 3, 1902, from Makar, Mind., to Davao, Mind. 152 miles

July 6, 1902, to July 9, 1902, from Davao, Mind., to Zamboanga, Mind.  
360 miles.

Major, Surgeon, U. S. A.,

Chief Surgeon.

BRIEF ITINERARY.

1903.

- July 1, 1903 Left San Francisco on U. S. A. T. Sherman for Manila.
- July 21, 1903 Arrived at and left Island of Guam.
- July 26, 1903 Arrived at Manila, Philippine Islands.
- Aug. 1, 1903. Manila to Mariveles, Luzon Island.
- Aug. 2-6, 1903 Mariveles to Zamboanga, Mindanao.
- Aug. 6-8, 1903 At Zamboanga, Mindanao.
- Aug. 8-10, 1903 Zamboanga to Pantar, Mindanao. (Landed at Dapitan Aug. 9; Misamis and Iligan Aug. 10).
- Aug. 11-19, 1903 Surgeon at Camp Pantar, Mindanao.
- Aug. 20, 1903 Pantar to Malaig on Lake Lanao and returning. Action with Sultan Macabato.
- Aug. 21-Sept. 26, 1903. At Camp Pantar.
- Sept. 27-29, 1903 Pantar to Parang, Mindanao.
- Sept. 30-Oct. 6, 1903 Parang to Malabang via buldung and Lake Butig.
- Oct. 7 and 8, 1903 At Malabang, Mindanao.
- Oct. 9-10, 1903 Malabang to Zamboanga.
- Oct. 11-14, 1903 At Zamboanga.
- Oct. 15, 1903 Visited Santa Cruz Island off Zamboanga.
- Oct. 16-27, 1903 Trip around S. coast of Mindanao--Zamboanga to Baganga and returning.

Made the following landings:

Tucuran	Oct. 17.	Reina Regente	Oct. 19.	Davao	Oct. 24.
Malabang	" 18.	Baganga	" 22.	Santa Cruz	" 25.
Parang	" 18.	Manay	" 23.	Malyam	" 25.
Anchored Borneo Off mouth Rio Grande	Oct. 18.	Mati	" 23.	Makar) Sarangahi Bay Bula)	26
				Glan	" 26



1903

Oct. 28 to 30. At Zamboanga.  
 Oct. 31 to Nov. 27 Lake Lanao and Second Sulu expeditions, under command of General

	Wood.	<u>Camping places:</u>	
Zamboanga to Malabang,	Oct. 31 to Nov. 1.	Siet Lake, Sulu Id.	Nov. 18
Malabang to Camp Vicars	Nov. 1	Stream near Mt. Suliman, Sulu Id.	" 19
Madumba (Lake Lanao)	" 2	Mount Sudiman, Sulu Id.	" 20
Tugaya " "	" 3	Taglibi, coast of Sulu Id.	" 20
Marahui " "	" 4	Jolo, Sulu Island	" 21
Baranbingan " "	" 5	" " "	" 22-24.
Romayn River " "	" 6	Dungdung Island	" 25.
Camp Pantar	" 7	Pata Island	" 25.
Camp Overton	" 8	Jolo, Sulu Island,	" 25.
Overton to Zamboanga	" 9-11	Molo to Zamboanga	" 26-27.
Siet Lake, Sulu Island	" 12		
Panglima Hassan's, Sulu Id."	" 13		
Opan's " " "	" 14		
Crater Lake	" 15-17		

No v. 28-Dec. 4, 1903 At Zamboanga.  
 Dec. 5, 1903. Visited Santa Cruz Island, off Zamboanga.  
 Dec. 6-10 At Zamboanga.  
 Dec. 11 Visited Pangapuyan and Bilan-bilan islands.  
 Dec. 12 and 13 At Zamboanga.  
 Dec. 14 Zamboanga to Mercedes and returning, mounted.  
 Dec. 15-18 At Zamboanga.  
 Dec. 19 Zamboanga to Pangapuyan Island, on steam launch, and landed  
 on mainland near Mercedes.

1903

Dec. 20 Visited Mercedes, and returned, on steam launch to Zamboanga.

Dec. 21, 1903 to Jan. 17, 1904. At Zamboanga.

1904

Jan. 18 Zamboanga to Island off Basilan and returning.

Jan. 19-24 At Zamboanga.

Jan. 25 and 26. Zamboanga to Basilan and returning.

Jan. 27 and 28. At Zamboanga.

Jan. 29 to Feb. 2 Fort San Sofia Expedition, Dumanquilas Bay, Mindanao. Visited

the following places:

Left Zamboanga Jan. 29, Arrived at Margosatubig Jan. 30.

" Margosatubig Jan. 30, Arrived at Bung Bung Jan. 30.

" Bung Bung Jan. 30, Arrived at Cabasaran, 4 m. up the Cabasaran R., Jan. 30.

" Cabasaran Jan. 30, Arrived at Buluan, Mindanao, Jan. 31.

" Buluan Jan. 31, Arrived hacienda of Datto Salis Hasin, 8 m. up the Cabasaran River  
Jan. 31.

Left Salis Hasin's hacienda Jan. 31, Arrived at Island of Buluan Feb. 1.

" Island of Buluan Feb. 1, Arrived at Island of Banga, Feb. 1.

" Banga Island Feb. 1, Arrived at Tambigan, Mindanao, Feb. 1.

" Tambigan Feb. 2, Arrived at Island of Pangapuyan Feb. 2.

" Pangapuyan Island Feb. 2, Arrived Island of (next island west), Feb. 2.

Feb. 3 At Zamboanga

Feb. 4-6 Zamboanga to Sulu and Siassi islands, and returning. (Left Zamboanga  
Feb. 4, Jolo Feb. 5, Siasi Feb. 5, arriving at Zamboanga Feb. 6).

Feb. 7-12 At Zamboanga.

Feb. 13-18 Inspection, north coast of Mindanao, Zamboanga to Iligan and returning.

Landed at:



1904

(4).

Left Zamboanga	Feb. 13	Arrived Dapitan	Feb. 14.
" Dapitan	" 14	" Dipulog	Feb. 14.
" Dupulog	" 14	" Lubungan	Feb. 14.
" Lubungan	" 14	" Iligan	" 15.
" Iligan	" 15	" Camp Overton	Feb. 15.
" Overton	" 16	" Sindangan	" 16.
" Sindangan	" 16	" Mucas	" 16.
" Mucas	" 16	" Santa Maria	" 17.
" Santa Maria	" 17	" Zamboanga	" 18.

Feb. 19-22 Zamboanga to Sulu and returning. Landed as follows:

Left Zamboanga Feb. 19 at 10 P. M. Arrived at Jolo 4 P. M. Feb. 20.  
 " Jolo, Sulu Feb. 20 at 4:30 P. M. Arrived at Bual (Opan's market place) evening of Feb. 20; landed at Bual at daybreak Feb. 21, and marched  $3\frac{1}{2}$  miles to Opau's hacienda; returned to ship Borneo, and started for Zamboanga; at 4 P. M. landed on West Bolod Island and shot pigeons until dark; then steamed for Zamboanga arriving Feb. 22.

Feb. 23-27 Expedition to establish civil government at Island of Cagayan Sulu.  
 (Left Zamboanga 5:30 P. M., Feb. 23; landed on north side of Cagayan Sulu after dark on Feb. 24; left Cagayan Sulu the evening of Feb. 26; arrived at Zamboanga late at night, Feb. 27.)

Feb. 28-29 At Zamboanga.

March 1-15 Seranaya Expedition. Camps as follows:

Left Zamboanga	4 P. M., March 1	Arrived Malabang,	March 2.
" Malabang	" 2	" Pollok	" 2.
" Pollok	" 2	" Cotabato	" 2.
" Cotabato	10 P. M.	" Datu Piang's hacienda	March 6.
" Piang's	" 6	" Camp R. side Rio Grande	March 6.



1904

Left Camp R. side Rio Grande March 7,	Arrived Barak	March 7.
" Barak " 11,	" Datu Ali's fort at Seranaya	" 11.
" Datu Ali's fort 5:30 A. M. " 12,	" Datu Djimbangan's hacienda at Labas	" 12
" Datu Djimbangan's hacienda at Labas 4:30 P. M. " 12,	" Libungan River	" 12
" Libungan River " 13,	" Datu Ali's fort at Seranaya	March 13.
" Datu Ali's fort at Seranaya " 13	" Mouth of Seranaya estero on the Rio Grande	" 13.
" Mouth of Ali's estero on the right bank of the Rio Grande March 14	" Cotabato	" 14.
" Cotabato " 14	" Zamboanga 9 A. M.	" 15.

March 16, 1904. At Zamboanga.

March 30-April 13 Second Taraca Expedition. Camps were made as follows:

Left Zamboanga at 2 P. M. March 30	Arrived at Malabang March 31.
" Malabang at 8:30 A. M. " 31	" " Camp Vicars 4 P. M. March 31.
" Camp Vicars April 2	" " Sauir, on L. Lanao April 2.
" Sauir " 3	" " Rogayan " 3.
" Rogayan " 4	" " Taraca River " 4.
" Taraca River " 5	" " " " " 5.
	(destroyed the cotas to the river mouth).
" Taraca " 6	Arrived Galauan April 6.
" Galauan " 8	" Basayan " 8.
" Basayan " 9	" Sauir " 9.
" Sauir " 10	" Camp Vicars " 10.
" Camp Vicars " 11	" Malabang " 11.
" Malabang " 11	" Zamboanga " 12.

1904.

April 13-17 At Zamboanga.

April 18-May 14 Expedition from Zamboanga to Baganga, via Surigao, Lake Mainit, Dinagat Island, etc.; thence across the East Coast Range of Mindanao to Compostela; thence down the Agusan River to Butuan, and by steamer thence to Zamboanga. Stations as follows:

Left Zamboanga at 9:30 P. M.	April 18,	Arrived at Surigao	April 20.
" Surigao	" 20	" " Placer	" 20
" Placer	" 21	" " Bacuag	" 21
" Bacuag	" 21	" " Dinagat Id.	" 21
" Dinagat	" 21	" " Surigao	" 21
" Surigao	" 21	" " Butuan	" 22
" Butuan	" 22	" " Tubay	" 22
" Tubay on Tubay R.	" 22	" " Camp below Santiago	" 22
" Camp on Tubay River	" 23	" " Santiago on the Tuban R.	
			April 23.
" Santiago	" 23	" " Lake Mainit	" 24.
" Lake Mainit	" 24	" " Surigao	" 24.
" Surigao	" 25	" " Baganga	" 26.
" Baganga April 26, Arrived Camp No. 1, at Christian Ade's plantation April 26.			
" Ade's Place April 27, Arrived Camp. No. 2 on the		River April 27.	
" River April 28, Arrived Camp No. 3, Baganga River, April 28.			
" Camp No. 3 at the Baganga River Apr. 29, Arrived Camp No. 4, on the Upper Baganga River, April 29.			
" Camp No. 4, on the Baganga River Apr. 30, Arrived Camp No. 5, on the Upper Baganga River April 30.			
" Camp No. 5 on the Baganga River May 1, Arrived Camp. No. 6 at Cateel, on the Cateel River, May 1.			



Left Camp No. 6 at Catel on the Cateel River May 2, Arrived Camp No. 7 at Calatagan on the Cateel River May 2.

Left Camp No. 7 at Calatagan on the Upper Cateel River May 3, Arrived Camp No. 8, near the head of the Bacoco River May 3.

Left Camp No. 8, on the upper Bacoco River May 4, Arrived at Camp No. 9, at Tingali, on the Bacoco River May 4.

Left Camp No. 9 at Tingali on the Bacoco River May 5, Arrived at Compostela on the upper Agusan River May 5.

Left Compostela in barotas May 5, Arrived Pilar, on the Agusan River May 5.

Left Pilar May 6, Arrived Jativa, on the Agusan River, May 6.

" Jativa May 7, " Varicella" " " " " 7.

" Varicella May 8, Arrived Agusan River just below Lake Linao May 8.

" Agusan River near L. Linao May 9, Arrived Talacogon, on Agusan R. May 9.

" Talacogon May 10, Arrived Butuan, on Agusan River, May 10.

" Butaun May 11, Arrived Cagayan, N. Mindanao May 11.

" Cagayan May 11 Arrived Langaran May 13.

" Misamis " 12 " Baliangao " 13.

" Jimenez " 12 " Dapitan " 13.

" Overton May 12 " Zamboanga " 14.

" Oroquieta " 13

(End of Agusan Exploration).

May 14-31 Expeditionary Brigade known as the Second Rio Grande Expedition, against hostile Moros under the leadership of Datu Ali, in the Vicinity of Lake Buluan and Simpitan, Mindanao, P. I. Movements were as follows:

Left Zamboanga May 14, Arrived Cabacsalan Id. May 16.

" Cabacsalan Island May 18 " center of Lake Liguasan May 18.

" Lake Liguasan May 19 " Buluan May 20

" Buluan " 23 " Simpitan May 24



Left Simpitan May 25, Arrived Buluan May 26.

Left Buluan " 27, " Cabacsalan Id. May 28.

" Cabacsalan Island May 28, Arrived Piang's May 28.

" Piang's place at May 29 " Zamboanga May 31.

Itinerary.

June 11, 1903 Left Fort Snelling, Minnesota, en route to Manila, P. I.  
" 26 " Arrived at San Francisco, California.  
July 1, " Left San Francisco on transport Sherman for P. I.  
" 21 " Arrived at and left island of Guam.  
" 26 " Arrived at Manila, P. I.  
Aug. 1 " Left Manila for Mariveles quarantine station, Luzon, P. I.  
" 1 " Arrived at Mariveles on Army Transport Sherman.  
" 2 " Left Mariveles for Zamboanga on Army Transport Sherman, per par.  
1, S. O. #131, dated Headquarters Div. Philippines, July 28, '03.  
" 6 " Arrived at Zamboanga.  
" 8 " Left Zamboanga on steamer Borneo to join my station at Camp Pantar,  
Mindanao, P. I., per S. O. No. 155, par. 3, dated, Headq. Dept.  
of Mindanao, August 7, 1903.  
" 9 " Landed at Dapitan, Mindanao, P. I.  
" 10 " " " Misamis, " " "  
" 10 " " " Iligan, and rode, with General Wood's headquarters,  
to Pantar, Mindanao, P. I. and reported for duty to Captain  
Ryan., Cav., commanding the camp.  
" 20 " Accompanied a troop of Cavalry, commanded by 1st Lieutenant  
Charles Burnett on a hike to Malaig, on Lake Lanao, for the  
purpose of arresting the Sultan of Bacayauan (Macabato).  
The command was fired upon, and in the fight that followed,  
14 of Macabato's men were killed. (Three of them I killed  
with my shotgun.)  
Sept. 27, " Left Pantar, Mindanao, P. I., pursuant to telegraphic  
instruction from Dept. Commander, dated Sept. 27, 1903.

Sept. 29, 1903. Reported at Malabang, Mindanao, P. I., to Colonel Philip Reade, Commanding post, and received telegraphic instructions from Department of Parang, Mindanao, P. I., and report to Capt. Francis J. Koester, ~~Rxxix~~, 15th Cavalry, to accompany the Butig Expedition.

" 29 " Took steam launch Rochester from Malabang to Parang, Mindanao, and reported for duty.

" 30 " Set out from Parang on the Buldung Lake, Butig expedition, which crossed the Butig Mountains, to Lake Butig, thence to Malabang wagon-road, arriving October 6, 1903.

October 9, 1903. Left Malabang enroute to Zamboanga, Mindanao, P. I., pursuant to telegraphic authority of the Department Commander, dated Zamboanga, Mindanao, P. I., October 1903.

October 10, 1903. Reported to the Department Commander at Zamboanga, for special service.

October 15, 1903. Visited Santa Cruz Island off Zamboanga in Moro vinta.

October 16, 1903. Left Zamboanga, Mindanao, P. I., with General Wood's headquarters staff for a trip around the south coast of Mindanao as far as Baganga on the east (Pacific) coast, returning to Zamboanga on October 27, 1903.

October 17, 1903. Arrived at Tircuran. (As it was raining hard I remained on the Borneo, and did not land.

October 18, 1903. Landed at Malabang at dawn. Landed at Parang about 2 P. M., remaining 2 hours.

October 19, 1903. Took steam launch Cheyenne at 5 A. M., up the Rio Grande de Mindanao to Cattabato, ~~and back to Cattabato~~ thence to Reina Regente and Lake Liguasan and back to Cattabato and the ship the same night.



- October 20 and 21, Enroute through the Celebes Sea and Pacific Ocean to Baganga on the E. coast of Mindanao.
- October 22, 1903. Landed at Baganga, Mindanao, P. I., at 4:30 P. M., remaining until after dark.
- October 23, 1903. Landed at Manay, at 8 A. M., and remained about an hour. Landed at Mati at 3 P. M., and remained two hours.
- October 24, 1903. Landed at Davao at dawn, and left there after dark on the steam launch Baltimore for Santa Cruz, on Davao Bay.
- October 25, 1903. Boarded the Borneo at dawn and went ashore at Santa Cruz at 7 A. M., remaining one hour.
- October 26, 1903. Landed at Makar at 6 A. M., remaining about 3 hours. Crossed Sarangani Bay to Bula, and remained 2 hours. Landed at Glan about 3 P. M., and remained until dark.
- October 27, 1903. Returned to Zamboanga.

Collecting stations on the above trip were.

Malabang	Oct. 18, 1903.
Parang	" " "
Reina Regente	" 19, 1903.
Baganga	" 22, "
Manay	" 23, "
Mati	" " "
Davao	" 24, "
Santa Cruz	" 25, "
Maliyam	" " "
Makar )	" 26, "
) Sarangani Bay	
Bula )	
Glan	" " "

- October 31, 1903. Left Zamboanga on the steamer Gibson at 3:45 P. M. with General Wood's headquarters staff as Chief Surgeon of the Lake Lanao Expedition, which was subsequently abandoned for the Second Sulu Expedition, the two expeditions together occupying from Oct. 31 to November, 1903.

- November 1, 1903. Arrived at Malabang at 9:30 A. M., and rode in saddle to Camp Vicars, 23 miles.
- November 2, 1903. Left Camp Vicars at 7 A. M., and marched to Madumba, on Lake Lanao, and camped.
- November 3, 1903. Broke camp at Madumba at 6:30 A. M and marched past Bacolod to Tugaya and camped.
- November 4, 1903. Camp was made at Marahui.
- November 5, 1903. " " " " Baranbingan.
- November 6, 1903. " " " " Romayn River.
- November 7, 1903. The expedition here left Lake Lanao for Sulu, camping at Camp Pantar the first night.
- November 8, 1903. Marched from Camp Pantar at daybreak and reached the coast at Camp Overton early in the day.
- November 9, 1903. Sailed for Sulu on steamship Borneo with General Wood's headquarters staff, about midnight.
- Nov. 11, 1903. Touched at Zamboanga at 7 A. M. and left at noon for Sulu.
- Nov. 12, 1903. Landed on the beach at Siet Lake in the early morning. Fighting with Moros began at once, before outposts could be stationed.
- Nov. 13, 1903. Command of 960 men fought clear across the island of Sulu and camped at the rancheria of Panglima Hassan.
- Nov. 14, 1903. Marched to Opau's rancheria and camped.
- Nov. 15, 1903. Received word that Colonel Scott and two men had been wounded, November 14th, at Crater Lake. The wounded were sent to Jolo, Sulu; and both Colonel Scott's and Gen. Wood's columns made a camp on a stream at the foot of Crater Lake Mountain, near the cotta of the Panglonia, where Colonel Scott was shot.



Fighting continued during November 16 and 17; the Panglima's cotta wastaken; several hundred Moros killed; large stores of food and many carabao and horses captured or killed.

November 18, 1903. Marched through friendly country to the north of Crater Mountain to Siet Lake and camped.

November 19, 1903. Marched through friendly country to camp on a small stream near Mt. Suliman.

November 20, 1903. Battle of Mt. Suliman. Severe fighting during the greater part of the day. One American soldier killed; Datto Andung's fort captured, houses and stores destroyed, carabao and horses captured. Camped on the beach at Taglibi, Sulu.

November 21, 1903. Entire command marched 10 miles along the beach to Jolo, Sulu, P. I.; the camp outside of the walled city, November 21 to 26, 1903.

November 25, 1903. With a small command on two Naval ships, and expedition was made to Pata Island, off Sulu. Left Jolo with General Wood, on the Borneo. Landed on the Island of Dungdung, and remained about an hour. Landed on Pata Island and remained several hours.

November 26, 1903. Left Jolo, Sulu, P. I. on steamship Borneo.

November 27, 1903. Arrived at Zamboanga.

December 5, 1903. Visited Santa Cruz Island, off Zamboanga, with General Wood. collected shells and birds.

December 11, 1903. Visited Pangapuyan Island, 10 miles east of Zamboanga on steam launch; also the island of Bilan-bilan.

December 14, 1903. Rode with Capt. McCoy to Mercedes, 9 miles east of Zamboanga, and returned to Zamboanga.

December 19, 1903. Left Zamboanga with Capt. Langhorne on steam launch  
 -----, Revisited the island of Pangapuyan, 12 miles  
 east of Zamboanga, and again collected birds and shells.  
 Landed on mainland near Mercedes, and collected birds.

December 20, 1903. Visited Mercedes, and collected birds, returning to  
 Zamboanga in the evening.

January 18, 1903. Visited the island of Basilan, with Capt. Proctor,  
 returning to Zamboanga the same evening.

January 19, 1903. Left Zamboanga on launch Natchez at 8 A. M. Arrived  
 at Isabella, capitol of Basilan, at 9:45 A. M. Flock of  
Sterna bergii off E. end Santa Cruz Island. Flying-fish  
 that skips on its tail. Left Isabella at 2 P. M. Went  
 shooting in a coconut grove and thicket for 2 hours with  
 Dr. Strine. Shot 6 birds, 3 new. Besides these, saw the  
 following birds.

Hirundo--two species  
 Crow  
 Anthus  
 Dendweygna  
 Rifle Bird  
 Blue Kingfisher  
 Carabao bird  
 Blackthroated sunbird  
 White-headed Chat  
 Raincrow  
 Brown Shrike  
 Little Green Parakeet  
 Larger Green Parrot  
 Large green-backed Pigeon  
 Largest Honey Creeper (Pantar spec)  
~~Large green-backed Pigeon~~  
 White-tailed Eagle  
 Black starling  
 Large Hawk, gray below to middle of belly, then  
 abruptly white  
 Brown Java Sparrow  
 Large Iguanas abundant  
 Saw skinner Crocodile

- January 25, 1904. Revisited the island of Basilan, in company with Lieutenant Bell, 17th Infty. Spent the night at the Naval Station at Isabella, Basilan.
- January 26, 1904. Spent the day collecting shells and birds, and returned to Zamboanga the same night.
- January 29, 1904. Left Zamboanga on steamship Borneo at 5 P. M., as chief surgeon of General Wood's expedition to capture Fort San Sofia, at Margossatubig, on Dumanquilas Bay, Mindanao, P. I., from the Moros.
- January 30, 1904. Arrived at Margossatubig during the night, and there joined by steam launch Rochester, from Malabang, with Capt. Croxton's Co., Infantry. Landed about sunrise and took the old Spanish fort of San Sofia without a fight. Collected three plants. Left Margossatubig at 10 A. M. and steamed to Bung Bung, where an interview with Subanos was held by General Wood. Specimens taken. Steamed to the mouth of the Cabasaran, returning to the Borneo after dark. Specimens of birds, etc., taken.
- January 31, 1904. Steamed during the night to the town of Buluan, on the mainland, which we visited at 8 A. M. Specimens collected. At 2:10 P. M., started up the Cabasaran River in three small boats. Rowed 6 miles up the river, and walked 2 miles overland to the hacienda of Datto Salis Hasin, returning to the Borneo soon after dark.
- February 1, 1904. At 5 A. M. landed on the island of Buluan, and remained an hour. Collected birds, etc., in the vicinity of the Moro village of Buluan. At 9 A. M., landed on the island



of Banga (called Port Banga), and remained until noon.  
 Steamed to Tambigan on Tambigan Bay, arriving at sunset.  
 Anchored for the night.

February 2, 1904. Left Tambigan at 10:30 A. M. Landed at Pangapuyan,  
 on island of same name, where collections were made. Our  
 small boat was towed thence to the next island, ( ),  
 which we reached after sunset. Arrived at Zamboanga at 8:30  
 P. M.

February 4, 1904. More troubles on the island of Sulu caused General  
 Wood to visit Colonel Scott, military governor of Sulu at  
 Jolo. Left Zamboanga at 9 P. M. on steamship Borneo.

February 5, 1904. Arrived at Jolo, Sulu at 7 A. M., Feb. 5. Remained there  
 less than an hour. Reached Siassi at 1:15, P. M. Colonel  
 Scott made a brief inspection. Returning, reached Jolo, Sulu,  
 at 8:15 P. M., and left immediately for Zamboanga.

February 6, 1904. I arose at day dawn and saw beautiful cloud effects.  
 Arrived at Zamboanga on the Borneo.

February 13, 1904. Left Zamboanga ~~xxxxxxBorneo~~ at 1:15 P. M., with Capt.  
 Landhorne and Mr. Ornian Nimmons Powell, all carrying shotguns,  
 on the Borneo, for a trip on the north coast of Mindanao,  
 as far east as Iligan, returning February 18, to Zamboanga.

February 14, 1904. (St. Valentine's day). Landed at Dapitan at 11 A. M.  
 Remained ashore less than an hour, the time being devoted  
 entirely to gathering shells and one plant on the beach. Landed  
 at Dipulog at 1 P. M. Collected 8 birds, etc. Landed at  
 Lubungan at 3:45 P. M., remained  $1\frac{1}{2}$  hours and collected. Land-  
 ing and launching were difficult owing to high surf.

- February 15, 1904. Landed at Iligan at 4 P. M., and collected bird, etc., until dark. Steamed to Camp Overton, where we were anchored from 7 P. M. to 3:30 A. M.
- February 16, 1904. Landed at the Subano village of Sindangan, on Sindangan Bay, at 11 A. M., and remained until 3 P. M., when we steamed to a Subano village called Mucas, at the mouth of two rivers, remaining there until dark. Collected birds, shells, and rocks at both places.
- February 17, 1904. At daybreak landed at Santa Maria, and took a short walk up a canyon; then steamed across the little bay to an old Spanish fort at the north end of the old Trocha, where we hunted deer and hogs from 7:45 A. M. to 2 P. M., when we boarded the Borneo, and steamed to Zamboanga during the night. (Rocks and shells were collected on both sides of the bay.)
- February 19, 1904. Left Zamboanga on the Borneo at 10 P. M. (Fighting on the island of Sulu caused General Wood to join Colonel Scott, military governor of Sulu, in the field.) Turned back in the night on account of a storm.
- February 20, 1904. At daybreak we were still in sight of Basilan. Reached Jolo, Sulu, at 4 P. M. Colonel Scott was in the field near Opau's hacienda. Steamed from Jolo at 4:30 P. M., and anchored for the night off Opau's market-place, called Bual. Slept aboard the Borneo.
- February 21, 1904. Landed at daybreak, and marched  $3\frac{1}{2}$  miles to Opau's place, where we found Col. Scott's command just leaving camp for Crater Lake (our old camp). In a fight with Moros in a fort,

an officer (West) and several soldiers had been wounded, and one soldier had died of his wounds. Several hundred Moros had been killed. After a conference between General Wood and Colonel Scott, at which Datto Opau was present, we returned to the ship, shooting birds on the way. After intercepting Colonel Scott's steam launch coming from Jolo, we turned towards Zamboanga, and at 4 P. M. landed on a small, high, rocky islet called West Bolod Island, where we got 19 large Pigeons of 3 species. Castle Rock of the charts is also called East Bolod Island. Both uninhabited. We reached Zamboanga during the night.

February 23, 1904. (Capt. Langhorne and I set out for a visit to the island of Cagayan Sulu, which occupied the time until the night of February 27th.) Left Zamboanga at 5:30 P. M., on the Borneo.

February 24, 1904. Landed, after dark, at the house of Mariano de Lion, on the north side of Cagayan Sulu.

February 25, 1904. Ransacked the country on the left of Mariano's house during the morning; skinned birds during the middle of the day; explored the country on the right in the afternoon; skinned birds during the evening. Capt. Langhorne crossed the island to the southward and shot 3 birds for me.

February 26, 1904. Capt. Langhorne hunted in the vicinity of Mariano's house. I explored the mountain to the west (left) of it and the basin south of the mountain. Boarded the Borneo (which had made the trip to Sandakan, Borneo), after dark, and skinned birds all night.

February 27, 1904. Arrived at Zamboanga late at night.

March 1, 1904. (Set out with Col. Harbord, Capt. Mc Coy, and Lieut.



Quackenbush in the Coastguard cutter Palawan, intending to steam to Baganga, cross the East Coast Range, and go down the Agusan River to Butuan, where the Ranger would have met us; but this plan was interrupted at Cottabato by a telegram from General Wood to await him there and accompany him on the Rio Grande expedition against hostile Moros concentrated under Datto Ali. Left Zamboanga, Mindanao, P. I., at 4 P. M., on coast guard ship

March 2, 1904. Arrived at Malabang at early morn, but did not land.

Steamed on to Pollok naval station and dry dock. Thence, after calling on Capt. Coffin and Surgeon Munson and viewing this old Spanish naval station, proceeded to the mouth of the Rio Grande de Mindanao, where we were met by the Cottabato steam launch-----.

Ascending the Rio Grande to Cottabato, which was reached after dark, we transferred our luggage to the Ranger, and awaited General Wood.

March 3, 1904. Collected birds and shells around Cottabato.

March 4, 1904. Tied up to dock at Cottabato; remained on board the Ranger.

March 5, 1904. Prepared medical supplies for Seranaya expedition; General Wood arrived late in the day. Left Cottabato at 10 P. M. on the Ranger, arriving at Datto Piang's hacienda at 5:30 A. M. on the morning of March 6.

March 6, 1904. Marched several miles across a bog to a mosquito-infested camp, on a low ridge on the right of the Rio Grande where we spent a most uncomfortable night. Capt. Gatley's battery did not get into camp until late at night.

March 7, 1904. Marched 6 miles to the residence of Tambilanan Sultan of

Kindarangan (eldest son of old Sultan Bayano) at Barak, and returned to General Wood's main camp, 2 miles from Barak and spent the night.

March 8, 1904. The entire command moved forward to Barak, about two miles from Ali's fort at Seranaya, and camped in the cocoanut grove of the Sultan of Kudarangan, whose residence was burned by Datto Ali yesterday.

March 9, 1904. The main camp remained at Barak. I accompanied a reconnoissance party sent out to examine Ali's left flank. We left at sunrise, and returned at 1 P. M., having been within 600 yards of Ali's fort.

March 10, 1904. Yesterday evening and last night Captain Gatley's battery shelled the fort of Ali at Serenaya from our camp in the cocoanut grove of Tumbilanan, Sultan of Kudarangan, called Barak, distance about  $1\frac{1}{4}$  miles. This morning we could see that Ali had torn down several houses, and raised his fort higher so that it made a better target. Shelled the Moro works all during the day.

March 11, 1904. Left Barak in three columns to attack the Seranaya fort, which we entered without firing a shot, and found no dead, but one dying Moro. A number of graves were found in which Moro dead had been buried. Looted and burned the fort and houses.

March 12, 1904. Left camp at Ali's fort at 5:30 A. M. with Major Truitt's battalion and marched to Labas and captured Djimbangan at 4:30, P. M. Left Labas at 4:30 P. M., after burning Djimbangan's house and property and seizing some of his carabaos and horses, and returned with Djimbangan to the Libungan River, where we camped at 10:30 P. M.

- March 13, 1904. Marched from Libungan River to the Seranaya camp early in the afternoon (1:30 P. M.) with several Moro prisoners. Marched 5 miles down the estero (up which Ali's cannon had been brought, and down which we transported 44 captured lantacas and brass cannon in vintas), hunting ducks and rails with Genl. Wood en route, and boarded the Ranger in the Rio Grande.
- March 14, 1904. Left the mouth of Ali's estero on the right bank of the Rio Grande and steamed to Cottabato, where the lantacas were landed, and then passed down the Rio Grande before dark. (At dusk there was a flight of large Fruit Bats off the mouth of the Rio Grande.)
- March 14, 1904. Reached Zamboanga at 9 A. M.
- March 30, 1904. As Chief Surgeon of the Taraca Expedition against hostile Moros (March 30 to April 12, 1904), I left Zamboanga with General Wood's headquarters, on the steamship Borneo, at 2 P. M.
- March 31, 1904. Landed at Malabang at sunrise, and breakfasted at 23d Infantry mess. Left Malabang at 8:30 A. M., and rode 23 miles to Camp Vicars, where General Wood reviewed the troops of Major Bullard's command, at 4 P. M.
- April 1, 1904. Tramped over the country around Vicars from 9 to 12 M., and skinned nine birds.
- April 2, 1904. Left Camp Vicars with command in the early morning; joined by troops from Jolo, Zamboanga, and Malabang on the trail east of Camp Butig and proceeded to Lake Lanao at Saur, distance 15 miles from Vicars. Camp at Saur shot into by Moros, and two soldiers wounded, one slightly, the other severly in left thorax.
- April 3, 1904. Marched \_\_\_\_\_ miles to the rancheria of the Kabogatan of



Rogayan, at whose cotta we had a small fight in which one soldier, Corporal Charles R. Reagin, 17th Infantry) was cut by campilan on right side of chest, and 3 Moros were killed. Firing continued into the night. At daybreak our camp at Saur was fired into; but the firing was quickly silenced by Capt. Gatley's battery. At the extremity of a long ridge overlooking the Taraca Valley the command was again subjected to a heavy infantry fire by the Moros, who were again driven off by infantry firing and the work of Gatley's battery. The pack-train was again fired into while fording the River. Many Moros met us with flags as we marched into camp at Rogayan. One Kabogatan, accused of possessing three Krag rifles taken from the guard at Marahui was turned over to me to guard, by General Wood, with directions to kill him if occasion arose. I delivered him safe, and had to return his kris which I had taken from him myself.

April 4, 1904. Command took up march on Taraca at daybreak. Opened fire on Moro cotta at 10 A. M., with Battery, followed by Infantry advance and fire. Entered cotta at 10:50 A. M. At 10 A. M. General Wood received a message from Colonel Maus saying that his command near the mouth of Taraca River was being fired upon from all sides, and that two soldiers had been wounded. Col. Maus's command camped at Pentad. While we were shooting and burning the cottas at the Moros whom we had passed by on account of their white flags made a dastardly attack on the native cargadores accompanying our pack-train, cutting up one of them with a campilan while he was procuring drinking water. General Wood returned with the command to the cotta, and called upon the Datto to deliver

up three men who engaged in the affair. He was given 10 minutes in which to do this. After 12 minutes, artillery firing began, followed by Infantry advance, and three cottas were entered and burned within 15 minutes, and the Datto killed. With these cottas still burning the column, at 12:45 continued to advance on Taraca. At 4 P. M. we camped at Malungan, on the Taraca River, after shelling the place and shooting it up with heavy Infantry fire. A number of cottas were taken and put to the torch after having been fired upon. There was a good deal of return firing, but no American was hit.

April 5, 1904. Colonel Marston P. Maus, with two troops of the 14th Cavalry and two companies of the 22nd Infantry, from Camp Marahui, arrived from Pehtad for conference with Genl. Wood, at 6 A. M. He was accompanied by Major Bullard, governor of the Lake Lanao District. The 2 troops of cavalry joined Colonel Gerrard's squadron across the Taraca River. The two companies of Infantry acted as escort to Colonel Maus, returning to his camp at Pehtad. The main camp at Malungan (Ampuanaka's cotta), on the Taraca<sup>n</sup> river, was broken up at 8 A. M., and the Taraca cottas were successively reduced and burned in the direction of Lake Lanao. About noon the cotta of the Sultan of Taraca was, and many others at the mouth of the river were taken and burned by General Wood's main column, while a cavalry advance was synchronously made ~~by~~ on the right by Colonel Gerrard's cavalry, on the right bank of Taraca River; While Major Maney's battalion paralleled these lines on the left, reducing many large cottas and meeting with considerable resistance. His loss comprised one man killed,



and Sergeant Lewis, Hosp. Corps, very severely wounded by a cut from a campilan, severing shoulder through clavicle and spinousprocess of scapula. Sixteen Moro dead were counted by Major Maney's column, including 2 Sultans and a Datto; and seven lantacas were captured. I returned with General Wood's column to the old camp at Malungan early in the afternoon. We were promptly fired into by Moros across the river, who were easily driven off by two companies placed across the river. After resting 30 minutes and eating a light luncheon and drinking a cup of coffee, I accompanied a small command down the left bank of the Taraca River, along the district burned during the morning. Each cotta along the left bank was examined for cannon and lantacas clear down to the mouth of the river, where Capt Mc. Coy and I shot; had some game bird shooting, returning with the command to Malungan at dusk.

October 6, 1904. Three expeditions went out, leaving a battalion of the 17th Infantry to guard the camp at Malungan. Leaving at 7 A. M., I accompanied General Wood's main column, moving east up the left bank of the Taraca River. Friendly Moros had their property respected, but dozens of cottas (forts) were burned, and a good deal of shooting was attended with little result. There were no casualties on our side except a bamboo wound received by a soldier who fell into a spiked ditch. At 10 A. M. we rested while a command was sent up the left fork of the Taraca River. Following the left fork, the main column advanced to Talauan. Considerable unimportant fighting and firing took place without casualties on our side, and many cottas were destroyed. At



I discovered the main trail of the fleeing Moros whose beaten forces had been led up into the mountains. This decided General Wood to go into camp, and have the Cavalry column, and guard at Malungan join him there. This was done, but with some fighting and loss to the Moros, and consumed a portion of the next day.

April 7, 1904. Accompanied two troops of Cavalry (Pope's and Grays's) commanded by Captain Gray and accompanied by Capt. Mc Coy. Marching northeast, after several unimportant actions, from 12 M. to 1:30 P. M., the new fort of Datto Huahuilama was reduced and occupied and the fleeing Moros subjected to withering fire as they escaped into the hills. Another column followed the main Moro trail into the mountains, where considerable fighting resulted in slight Moro losses.

April 8, 1904. The united command marched at 9 A. M., and camped (at 1 P. M.) late in the day, at Basayan, near Ragayan, near Lake Lanao, where Capt. Mc. Coy and I did some game bird shooting, and birds were collected.

April 9, 1904. Several columns operated during the entire day in the low, marshy rice lands south of the Taraca River as far as Saur, where I took part in a small action between Moros in vintas, who had attacked Thomas, the guide, and General Wood's headquarters, behind the advance guard. A number of Moros were killed during the day; and, after dark, I went back a mile or two to assist in bringing two wounded soldiers into camp at Saur. One of them, shot through the liver, died at midnight.

April 10, 1904. Marched from Saur, on Lake Lanao, to Camp Vicars, 12 miles. A few Moro shots were again fired into the rear guard and pack train as they ascended the hill at Saur; but a Cavalry detachment had previously started to this locality where cottas and houses

were soon set ablaze in punishment. (General Wood, Capt. Mc Coy and myself had some excellent duck and waders shooting in a marsh at Saur where a couple of Grebes were killed and preserved.

- April 11, 1904. Starting at 6:55 A. M., rode with Genl. Wood's headquarters from Camp Vicars to Malabang, 23 miles, arriving at 1 P. M., and went aboard ship after luncheon at Dr. Flagg's quarters.
- April 12, 1904. Arrived at Zamboanga at dawn.
- April 13 to 17, 1904. At Zamboanga.
- April 18, 1904. Left Zamboanga at 9:30 P. M., on the Constabulary steamer Ranger for a journey to Baganga via the north coast of Mindanao, thence overland to Compostella, headwaters of the Agusan River, down said river to Butuan, and thence returning to Zamboanga on the Ranger. (April 18 to May , 1904).
- April 19, 1904. At sea all day.
- April 20, 1904. Landed at Surigao at 11 A. M. Spent 2 hours ashore. Collected shells, plants, and birds. Steamed to Placier, 20 miles (14 miles in a straight line), arriving late in the afternoon. On this trip the scenery was very fine. The steamer threaded its way among small islands amid scenery delightful, usually with green water and mangroves in the foreground, fishermen in barotas, fish weirs, grass-roofed, matting-coated houses of bamboo, cocconut trees and hemp, with hills behind. Collected a rock, mineral ores, shells, and plants.

April 21, 1904. Left Placer before sunrise and steamed 5 miles to Bacuag, and remained about an hour. Shot two Sunbirds, called Tahm~~se~~ by the Boholanos of Bacuag. Steamed to Dinagat, on Dinagat Island, about 15 miles north of Surigao. Landed and hunted an hour; climbed to the summit of a densely wooded hill. Collected birds, plants, and a human skull. Steamed to Surigao, where I was ashore from 3:30 to 6 P. M. Collected birds. Saw a new species of Rhipidusa. One plant and 4 rocks collected. Left Surigao at 8 P. M., and steamed for the mouth of the Agusan River (here called Butuan River.)

April 22, 1904. Arrived off the mouth of the Agusan River during the night. Sent ashore and got 10 Constabulary soldiers under Captain Ole Waloe, of the Philippine Constabulary, who accompanied us from Surigao. Senor Escolastico G. Zapanta, Sub-Inspector, P. C., who was in immediate command of these 10 men, also accompanied us. Steamed up the coast to the mouth of the Tubay River and landed at Tubay, where, in the course of two hours, the Presidente supplied us with boats (called barotas) and expert boatmen for a trip up the Tubay River to Lake Sapongan (also called Lake Mainit). We were able to set out by 1:30 P. M., and hoped to reach the town of Santlega by night, and Lake Mainit (equals Sapongan) during the night, in order to pass the unfriendly native village of Jabanga during the darkness and surprise the camp of General Adriano Concepcion, the leader of insurrectos who captured the city of Surigao from a guard of American Constabulary, killing Captain commanding, and looting the town, about a year ago. The river current was so swift that only poles could be used in propelling



the barotas up stream, and the boatmen were in the water much of the time, getting past difficult place. Towards dark a heavy rain fell, and camp was made under a bower of tropical growth near a native shack on the right (west) bank of the stream, where it rained intermittently throughout the night.

April 23, 1904. Left bower on Tubay River at dawn. Our barotas had not been poled a half-mile before a tropical storm broke upon us with all its fury. The wind blew from the north, twisting branches from the trees and filling the air with flying branches and leaves. Our course was sheltered by high riverbanks upon which the tallest trees were swayed like blades of grass and often broken off or torn up by the roots. Sitting as low as possible in the barotas which were being constantly baled out, and often leaving them to the boatmen while we walked along the bank or waded against the current of the always rising river, we succeeded in reaching a large low island on the left bank, where other native boats had been held up, unable to pass the mouths of two confluent rivers, a mile below Santiaga. The river water which had previously been perfectly

Data for Itinerary.

(Gleaned from large packet of personal orders and reports, etc.)

- June 11, 1903. Left Fort Snelling, Minnesota for service in the Philippine Islands (authority paragraph 26, Special Orders, No. 72, Headquarters of the Army, Adjutant General's Office, Washington, March 27, 1903.
- July 1, 1903. Left San Francisco on the U. S. A. T. Sherman for Manila, Philippine Islands.
- July 21, 1903. Arrived at the island of Guam, Pacific Ocean.
- July 21, 1903. Sailed from Guam for Manila.
- July 26, 1903. Arrived at Manila and reported for duty.
- July 28, 1903. Ordered to proceed to Zamboanga, Mindanao and report for assignment to duty in the Department of Mindanao (Par. 1, S. O. No. 141, Headquarters Division of the Philippines, Manila, P. I., July 28, 1903.
- August 6, 1903. Reported at Zamboanga, where I was assigned for station and duty at Pantar, Mindanao (authority paragraph 3, Special Orders No. 155, Headquarters of Mindanao, P. I., August 7, 1903).
- August 8, 1903. Sailed on the U. S. A. T. "Borneo" for Iligen, Mindanao.
- August 10, 1903. Reported for duty at Camp Pantar, 5 miles north of Lake Lanao, Mindanao.
- August 11, to September 27. On duty at Camp Pantar.
- Sept. 28 and 29, 1903. En route from Camp Pantar, Mindanao to Malabang and Parang, Mindanao, P. I., pursuant to telegraphic instructions from Department Commander, dated Sept. 27, 1903.
- Sept. 30, 1903. Left Parang, Mindanao, P. I., as Surgeon of Butig Expedition.
- "Oct. 1 to 6, 1903. "On duty as Surgeon with Butig Expedition, Mindanao, P. I."



- October 7 to 31, 1903. At Malabang, Mindanao; enroute from Malabang to Zamboanga, Mindanao; and at Zamboanga, pursuant to telegraphic orders and verbal instructions of Department Commander.
- Jan. 1-28, 1904. On special service at Headquarters, Department of Mindanao, (Zamboanga), per verbal orders of Department Commander.
- Jan. 29-Feb. 2, 1904. On duty with the Department Commander as Chief Surgeon of expedition against Moros of Dumanquilas Bay, southern Mindanao.
- Feb. 3-6, 1904. On duty with Department Commander on expedition from Zamboanga to visit troops in the field on the islands of Sulu and Siasi, P. I., and returning.
- Feb. 7-28, 1904. On duty with Department Commander and members of his staff, on inspecting trips on the north coast of Mindanao, and the islands of Sulu and Cagayan Sulu, returning to Zamboanga.
- Feb. 29, 1904. On court-martial duty at Zamboanga.
- March 1-15, 1904. En route to and on duty as Chief Surgeon of the "Rio Grande Expedition," Mindanao, P. I., against hostile Moros concentrated under Datto Ali, in fortifications in Seranaya Marsh and threatening the peace and good government in Cottabato Valley confirmed by authority paragraph 4, Special Orders, No. 58, Headquarters Department of Mindanao, Zamboanga, Mindanao, P. I., March 18, 1904.
- April 13-17, 1904. On special service at Dept. Headq. (Zamboanga).
- April 18 to May 13, 1904. On duty with expedition from Zamboanga to Baganga, thence overland to Compostella, headwaters of the Agusan River, down said river to Butuan, and return to Zamboanga, all on the Island of Mindanao, P. I. (authority confirmed



by paragraph 5, Special Orders, No. 155, dated Headquarters Department of Mindanao, Zamboanga, Mindanao, P. I., June 6, 1904.)

- May 14-31, 1904. On duty as Chief Surgeon of expeditionary brigade known as the Second Rio Grande Expedition, against hostile Moros, under the leadership of Datto Ali, in the vicinity of Lake Buluan and Simpitan, Mindanao, P. I. (Left Zamboanga May 14. Reported to Gen. Wood, at Cabacsalan Island, May 16. Returned to Zamboanga with General Wood May 31, 1904.) (Authority paragraph 2), Field Orders, No. 12, dated Headquarters, Department of Mindanao. In the field. Cabacsalan, May 18, 1904, and verbal orders confirmed by paragraph 1, Special Orders, No. 118, Headquarters Department of Mindanao, dated Zamboanga, Mindanao, P. I., June 9, 1904.
- June 1-8, 1904. On special service at Department Headquarters, Zamboanga, Mindanao, P. I.
- June 9, 1904-July 24, 1904. On expedition from Zamboanga, Mindanao, to Davao and Mount Apo, Mindanao, and returning to Zamboanga. (Verbal authority of Department Commander.)
- July 25 to Aug. 8, 1904. On duty as surgeon, post of Zamboanga, Mindanao, P. I. (authority paragraph 2, Special Orders, No. 161, Headquarters Department of Mindanao, dated Zamboanga, Aug. 4, 1904.
- Aug. 9-17, 1904. En route from Zamboanga, Mindanao, to First Division Hospital, Manila, P. I. (authority paragraph 1, Special Orders, No. 161, Headquarters Department of Mindanao, dated Zamboanga, Aug. 4, 1904.
- August 18, 1904-Sept. 14, 1904. Patient in First Division Hospital, Manila, P. I.

Sept. 15-Oct. 17, 1904. En route to U. S. Army General Hospital at San Francisco, California, for treatment (authority paragraph 3, Special Orders, No. 188, dated Headquarters Philippines Division, Manila, P. I., September 9, 1904.

The ensuing winter (1904-05) was spent in Washington, D. C., in identifying the collections of mammals and birds in the United States National Museum.

Data for Itinerary and Narrative.

Elevations. Some person at Baguio gave me the following, in Dec., 1905.:

Monte Santo Tomas	7340 feet
Trinidad	4500 feet
Military Reserve, Baguio	4891 feet.

July 1, 1903. Went aboard U. S. A T. Sherman, at San Francisco at 10 A. M. Ship sailed at 12 M. Anchored off Black Point to take on Conant coin. Weighed anchor after luncheon, and passed through Golden Gate, wher Heermann's and Western Gulls and Californica Murres were abundant; also saw quite a number of Brandt Cormorants; one flock of 50 Northern Phalaropes. Pilot left ship at 3:30 P. M. Soon after the ship was turned north and pursued a course parallel to Marin County, California, for 50 miles, after which the course was a trifle south of west. California Guillemots were in small flocks, very gentle and very numerous. They dived whenever a wave was about to strike them. Hermann and Western Gulls were less numerous but common.

July 2, 1903. High wind from the North, with heavy sea. A few Albatrosses followed the ship all day; no other birds seen. Whales were seen spouting.

July 3, 1903. Whales spouting. Albatrosses were the only birds in sight. Two pairs followed the ship until sunset or later, frequently alighting upon the water astern to feed. They were paired; and when one alighted, its mate usually settled near it. The quills are quite black, darker than the sooty body. The head, or at least the front half or more is white, and there is considerable white on upper and under tail coverts. The bill is black. This is the Black-footed Albatross (Diomedea nigripes).

July 4, 1903. I saw birds away astern, this morning, which appeared to be Petrels. As many as six Black-footed Albatrosses were seen at one moment. Some lacked the white upper and under tail-coverts, but had black bills. No other birds were seen.



July 5, 1903. Eight Albatrosses settled in one spot astern. A dozen were in view at one time.

July 6, 7 and 8, 1903. A few Petrels were seen each day. They had white at base of tail. Black-footed Albatrosses are still numerous, following the ship. The young are dusky. Some had whitish breasts; but no yellow-billed (*immutabilis*) birds appeared as we passed to the northwest of the Hawaiian Islands. One Dolphin and one flyingfish were noted on the 8th.

July 9 and 10, 1903. Black-footed Albatrosses present in considerable numbers. Petrels abundant.

July 11, 1903. Black-footed Albatrosses are becoming scarce. Three were seen to fly straight away from the ship until they disappeared to the southward. No yellow-billed Albatrosses have been seen. A few Petrels were seen.

July 12, 1903 (13th dropped on crossing the 180th meridian.) Only one Black-footed Albatross (an adult) was seen today. Large numbers of sooty-backed, white-breasted birds--probably Terns--appeared beside the ship. They sometimes passed within a few yards, one over the deck. We thought of angling for them with baited hooks, but they became scarce towards noon and then disappeared for the day. No Petrels were seen. Ocean intensely blue. One school of Dolphins.

July 14, 1903. Two sooty-backed Terns and many flyingfishes were noted.

July 15, 1903. I saw no birds, but many flying fishes. Major J. H. G. Gale saw one Tern and two Petrels.

July 16, 1903. Two very large, apparently white Terns, two Petrels, and many flyingfish.

July 17, 1903. Flying fishes very numerous, large and small, the latter leaving the water in showers. Tropic Birds were seen about ten times, usually in pairs. No other birds.

July 18, 1903. Flyingfishes abundant. Two Tropic Birds and one large, black-headed Gull.

July 19, 1903. Several pairs of Tropic Birds. A shark was attended by a small bird, perhaps a Petrel.

July 20, 1903. Island of Guam in sight at 5:30 A. M. Landed at 9 A. M. and returned to the ship at 1 P. M., sailing for Manila shortly after. During the four hours ashore, near the new cable station, I collected the skull of a Guam Deer (Rusa ), three Red Sunbirds (Myzomela rubrata,) and a small gathering of invertebrates and plants. I was accompanied by my old comrade of the Mexican Boundary Survey, Major Francis G. Irwin, Second U. S. Cavalry. A native boat took us ashore; a tropical shower interrupted our collecting, and a very low tide imprisoned our boat within a coral reef, detaining us so that we almost missed the transport. We saw a very large marine turtle, and the following named birds: Collocalia-----, Aplonias kittlitzi, Myzomela rubrata, the Guam Crow and many water birds. As the ship approached the Island of Guam in the early morning, a rocky headland was seen to be frequented by flocks of Boobies and other swimming birds; and a spicy-sweet fragrance of blooming flowers was wafted to us.

July 22 and 23, 1903. Several dusky, white-breasted Terns, perhaps Sterna fuliginosa, and one whitish Booby were the only birds noted.

July 24, 1903. School of Dolphins and one small, dark Petrel seen.

July 25, 1903. Sighted land on the Island of Luzon early in the forenoon, and in entering San Bernardino Strait, the first Philippine bird (Demiegretta sacra) flew across our bow.

Aug. 1, 1903. "On Sherman."

Oct. 19, 1903. As we steamed up the Rio Grande de Mindanao, Datto Piang fired his customary salute as General Wood's party approached.



Buldung-Butig Expedition.

The soldier of Captain Forsyth's command killed March 15, 1902, was Charles Keller, Troop "A", 15th Cavalry. Killed on the headwaters of the Lituan River, Mindanao, P. I.

In the camp near summit of divide, the surrounding mountains were usually devoid of trees except the fern-trees and a tree having large coriaceous leaves, whitish and woolly below, resembling Ceanothus. Some peaks were without trees, but all were green to the top except here and there where extensive fields of lava from more or less recent flows prevented plant growth.



ITINERARY.

Sept. 27, 1903.

At 10:30 A. M., Sept. 27, 1903, received order to join General Wood at Malabang not later than Sept. 29.

Left Pantar at 11:30 A. M. Put bedding roll on passing wagon train, and walked to Marahui, reporting to Major Bullard for transportation across Lake Lanao.

Sept. 28, 190<sup>3</sup>. Rose at 4 A. M. Left Marahui in barge with sail, escorted by Capt. Siviter and nine men, at 6:00 A. M. Reached Bayan, on south side of Lake, at 2 P. M., when mounted escort of four men escorted Capt. Siviter and myself to Camp Vicars, where I reported to Capt. Stephens for transportation to Malabang at 3:00 P. M.

Sept. 29, 190<sup>3</sup>. Left Camp Vicars at 5:30 A. M. and rode with escort of 4 light artillery men to Mataling Falls where I arrived at 8 A. M. and found ambulance being repaired. Left Mataling Falls at 10:30 A. M. and arrived at Malabang at 12 M. Reported to Col. Reed and received order to report at Parang to Capt. Koester, 15th Cavalry, as Surgeon for field service with squadron of cavalry and pack train. Reported at 10 P. M.

Sept. 30. Marched from Parang to Madalum, 17 miles.

October 1. Troops remained in camp at Madalum, on the Ambat River. Rode with Capts. Doray, Mc Coy and Pope with one troop of Cavalry to Datto Kali's village and returned; total distance 8 miles.

October 2. Marched to Forsyth's 1st camp, on Banganan River, 11 miles from MADALUM.

October 3. Marched to headwaters of the Nituan River and camped where Private Charles Keller was shot, March 15, 1902. Distance 4 miles.

October 4. Marched 1.5 miles to dry wash (Cararao Pass), at summit of mountain divide. With Capt. Mc Coy, one trooper, and one Moro ascended a peak to the right of camp which was named Mount Arnold Hague. Altitude about 6500 feet.

October 5. Crossed divide and descended 12 miles to Lake Butig.

October 6. Built bridge over Butig River and marched via Dato Grande's hacienda and Camp Vicars wagon-road to Malabang, 26 miles, where I reported to Col. Philip Reade.

(Lake Butig to Camp Butig 8 miles).

DATA FOR ITINERARY AND NARRATIVE.

Parang-Buldung-Lake Butig Expedition.

Buldung Country.--1500-2000 feet altitude. The inhabitants are descendants of Lake Lanao Moros, under two principal chiefs, Pandipatan Kali and Sultan Pitelan. About 5000 inhabitants.

Sept. 30, 1903. Met by one of Datto Pitelan's men on Ambal River where we were threatened but not attacked. Camped at Datto Pitelan's house in village of 7 houses called Madalum, 17 miles from Parang, by devious trail through forest jungles. At Madalum, Sultan Siatubuk called and paid his respects to Captain Koester, commanding.

October 1, 1903. Rode to Datto Kali's village with Captain's Dorey and Mc Coy, 4 miles from Madalum.

October 2, 1903. Crossed Ambal River about 11 o'clock. The trail, which had gradually ascended through a forest from the Ambal River, dropped to the Banganan River. About one-half mile up the Banganan River a waterfall more than 100 feet in height was passed. Camp was made on the Banganan River, 11 miles from Madalum. I climbed a hill across the Banganan River and slept in a wet forest on the grave of a Moro sub-datto killed by Lieutenant Forsyth's command, March 15, 1902, on hill 250 feet above the river.

October 3, 1903. Followed a hogback for 2 miles through a forest, when the trail dropped to the Nituan River, then up the river one mile to Forsyth's camp of March 14, 1902, where a soldier of his troop was killed by a shot from ambush. This camp was 15 miles from Madalum.

October 4, 1903. The command marched one mile to top of hill, then followed a ridge for a short distance and dropped abruptly to a broad dry wash in which we camped at a spring, at a place called Cararao, where rest houses had been built for Moros crossing the mountains. Captain Koester estimated the altitude of this



pass at 4500 feet. During the afternoon Captain Mc Coy and myself climbed to the top of a mountain on the right (east), which we estimated to be 6000 to 6500 feet in altitude and named the peak Mount Arnold Hague, cutting a suitable inscription on one of the few trees at the summit.

October 5, 1903. Marched 12 miles, from Cararao to the Butig Lakes.

October 6, 1903. Marched 8 miles to Camp Butig on the Vicars-Malabang wagon road, and thence to Malabang on the south coast of Mindanao. Distances. (Miles) Malabang to Parang, 34; Parang to Madalum, 17; to Forsyth's first camp, 11; to Forsyth's second camp, 4; to Cararao, 1.5; to Lake Butig, 12; to Camp Butig, to Malabang, 16.

DATA FOR ITINERARY AND NARRATIVE.

(Buldung-Butig Expedition).

As a rule the mountains were clothed at the top with a heavy growth of grass (10 feet high.)

Captain Mc Coy and Dr. Mearns ascended, and named one of the peaks Mount Arnold Hague. Datto Calle met us at the divide, a pass called Cararao by him.

October 6, 1903. Built a bridge across the Bootig River, and marched 26 miles to Malabang.

Sept. 27, 1903. Ordered to report to Genl. Wood at Malabang via Vicars not later than Sept. 29, 1903. Order received 10:30 A. M. Left camp with bedding-roll, grip, shotgun, and fish creel at 11:45 A. M. One wagon upset in descent to Pantar Bridge over the Agus River; another slid off the slippery road, and team ran away. Had narrow escape. Consider Moros less dangerous than Govt. mules; so cut loose from wagon-train and footed it to Marahui,  $4\frac{1}{2}$  miles, arriving at 1:45 P. M. First half of walk intensely hot; last half wet and chilly from thunder showers. The yawl boat was out on the Lake, so I could not start that night. Had a bath and good dinner with Captain Francis P. Switer, 28th Infantry. Called on Drs. Hicks and Connor, and on Major Bullard and Lt. Dougherty (his Adjutant), and other officers.

Sept. 28, 1903. Arose at 4 A. M. Breakfasted with Captain Switer at his company mess, on oatmeal, cream, coffee, fried bacon, and roasted duck. Set sail in 6 oared barge at 6 A. M. No wind. Could find no Moros willing to act as guide. Datto Pedro pretended to be sick. Set out with Captain Switer and 9 enlisted men of the 28th Infantry. Wind sprang up after 2 hours' rowing, very light, but in the right direction. Rowed much of the time. Sometimes wind helped. Arrived at S. W. end of Lake Lanao at 2 P. M.,

trip occupying 8 hours. Sailed inside of large fortified island near Bacoled. Moros manned the guns in the fort but did not fire upon us although our boat was within easy range of their guns. On landing, we found an escort awaiting us from Camp Vicars. Capt. Switer and his armed men accompanied them to the post, where we remained until morning. Camp Vicars was commanded by Capt. Stephens; and 1st Lt. Patterson was the Surgeon. Was also pleased to meet Capt. Sam. Leay. Spent a pleasant evening at Vicars. When crossing the Lake, enormous flocks of grasshoppers flying above the hills presented the appearance of one of our western sandstorms in the distance.

Sept. 29, 1903. Set out from Camp Vicars at 6 A. M. for Balabang.

Sept. 30, 1903. from 7 A. M. to 3:15 P. M. with troops commanded by Capt. Francis J. Koester from Parang to Buldung, 17 miles. Sultan Pitana was ugly but did not attack us.

October 1, 1903. Troops remained in camp all day. In the afternoon, escorted by one Troop of Cavalry, I accompanied Captains Forsyth, Dorey and Mc Coy to the Moro town of Madallam (Madalum?), 6 miles, and returned to Buldung. Sultan Satabug was hospitable.

October 2, 1903. Marched 15 miles from Buldung to top of hill. Pack train and one troop of cavalry camped on a river at the foot of the last hill.

October 3, 1903. Marched to the River, near the summit of the South Coast Range, and camped on the spot where Private Charles Keller, Troop , 15th Cavalry, was killed by Moros, March 15, 1902.

October 4, 1903. Marched from Keller's grave to sand wash at summit of mountain divide, 3 miles, arriving at 10:30 A. M. Only one pack train succeeded in reaching the camp. Rations nearly out. Forage did not arrive, and none of the cavalry horses had a feed of grain, but all were



allowed to graze though the grazing was poor. In the afternoon Captain Mc Coy, a soldier, a Moro, and myself climbed to the summit of Mount Arnold Hague. We estimated the pass at 4000 feet, and Mt. Hague 4500 feet; but a neighboring peak not much higher is marked 7100 feet on the charts.

Nov. 12, 1903. Landed on Island of Sulu, at beach near Siet Lake. Moros attacked troops before outposts could be placed. One Moro killed and two brought in wounded.

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Killed 20-30 Moros and wounded many.

Nov. 13, 1904. Took Cotta of Panglima Hassan, and killed 50 Moros wounding 100 or more.

Nov. 14, 1903. Camped at Upa's place.

Nov. 16, 1903. From the big camp at foot of Crater Lake Mountain, three columns of troops moved forward: Dr. Hicks with column on the right; Dr. Patterson with Major Bullard's central column; Drs. Lewis and Gynn with Scott's column on the left. I remained in camp at foot of Crater Lake Mountain. I heard heavy firing during the day. A stray bullet came into camp and badly wounded one of our men. 125 Moros killed, 76 in one stand.

Nov. 17, 1903. I accompanied column with General Wood to cotta where Colonel Hugh L. Scott was shot.

Nov. 18, 1903. Marched through the big swamp, around Crater Lake to beach at Siet Lake.

Nov. 19, 1903. Marched from the beach at Siet Lake to camp near Mt. Sulleman. After reaching camp made a cavalry reconnaissance in force. Found camp of refuge for families of Moros and their animals--carabaos and ponies. Burned the shacks, about 15.

Nov. 20, 1903. Took Andung's cottas and trenches, killing 76 of his

Moro followers. One American soldier killed, 2 wounded by spear-thrusts.

Bermann of "A" Troop 14th Cavalry was killed by gunshot, and barong in the hands of a Moro woman. "Martin Brennan was (the man) killed by bullet and barong."

Nov. 21, 1903. Marched from the beach at Taglibi to Jolo, Island of Sulu, 10 miles.

Nov. 22-26, 1903. Camped outside the walled city of Jolo, Island of Sulu, and visited the islands of Dungdung and Pata on the 25th, making collections on both islands as well as around Jolo.

December 5, 1903. Visited Santa Cruz Island off Zamboanga.

Dec. 11, 1903. " Pangapuyan Island, about 12 miles east of Zamboanga.

Dec. 11, 1903 " Balan-bilan Island (town same name) and then steamed to Pangapuyan Id., making collections.

Dec. 19 and 20, 1903. Visited Mercedes, 9 miles east of Zamboanga, Mindanao, and collected.

On Dec. 19th, again visited Pangapuyan Island.

Jan. 18, 1904. Visited Isabella, Basilan. Collected.

" 26 " " " " "

Jan. 30, 1904. In the Spanish stone fort at Margosatubig, called San Sofia, I saw 2 single-barrelled and 1 double-barrelled lantaca, besides a dozen Remington rifles.



Itinerary of trip on the Borneo.

(Oct. 16 to 27, 1903).

Oct. 16. Left Zamboanga at 10 P. M.

Oct. 17. Arrived at Tucuran at I remained on ship as it rained hard.

Oct. 18. Landed at Malabang at dawn. Landed at Parang about 2 P. M. and remained 2 hours. Anchored off R. Grande.

Oct. 19. Took launch Cheyenne at 5 A. M. up Rio Grande to Cotabato thence to Reina Regente and Lake Liguasan back to Cotabato and the ship the same night.

Oct. 20 and 21. En route to Baganga.

Oct. 22. Landed at Baganga, on the east coast, at 4:30 P. M., remaining until after dark.

October 23. Landed at Manay at 8 A. M. and remained about an hour. Landed at Mati at 3 P. M. and remained 2 hours.

October 24. Landed at Davao at dawn and left there after dark on the steam launch and boarded the Borneo at dawn at Santa Cruz, Bay of Davao, next day.

October 25. Landed at Santa Cruz at 7 A. M. and left at 8 A. M. Landed at Maliyam at 4 P. M., remaining until 5 P. M.

October 26. Landed at Makar at 6 A. M., remaining about 3 hours. Crossed Sarangani Bay to Bula, and remained 2 hours. Landed at Glan about 3 P. M., and remained until dark. I did not land at Glan, but remained aboard preparing birdskins. General Wood brought me 3 Pigeons, a Butorides, and a male of Oriolus steerei which he shot at Glan. We anchored so near shore that I made a good many bird observations from the deck. Many Golden and Ring Plovers, Sandpipers and Pigeons were shot by the party for food,



at Glan, where Capt. McCoy shot a Datto Monkey.

Oct. 27. Returned to Zamboanga.

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Collecting Stations.	Oct. 18, 1903.		
Malabang	"	"	"
Parang	"	"	"
Reina Regente	"	19,	"
Baganga	"	22,	"
Manay	"	23,	"
Mati	"	"	"
Davao	"	24	"
Santa Cruz	"	25	"
Maliyam	"	"	"
Makar ) Bula )	"	26	"
Sarangani Bay			
Glan	"	"	"

Report to Chief of Staff for Sept., 1903. Pantar, Sept. 1 to 26.  
Enroute for Pantar to Malabang and Parang Sept. 27 to 29, 1903. Sept. 30  
set out on Buldung Expedition from Parang, per telegraphic orders Dept.  
Commander dated Sept. 29, 1903.

October, 1903.

Oct. 1 to 7, 1903. On Buldung Expedition from Parang to Lake Butig, thence  
to Malabang.

Oct. 8. Enroute from Malabang to Zamboanga.

Oct. 9. Ordered on special service at Head., Dept. Mind., per verbal order  
Dept. Commander.

Oct. 16 to 27. Accompanied Department Commander on expedition of in-  
spection, etc., along the south coast of Mindanao, from Zamboanga to Baganga  
and returning.

Oct. 28 to 30. At Zamboanga.

Oct. 31, left Zamboanga with Dept. Commander, as Chief Surgeon of Lake  
Lanao and Second Sulu Expeditions.

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November, 1903.

Nov. 1 to 8. On duty as Chief Surgeon of the Lake Lanao Expedition.

Nov. 9 to 26. On duty as Chief Surgeon of the Second Sulu Expedition.

Nov. 27 to 30. On special service at Headquarters of Department of Mindanao,  
per verbal order of Department Commander.

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December, 1903.

Dec. 1 to 31. On special service at Headquarters, Dept. of Mindanao, per  
verbal order of Department Commander.

DATA FOR ITINERARY AND NARRATIVE.

Feb. 1, 1904. Arrived at Tambigan on Tambigan Bay, southern Mindanao. General Wood compelled the villagers (Moros) to produce the wife of a Filipino interpreter who was on board our ship, the Mindanao. The woman had been carried into slavery, and was found pregnant after 5 years' servitude.



SERANAYA EXPEDITION.

(Supplemental to data contained in old Itinerary.)

- March 9, 1904. At 6 A. M. one company was sent out in command of Captain Robert O. Van Horn, Seventeenth Infantry, accompanied by Private Darrah, Hospital Corps. Object, to bring up a heavier gun from Cotabato for shelling the Moro fort.
- March 10, 1904. Captain Van Horn's company arrived early in the forenoon with a 3.2 inch gun, which was immediately put in action. Lieutenant Mc Kenney's pedometer registered  $7\frac{1}{4}$  miles between Kudarangan and Barak. Shelled the Moro works all day and evening. Two companies (Allaire's and Devore's), under Major Charles M. Truitt, made a reconnaissance on the Moro right to within 500 yards of Ali's fort, accompanied by Dr. Brownless with Hospital Corps men.
- March 11, 1904. Major Truitt's battalion, with Captains Allaire, Devore, and Chrisman, started at 5 A. M. to make an attack on the Moro right; but white flags went up in the Seranaya fort as soon as the artillery firing from Gatley's battery was recommenced. Then the entire command was moved into the fort, which was found to be deserted. The temporary houses were burned. The fort, which is the greatest military work ever constructed by natives of the Philippine Islands, was dismantled, the guns and arms destroyed (blown up with their own powder), and became the base of operations against the scattered Moros.

When I first viewed the fort from within, I counted 56 mounted guns and 59 embrasures that were empty or with gun carriages from which the guns had been dismounted. Nearly all the guns were subsequently found in the moats surrounding the fort or buried in the ground. I counted, at first, the following:

34 Brass lantacas or bronze cannons

1 Brass Cannon--2 inch cal.

7 Iron " 3 " "

9 " " 5 " "

4 " " 2 " "

The iron cannon were exploded with Moro black powder.

Many of the lantakas were removed to the ships and carried to Zamboanga.

A plan of the fort was made, and the tracing from which blue prints can be made is on file at the Headquarters of the Department of Mindanao in Zamboanga.

March 12, 1904. The country, consisting of broad cogonals extending between Seranaya and Labas, is a moist prairie similar to those of Florida north of Lake Okeechobee. Along the Sibungan River and smaller streams there is heavy timber which is continuous on the hills.

March 14, 1904. Steamed down the Rio Grande from the mouth of the estero which drains the Seranaya Marsh. The grass islands floating down the Rio Grande were sometimes of an area equal to 150 feet square. One island contained 3 black house cats. We sent a native boat to rescue them before they drifted to sea out of the rivermouth; but the cats were so wild that they plunged into the river and swam, though they were caught and cared for by the Moros.

Left the mouth of the estero about the middle of the forenoon. Crocodile fenders--a sort of boom--were noted in front of each Moro boatlanding and places where the Moros bathe and wash their clothing. A crocodile 15 feet long was shot near Datto Piang's place. Piang's irrigation canal, on the right bank, is a large, swift stream of water and driftage. The water comes out with a rush, bearing a heavy burden of water cabbage, grass islands, and other driftage. Many cotton trees and hedges of large flower locust. A captive Chinese slave dealer with 2 pretty Moro maidens were taken aboard. Below Piang's we passed Datto Djimbangan's market, at the mouth of the Libungan River, with its block house and detachment of American soldiers. Passed Bulibud, belonging to the Princessa, on the left bank of the Rio Grande at 1:35 P. M. Passed the Sultana's place at 1:45 P. M. Left Cotabato for Zamboanga about 3 P. M. and finished the river by daylight.

March 15, 1904. Reached Zamboanga at 9 A. M.



Respectable Book No. 1.

March 31, 1904.

Landed at Malabang at sunrise, breakfasted at 23rd Infty, mess.  
Left Malabang at 8:30 A. M. and rode to Camp Vicars, 23 miles, arriving  
at 4 P. M. At Mataling Falls we stopped for lunch. At the sawmill  
Lieut. Donaldson gave us hot coffee, sandwiches and pickles. At Vicars  
we were met by Major Bullard and Lt. Merry and the command. 3 companies  
Infty., 1 Mtn. Battery and wagon and pack mule trains were turned out for  
review. Lieutenant Moss took me in, and cared for me in fine form. We  
found it very cold at Vicars. En route from Malabang, we saw tracks of  
deer and hogs, and a squirrel or Tupia at Mata

The birds seen between the landing at Malabang and Vicars were:

A large Crake at Malabang.

A small dusky Rail at "

Swallow-Shrike

Brown Java Sparrow.

Short tailed Hirundo at Malabang.

Long-tailed " on wire

Dusky Swift

Brown Shrike

Long tailed Shrike

Blue & white Kingfisher

Brown-breasted blue " at Mataling Falls

Black Hornbill, large flock

Quail

Jungle Fowl

Large Carfophaga (atriens)

Ring-necked Dove  
 Spotted Butea Hawk  
 Rusty-breasted Hawk. One at Mataling Falls.  
 White-headed hawk.  
 Haliaeetus leucogaster  
 Anthus  
 Motacilla--In road and at Vicars, abundant.  
 Cerchrieir  
 Ramcrow. One species at Malabang. Another at Vicars.  
 Blue-ringed Paroquet  
 Green Parrot  
 Cuckoo  
 Merops americanus P. L. Müller from Malabang to Mataling Falls above that.  
 Pantar species (M. philippinus).  
 Carabao Bird. Laffron pl.  
 Anthus at Vicars  
 Ivory-billed woodpecker  
 Little woodpecker  
 Circus  
 White-headed Chat  
 Brown Java Sparrow  
 Naked-headed Starling  
 Oriole--not black-capped.  
 Hairy back  
 Tole everetti.

April 1, 1904.

At Vicars tramped from 9-12 A. M. Collected the following birds:

13424. Budytes female adult.  
13425 " " "  
13426 Mirafra "  
13427 " adult

Packed in cigar box and mailed to Zamboanga.

13428 Quail female adult  
13429 Warbler male adult  
13430 Rail-Crake male adult  
13431 Snipe and Gallmago megala, tail 2.5 inches.  
13432 Black Rock thrush female adult

Saw besides:

White-headed Hawk

White-bellied Sea Eagle

April 2, 1904.

The command left Camp Vicars early in the morning and marched 15 miles  
to Sauer.

Contract Surgeon Connor distributed one Hosp. Corps man to each organization and kept the rest, except my orderly, with him, attached to Capt. Gray's squadron.

Boy's name: Ma-ha-tui-dig.

At Sauer on Lake Lanao, the Moros fired on one camp, wounding Nathan Harned, Artif. Co. H. 23rd Inft. Age 39, B. P. Pa. Services 7 1/12. G. S. W. Rem. 45. Thorax, left side, sever bullet palpable under skin over ribs in axillary line. Three ribs fractured. Transferred to Marahin without slip.



Major Truitt's battalion.

Dr. Schockley

Sergt. Flake

Pvt. 1st Cl. Day

Major Manny's battalion.

Dr. Patterson

Sergt. Lewis

Pvt. 1 Cl. McGlade

17th Batterh:

Pvt. 1 Cl. Benton

Pvt. Donegan.

Capt. Allaire's battalion.

Dr. Harris

Pvt. 1 Cl. Vanderpool.

Pvt. Brower

Capt. Gray's squadron:

Dr. Connor

2 Corps Men:

Louis Reens

Pvt. Sevoie

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Note.--Pvt. 1st Cl. Boak to accompany patient to Marhain.  
 " " " Lacy--Orderly Dr. Mearns.

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Private Edgar G. Boak, Hosp. Corps, will accompany patient Artificer Nathan Harned, Co. H. 23 Infty. (Bonnicastle's) to camp at Taraca River reporting with patient to Surgeon, then to Commanding Officer, presenting Commanding General's compliments, and requesting that patient be transported, properly guarded, to hospital at Camp Marahui as soon as practicable.

No Moro boats should be allowed to approach en route to Taraca River, and the vinta used should be kept well of shore. By command of Major Gen. Wood.

April 2, 1904.

Between Camp Vicars and Sauer (on Lake Lanao) were seen.

One Deer

One Hog

Pteropus (large) in bamboo trees and flying at Sauer. At the latter place saw smaller bats (Size of Rat).

(The country was mostly grass with patches of bamboo and cultivated fields).

The Birds were

Black Mallards.--Hundreds seen in the lake. One shot and eating throat

filled with fresh-water univalves size of grape. 3 kept.

Dendrocygna--Abundant lake.

Solitary Tattler

Lorgi Gallinago

Quail

Ring-necked Dove

Brown Pigeon at Sauer.

Rice Bird

Brown Vesper Sparrow

Littark

Matacilla

Raincrow

Black Hornbill

Red-billed Frogmouth at Sauer.

Reed Warbler -- large

Hairy-back

Locustella (equals Cisticola)

Rifle Bird

Snake-birds at Sauer

Gallinula chloropus

Crow

Oriole.--A pair chased a crow far and fiercely.

White-headed Hawk

••  
Haliaeetus leucogaster

Horned Crake-Gallinule

Swallow-Shrike

Long-tailed Shrike

Circus--Light gray with white breast

Long-tailed Hirundo

Small dusky Swift

(Saw no Merops)

Great Blue Heron at Sauer.

Carabao Bird

Brown-breasted Thrush

Solitary Tattler.

April 3, 1904.

Black Hornbill

Hairy-back

Brown Rice Bird

Rifle Bird



Snakebird

Dusky Mallard

Dendrocygna

Gallinula

Crow

Brown-breasted Thrush.

Red-billed Frogmouth

Sylvia Acanthopucusta lugubris

Land shells quite uncommon

Norred Crake--Gallinule

Small dusky Rail

Large Kingfisher, with reddish belly, red bill, much white on wing.

Circus--Plain gray with white under parts

White-headed Hawk

Haliaeetus leucogaster

Solitary Tattler

Greater Jack Snipe (Gallinago)

Swallow-Shrike

Long-tailed Swallow

Rice-bird

Squir to Rogayan, Taraca Valley.

Corporal Charles R. Reagin, Co. H., 17 Infty. cut by campilan R. side chest low down. Cut in shirt 1 inch.

Three Moro humentados ran amuck in a cotta close to camp this evening. Reagin was cut, and the three Moros killed. Firing kept up until near dark, when Moros withdrew from our vicinity. (I heard no shots during the ensuing night. )

Many Moros met us with flags as we marched into this camp at Rogayan (cotta of the Kabogatan of Rogayan). One Kabogatan, accused of possessing 3 Krag guns taken from guard at Maralin was turned over to me to guard with directions to kill him if occasion arose. I delivered him safe and had to return his kris which I had taken from him myself.

April 4, 1904.

(Rogayan to Taraca River.)

Dusky Mallards, Dendrocygnas, Solitary Tattlers and large Gallinagos flew overhead continually during the night, which was bright moonlight. In the morning large flocks of Black Ibises flew about. I went out with Capt. Jones and shot a Great Blue Heron (young) which was given to Ma-ha-tui-dig for sow-sow. Solitary Tattlers were abundant in the rice paddies as were the narrow-tailed Jack Snipe. Plenty of large yellow Wagtails, Rice-Birds, and Carabao-Birds. Herons came into camp and filled up on boiled rice and hardtack scarcely stepping out of our way. A few horned Crake-Gallinules.

Camp not fired on during the night; slept well. Rose at daybreak and packed Moro loot and made up bedding roll and packed haversack with dressings, whiskey and first-aid packets for Ma-ha-tui-dig to carry. As we took up the march to Taraca we saw many Wagtails, several Ring-necks in bamboo beside streams, where Hairy-backs were numerous. Green Warblers were also seen and flocks of Swallow-Shrikes, Blue and white Kingfisher. One little blue and brown Kingfisher on a pretty stream.

Opened fire on Moro cotta, at 10 o'clock, with battery followed by Infantry. advance and fire. Entered Cotta 10:50 A. M.

At 10 o'clock General Wood received a message from Colonel Mans saying



he was being fired on from all directions and had two men wounded. Could not get up the river.

While we were shooting and burning up the cottas at the Moros whom we had passed by on account of their white flags made a dastardly attack on the native cargadores with the pack train, cutting one with campilan. General Wood returned to \_\_\_\_\_ and called on the Datto to deliver up a man, who, under a flag of truce, chopped up a cargador. Datto replied that three Moros who made the attack were not subject to his control. He was given 10 minutes in which to give up the man, with the alternative of being shot up. In 12 minutes the artillery fire commenced, and four cottas were entered and fired within 15 minutes. With the cottas still burning the column at 12:45 continued to advance on Taraca. At 4 P. M. camped at Malungan, after shelling the place and shooting it up with heavy infantry fire. A large number of cottas were taken after being fired upon. There was a good deal of return firing, but no American hit.

To be transferred to the hospital at Camp Marahui Vaughan, James N., Sergeant Troop "D" 14th Cavalry. Age 31. Birthplace Kentucky. Service 3 3/12 years. Acute Dysentery.  
Taraca River.

April 5, 1904.

Colonel Mans with 2 Troops 14th Cavalry and 2 companies 22nd Infty. arrived from Pehtad for conference with General Wood at 6 A. M. With him were my old friend Anjie (Moro) and Major Bullard. Drs. Lambert and Coffin reported.

The two troops of Cavalry joined Colonel Gerrard's squadron across Taraca River. The two companies 22nd Infty. acted as escort to Col. Mans



Mans returning to his camp at Pehtad. The main camp at Malungan (Ampuaynakas Cotta) on Taraca River, broke at 8 A. M. Malungan (Ampuanaka's cotta, on Taraca River.).

At daybreak the crows began to assemble until hundreds had arrived and took the camp in fearless array. Ducks flew over with Ibises in numbers before dawn. Last night and this morning White-headed Hawks assembled in dozens, attracted by the smoke arising from burning forts.

On Taraca River many large snakes, length and color of blue racers, but thicker with short tails--build of Tropidonotus. Reputed to be poisonous, but with small, delicate head.

At Ampuanaka's cotta millions of small land snails covered our bedding (some saved). Frogs common (2 saved).

Rice-Birds abundant.

Long-tailed Hirundo abundant

Purple Gallinule

Horned "

Striped Locustella

Plain " (buff)

Blue and white Kingfisher

White-headed Hawks in flocks attracted by smoke of burning houses.

Large Wagtails in numbers

Anthus

Great Blue Heron Harrier

Solitary Tattler

Swallow-Shrike

White-headed Hawks utter a whining cry from the cocoanut tops. Dozens follow the troops.

At 9:30 a lusty shaven Moro Humentado leaped from a ditch in front of us and attacked a soldier whom he struck thrice with campilon raised high and gleaming in the sunshine--a grand sight. The soldier, tho' surprised, parried each blow successfully and was only wounded in the pants. The Moro was quickly shot. He had long chin whiskers and was a fine chap. I took his new sarong at General Wood's suggestion. His fine campilan was given to the soldier who was attacked.

Great Blue Herons plenty and tame.

Ring-necked Doves.

Hairy-backs around cottas. Heard a song resembling that of the Black-throated Sunbird but did not see the bird. Exquisite butterflies, a large black-and white one is very attractive.

At mouth of Taraca River the cotta of the Sultan of Taraca and many

other cottas were burned, about noon. One Blue Rock Thrush, small Blue and brown Kingfishers, very many Ring-necked Doves. Brown (very small) Heron Brown-breasted large blue Kingfisher, Gallinula, Dendocygna, Black Mallard, Carabaa Bird.

Returned to old camp early in the afternoon, Moros shot into us immediately on our return but were easily driven out by two companies placed across the Taraca River which returned as soon as the cavalry got back on other side.

During the morning Major Manly's battlion had operated on the south more or less parallel to the Taraci River. He lost one man (Private Oliver (?) Newcombe of "K" 17th Infty. (Hobbs's Co.), whose head was blown off as he scaled the fort wall. Sergeant Lewis of the Hospital Corps had a campilan cut severing shoulder through clavicle and spinous process of scapula. Both were carried to Col. Moss's camp at on the Lake. Lewis is expected to recover. Seven laretacas were captured. Sixteen Moro dead were counted, including two Sultans.

After resting 30 minutes and eating a light luncheon and drinking a cup of coffee, I accompanied a small command down the left bank of the Taraca River along the district burned in the morning. In the savannas at the mouth of the river McCoy and I shot waterhens and chickens on the return trip. Thomas found one large iron canon buried in mud, which must be burst tomorrow. Returned to camp at dusk. Dr. Harris got Moro stuff galore. Barn Swallows were skimming over Taraca River in numbers. Brown Herons and Carabao Birds were numerous at mouth of river.

April 6, 1904.

Three expeditions went out Malungan to Galauan, Taraca Valley, leaving the 17th Infty. battalion to guard camp. I accompanied the main column,



with General Wood. Left camp at 7 A. M., moved east up Taraca River on left bank. Friendly Moros had their property respected, but dozens of cottas (forts) were burned, and there was a good deal of shooting with little result. No casualties on our side except a bamboo wound of a soldier who fell in a ditch. About 10 o'clock we rested and sent a force farther up the left fork of Taraca River. I was slightly burned on leg by a falling bamboo cinder, but chiefly injured in pants and drawers.

13433 Large Brown-breasted Kingfisher female adult, Taraca River.

Our advance now firing on cotta upstream. Birds seen:

Orioles,  
Brown Rice-birds  
Naked-headed Starlings  
Caged Parraquet & Civet found in cottas.  
Caraboo-Birds  
Great Blue Herons (too tame to even fly as column passed near)  
No wild parrots were seen.  
Ring-necked Doves less common than on lower stream.  
A few large bronze-green backed Pigeons  
Hairy-backs  
Ring-necked Towbee-tail  
Dendrocygna  
Wagtail, /shot one and saw many large brown-and-blue Kingfishers (No. 13333)  
also Kingfishers blue and white.  
Quail, on the marshes bordering the hills towards the head of Taraca River  
where were flocks of dark Ibises and enormous flocks of Carabou Birds.

When we had followed the left fork of Taraca River to a point further than which horses could not be safely handled the General remained and rested while the greater part of the command was sent forward to destroy forts and houses. They saw four Moros entering the foothills who stopped to fight, but probably all escaped. I went out in an open marsh to shoot, and soon discovered tracks of fleeing Moros and at last the main trail of men, women, carabao and ponies, made by their beaten forces. Returning to camp I found that Col. Harbord and Capts. Darrah and Saltzman had brought me in a Civet (*Viverra tagalunga*) female adult, in a cage; also a huge wooden bowl. I at once showed General Wood the main Moro trail which



caused him to remain at Galauan and move up the camp and other columns and chase the Moros up in the hills. Major Truitt led the return battalion. His rear guard was fired on near our camp, Maj. Truitt returned to the spot and drove the Moros back, killing 4 of them, after which he continued to the last camp and moved up all but the cavalry which did not get in.

Late in the afternoon it rained heavily, but we staff people escaped wetting by improvising a shelter.

April 7.

Pvt. Louis Reens, H. C., presents a Moro flag to the U. S. National Museum. Huahulama Cotta April 7, 1904.

Huahulama Cotta was taken from 12 to 1:30 P. M. As we entered the fort, April 7, I found a suit of armor of carabao horn and leather but a Hosp. Corps man (Reens) lost it later

April 8, 1904. Galauan to Basayan.

Command marched at 9 A. M. to Basayan (near Ragayan, on Lake Lanao).

Flocks of Quail; families with young apparently about half grown.  
 Naked-headed Starlings.  
 Kingfishers, blue and white.  
 " " " brown, same size.  
 Nest of Brown Java Sparrow not examined. Abundant.  
 Flocks of Solitary Tattlers.  
 " " Golden Plover.  
 Jack Snipe becoming scarce.  
 Dusky Mallard and Dendrocygna  
 Striped Reedwarbler  
 Small dusky rail  
 Great Blue Heron. Mostly young. Adults can be told by their black necks.  
 Skulk in the grass with only head and neck in view and seldom taking flight.

No large Parrots or Cockatoos seen in the lake country on this trip.  
 No Merops either.

In the camp at Basayan near Ragayan which was reached at 1 o'clock

we found large flocks of Carabo-Birds and dark-colored Ibises. I shot a Carabao-Bird No. 13434 male adult (*Bubulcus coromandus* (Bodd.)), with nuptial plumes. A Hospital Corps man cooked and ate it, and said it was extremely good. Testes enormous.

A good many Ring-necked Doves.

Flocks of Dusky Mallards, whose flight is like that of *Anas boschas*.

The *Dendrocygna* is the large, white-rumped species known to the Filipinos as Pata Marina, the smaller species being Pata Monte. I have not seen the latter on the Lake Lanao.

White-breasted Rail.

Motacilla.

No shrikes seen on Taraca River.

White-headed Hawks very abundant.

No *Tringoides* seen on Taraca River.

Circus--2 kinds, gray, and black and gray.

A few dusky swifts.

Many long-tailed *Hirundos*.

Swallow Shrikes.

Yesterday, April 7, a stout Snake was found, head gone, eaten by a Hawk. It was purplish black, the scales above barely edged with yellow; below all bright yellow.

Capt. McCoy and I hunted from 5 to 6 in a marsh at our camp. We got 3 dusky Mallards and a 13335 little brown Heron male adult. Saw many horned Railcrakes, a good many narrow-tailed Gallinagos, a Bittern, and great numbers of Solitary Tattlers. A few Water-Hens. One large Brown and blue kingfisher, many *Locustillas* and large warblers, brown Rice-Birds in great flocks.

At evening Bitterns were booming, and numbers of Great Blue Herons were seen flying over.

April 9, 1904. Basayan, via Ragayan, to Saurir.

On waking, shadowy forms of crows were passing over, and as soon as it was light a pair of naked-headed Starlings flew over my bed. Wagtails were flying about our camp and numerous small red and green Paraquets flew over with loud squeaks. Like *Ampelis cedrorum*. Some alighted in a



betelnut palm, others on the bamboo of our cotta.

Two sick men had to be put on orderlies' horses. One of them fainted. When relieved, he was carried by soldiers and natives making the trip pretty well.

When we had ascended the high mesa south of the lake, we were joined by Major Mamey's Infty. column that had started at daybreak to take a line of cottas west of us extending to Lake Lanao.

The marshes spread around us were alive with Herons, Bitterns, dark-colored Ibises and dusky Mallards which latter could be distinguished in flight by the pure white color of the under side of wing.

At Saur, where we camped, Genl. Wood and Capt. McCoy shot ducks, waterhens, etc. Capt. McCoy shot my first specimen of a grebe for me.

13336 Grebe(male ?) adult. Saur, Lake Lanao, Mindanao, P. I.

April 9, 1904.

*Podiceps philippensis*(Bonn.)

Camp Vicars, Mind., P. I.,

April 11, 1904.

Capt. Flagg,

Surgeon,

Malabang.

Will arrive at Malabang early this afternoon.

Mearns,

O. B.

Surgeon.

Edgar A. Mearns,

Major & Surgeon, U. S. A.



April 10, 1904.

Marched from Saurir, on Lake Lanao to Camp Vicars, 12 miles. As soon as we reached the grassy pantars from Saurir to Vicars we again found the Long-tailed Shrike, which had been absent from the Lake marshes.

Soaring above the meadows were the usual number of White-headed Hawks and harriers (gray, and gray-and-black species). One big spotted bar-tailed Haws was seen at Raincrows, Red-and-Green Paraquets, Brown Rice-Birds, Red-billed Frogmouths, Striped Locustella, etc. In the early morning, before leaving the Lake, at Saurir, I went shooting with Gen. Wood and Capt. McCoy. We shot about 20 ducks, mostly the larger Tree-Duck (*Dendrocygna*); also a Grebe and Water Hens. The General killed two dusky Mallards at the same shot, and many others were seen. A grayish wader with pure white wings, the size of a Woodcock was quite common, in pairs, on the lily pads and water cabbage patches bordering the grassy shores, but we shot none. Several Ospreys were fishing. No Gulls or Terns were seen at the Lake, but at Saurir were many Anlingas. One Butorides, many Great Blue Herons, and some Little Brown Herons. Waterhens were abundant and tame. One or two horned Gallinules were flushed. Water hens (*Gallinula*) often alighted on the rank grass. Several white-breasted Rails were seen on the grassy shore. The large, red-billed, brown and blue Kingfisher was seen on the water for the first time. I had always seen them inland before this.

The small brown-and-blue Kingfisher was also seen at Saurir. White headed Chats, Brown Pigeons, Ring-Doves were also seen there; and Orioles and Hairy-backs were common. Swallows and Swifts, Swallow-Shrikes, Brown-breasted Thrush, White-headed Chat. All at Saurir, where I also saw two Hogs (*Sus*) the evening before when bringing Corporal Wampler in. Big Bat rookery there also (*Pteropus*).

Sick sent to Marahui:

Lewis & Harned.

To Vicars:

Stedham, wound.

Forbes Burdeshew, C. 14 Cav. Hemorrhoids.

Daniel Blocher, Troop C., 14 Cav., Malarial Fever.

To Malabang:

5 men left at Mataling Falls.

5 " " " Malabang.

## Itinerary of the Taraca Expedition.

Left Zamboanga March 31, Reached Malabang April 1, and camped at Mataling Falls.

April 2-- Camped at Saur.

April 3-- At Ragaya.

" 4-- " Taraca.

" 5-- " "

" 6-- " Galanan.

" 7-- " "

" 8-- " Basayan

" 9-- " Saur.

" 10-- " Mataling Falls.

" 11-- On Sea

" 12-- Arrived at Zamboanga.

(Dr. Patterson's command).

April 11, 1904.

Rode from Camp Vicars to Malabang, 23 miles. Started 6:55 and arrived at 1 P. M. On the pantars about Vicars were:

Raincrows  
Wagtails  
Crow  
Brown Rice-Birds  
Striped Locustillas  
Long-tailed Shrike  
Ring-necked Dove.

At Camp Butig we saw the first Brown Shrike.

Innumerable birds sang in the forest, but I could not distinguish most of them. Chickens crowed, Monkeys ran up and down the vines hanging from the tall trees, many of which had beautiful flowers. Flocks of Brown, and Black Hornbills trooped past, Frogmouths caught butterflies in the air.



I noted two new birds: a couple of soft little brown fellows sat on a dry twig near the road. They looked something like the English Robin. A larger bird, bright red in front, crossed the road in front of us and darted into the black shadow of the heavy forest timber. Bridled Swallows perched on telegraph wire and dry twigs of trees. White-headed Chats, Black-and-white Shrikes, Hairy-backs, Hawks, Orioles, Flycatchers, Wagtails, Raincrows, Crows, Naked-headed Starlings, little dusky Swifts, and Pigeons made up the bulk of the bird life. Many little red-and-green Parquets seen.

April 12, 1904.

Arrived at Zamboanga at dawn. Made up some Grebe skins, unpacked my luggage, pressed plants, and labelled shells collected on the Taraca Expedition. Prepared reports for Chief Surgeon. Attended ladies' afternoon tea at Club at 5:30. Attended Bogobo dance and hop at club from 8:30 to 11 at club. The Powell boys called on me during the day; brought me next of Black-throated Sunbird and a coarse Sedge. Promised to shoot with them Saturday if here. Blue Rock Thrush in church yard. Capt. Wheeler and a corporal wounded at Taraca camp, making Col. Man's casualties 7, same as ours.



Additional data on Second Taraca Expedition, Island of Mindanao, P. I.,

March 30 to April 12, 1904.

As chief Surgeon, the following data was given me before starting for  
Lake Lanao from Zamboanga:

Scheme for Taraca Expedition.

To be assembled at Marahui:

8 companies of the 22nd Infantry.

2 troops of the 14th Cavalry.

At Camp Vicars:

6 companies of the 23rd Infantry,

4 " " " 17th "

2 troops " " 14th Cavalry,

1 Platoon of Gatley's light battery.

My medical organization was as follows:

	Organizations	Medical officers	N. C. O.	Corps Men
Major Maney's battalion.....	4 Cos. 17th Infty.	1	1	3
" Truitt's " .....	4 " 23d "	1	1	3
Lt. Westervelt's platoon .....	1 Platoon 17th Battery			2
Major O'Connor's battalion.....	2 Troops 14th Cav.	1	1	2
Major Hardie's " .....	2 Troops 14th Cav.	1		2
Captain Allaire's.....	2 Cos. 23d Infty.	1		2
	4 " 22d "	1	1	3
	4 " " "	1	1	3
	Totals	8	5	20

Medical personnel.

Chief Surgeon, Dr. Mearns.

Assistant (Adjutant) Dr. Patterson.

\*  
Supplies for Taraca Expedition.

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\* One Medical and Surgical chest ordered to be in readiness at Camp Vicars.  
Weight, 100 pounds.

---

Dr. Patterson will have a medical and a surgical chest (2). Weight, 200 pounds.

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Shipped on the U. S. A. T. Borneo:

4 Medical chests	400	pounds
1 Box Surgical dressings	100	"
2 Boxes First Aid Packets	160	"
1 Box Liquors	70	"
1 Gold Medal Cot	<u>30</u>	"
Total	760	"
1 Box of lanterns	40	"
1 Bundle (Hospital tent fly)	20	"
1 axe	5	"
1 Water can and buckets	50	"
1 Box	<u>25</u>	"

Grand Total 900 pounds.

March 31, 1904. at Mataling Falls we stopped for lunch. At the sawmill, Lieutenant Donaldson gave us hot coffee, sandwiches, and pickles.

At Vicars General Wood's command was met by Major Bullard and Lieutenant Merry and the command, consisting of 3 companies of infantry, 1 mountain Battery, and wagon and pack mule trains, turned out for review. Lieutenant Moss took me in and cared for me most hospitably. We found it very cold at Vicars!

April 1, 1904. While shooting birds, I came across Mr. Ireland of the Chicago University, who accompanied General Wood on this expedition. Mr. Ireland

made a photograph of Capt. Mc Coy, Col. Herbord, and myself, which he sent me later from Hong Kong.

April 2, 1904. Command marched from Camp Vicars to Saur on Lake Lanao.

The country was mostly cogonals, with patches of bamboo and cultivated fields. Contract Surgeon Connor distributed one Hospital Corps man to each organization and kept the rest, except my orderly, with him, attached to Captain Gray's command.

I acquired, at Vicars, a private Moro cargadore named Mah-hah-tin-dig, a name that soon became familiar in the camps. At Saur ducks were numerous when I first arrived and some fine mallards were shot and recovered by Mahatindig. While we were eating our ducks, at Saur, the Moros began firing on our camp, about sundown, and wounded two soldiers, one slightly, the other severely. Nathan Harned, Artif. Co. "H", 23rd Infantry, Age. 39; B. P. Pa.; Service 7 1/12; G. S. W. Remington, 45; Thorax, left side, severe; bullet palpable under skin over ribs in axillary line; 3 ribs fractured. This soldier was transferred to Marahui, without transfer slip. I wrote the following order:

Private Edgar L. Rock, Hosp. Corps, will accompany patient Artificier Nathan Harned, Co. "H", 23rd Infantry (Bonnycastle's) to camp at Taraca River (across Lake Lanao), reporting to Commanding Officer, presenting General Wood's compliments, and requesting that patient be transported, properly guarded, to hospital at Camp Marahui, as soon as practicable.

No Moro boats should be allowed to approach en route to Taraca River, and the vinta used should be kept well off shore.

"By command of Maj. Genl. Wood,

"Langhorne,

"Chief Staff."

This man finally recovered.



April 3, 1904.

\*  
Medical organization.

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\*Note--Private I Cl. Boak to accompany patient to Camp Marahui.  
" " " Lacey, orderly to Dr. Mearns.

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April 3, 1904. Marched from Saur to Rogayan in the Taraca Valley. Many Moros met us with flags as we marched into Rogayan, the kota of the Kabogatan of Rogayan. On the march, one Kobogatan, accused of possessing 3 Krag guns taken from the guard at Camp Marahui, was turned over to me to guard by General Wood, with directions to destroy him if the necessity arose. I delivered him safe, and was obliged to return his kris which I myself had taken from him.

~~April 4, 1904 Rogayan~~

Three Moro juramentados ran amuck in a kota close to our camp at Rogayan. Corporal Charles R. Reagin, Co. "H", 17th Infantry, was cut by a campilan, R. side of chest low down. Cut in shirt, one inch. Reagin was cut, and the three Moros killed. Firing was kept up until dark, when Moros withdrew from our vicinity. I heard no shots during the night, and slept well.

April 4, 1904. Rogayan to Taraca River. I arose before daybreak and packed Moro loot for the U. S. N. M.; made up bedding roll, and packed haversack with dressings, whiskey, and first aid packets for Ma-ha-tin-dig to carry.

"To be transferred to the hospital at Camp Marahui: Vaughan, James N., Sergeant, Troop "D", 14th Cavalry. Age 31. Birthplace, Kentucky. Service, 3 3/12 years. Diagnosis, Acute Dysentery."

April 5, 1904. When Colonel Maus arrived for a conference with General Wood, I had the pleasure of meeting my old friend Angie (Moro), who acted for Col. Maus as interpreter and guide. Doctors Lambert and Coffin reported.

During the forenoon the command moved down the Taraca valley, Major Maney's command diverging to the left, cavalry on the right bank, infantry and artillery on the left, the latter commanded by General Wood. I accompanied the middle column, and, at 9:30 A. M., saw a lusty, shaven Moro juramentado leap from a ditch in front of us and attack a soldier, the last of the advance guard, whom he struck thrice with campilan raised high and gleaming in the sunlight--a grand sight. The soldier, though surprised, parried each blow successfully, and was wounded only in the pants which dropped down around his legs. The Moro, who had long chin whiskers and was a fine physical specimen, was quickly shot. I took his new sarong, and his campilan was given to the soldier who was attacked.

During the morning, Major Maney's battalion had operated on the south, more or less parallel to the Taraca River. He lost one man (Private Oliver (?) Newcombe of "K" Company, 17th Infantry (Hobbs's), whose head was blown off as he scaled the wall of a Moro fort. Sergeant Lewis of the Hospital Corps had a campilan cut, delivered by a Moro Sultan, which severed the shoulder through clavicle and spinous process of scapula. Both were carried to Colonel Moss's camp. Lewis is expected to recover (which he did).

April 6, 1904. Marched from Malungan to Galauan up the Taraca Valley. On the way I was slightly burned on the leg by a falling bamboo cinder, but chiefly injured in the pants and drawers. When we had followed the Left Fork of the Taraca River to a point further than which horses could not be safely handled, the command halted, while a detachment was sent forward to destroy forts and houses. They saw 4 Moros entering the foothills who stopped to fight, but probably all escaped. I went out from Galauan, into an open marsh to shoot birds, and soon discovered tracks of fleeing Moros and at last the main trail of men, women, carabao and ponies, made by their beaten and retreating forces. I at once showed General Wood the main Moro trail, which

caused him to remain at Galauan and move up the camp and other columns and to chase the Moros up in the hills. Major Truitt led the return battalion. His rear guard was fired upon near our camp (at Galauan), which caused Major Truitt to return. He drove the Moros back, killing 4 of them, after which he continued to the last camp (Malungan) and brought up all but the cavalry, which did not get in. Late in the afternoon it rained heavily; but we staff people escaped a wetting by improvising a shelter under which we slept comfortably.

April 7, 1904. One column pursued the Moros into the mountains. Another column (cavalry), which I accompanied, reduced Huahulama's fort, which occupied a high, rounded hill in a remote part of the Taraca Valley.

April 8, 1904. Galauan to Basayan.

April 9, 1904. Basayan, via Rogayan, to Saur on Lake Lanao. Two sick men had to be put on orderlies' horses. One of them fainted; when relieved somewhat, he was carried by soldiers and natives, making the trip in fairly good condition. When the command had ascended the high mesa south of Lake Lanao, it was joined by Major Maney's infantry column that had left Basayan at daybreak to take a line of cottas west of us extending to Lake Lanao. At Saur, where we camped for the night, General Wood and Captain Mc Coy shot ducks; and, on a halt during the march, General Wood shot two Mallard Ducks with a pistol taking off the second duck's head, and calling the shot beforehand.

April 10, 1904. From Saur, on Lake Lanao to Camp Vicars, through cogon-covered pantars locally known as cogonals.

Memorandum:-- Second Taraca Expedition.

Sick sent to Camp Marahui (afterwards Keithley):--

Lewis and Harned.



Sick sent to Camp Vicars:--

Stidham--wound

Forbes Burdeshew, Troop "C", 14th Cavalry--Hemorrhoids.

Daniel Blocher, Troop "C", 14th Cavalry, Malarial fever.

Sink sent to Malabang:--

5 men left at Mataling Falls.

5 " " " Malabang.

Note.--Captain Wheeler and a Corporal wounded at Taraca camp, make Colonel Maus's casualites 7, the same as ours.

Dr. Patterson's Itinerary of Second Taraca Expedition.

Left Zamboanga March 31, 1904.

Reached Malabang April 1, and camped at Mataling Falls.

April 2, 1904	Camped at Saur.
April 3, 1904.	" " Ragayan
April 4, 1904	" " Taraca
April 5, 1904	" " "
April 6, 1904	" " Galauan
April 7, 1904	" " "
April 8, 1904	" " Basayan
April 9, 1904	" " Saur
April 10, 1904	" " Mataling Falls
April 11, 1904	At sea
April 12, 1904	Arrived at Zamboanga.

(Dr. Patterson's command.)

April 11, 1904. Rode from Camp Vicars to Malabang, 23 miles. Started at 6:55

A. M. and arrived at 1 P. M.

April 12, 1904. Arrived at Zamboanga at dawn. Made up some Grebe skins; unpacked my luggage; pressed plants and labelled shells collected on the Second Taraca Expedition; prepared reports for Chief Surgeon; attended ladies' afternoon tea at officers' club at 5:30 P. M.; attended Bogobo dance and hop at officers' club from 8:30 to 11 P. M. The Powell boys (children of Judge Powell) called on me during the day, and brought me the nest of Blackthroated Sunbird, and a coarse sedge. Promised to shoot with them Saturday if here.

April 18, 1904.

Left Zamboanga at 9:30 A. M. on Constabulary steamer Ranger for Surigao, etc., after dining at the Joneses where I met Mrs. Dr. Bradley. Going to the wharf I had an opportunity to note the surprising agility of the small fruit-eating Bat, which runs nimbly about the branches of the large-flowered Locust tree, on the fruit of which the species is now feeding.

April 19, 1904.

At sea all day. Plenty of fat flying fish and a few large Terns. Large mackerel are high jumpers. Caught no fish on our trolling line.

April 20, 1904.

A few Sterna bergii. Arrived at Surigao at 11 A. M. Spent 2 hours ashore. Shot three birds: (No. 13341) Lark, Little Blue heron (not preserved) Little red-and Green Paraquet, (13342). Collected plants and shells. Then steamed to Placer.

At Surigao saw both species of

Hirundo r. gutturalis and H. javanica.  
Swallow-Shrike  
White-headed Chat  
Crow  
Raincrow  
Brown Rice-Bird  
Large Hawk, white-headed  
Ring-necked Plover, large  
Black Starling  
Brown Shrike, 1  
2 little dark Rail  
4 Black-footed Sandpiper.  
1 Drab Snipe (Numnuis) (No. 13351).  
1 Sunbird sp.? black-throated  
Blue-and-white Kingfisher  
Motacilla.



"Letter of Fr. Pablo Pastells to Reverend Fr. Juan Capell, S. J.  
Manila, April 20, 1887."

Hydrography.--"The Agusan [River] is the next in importance to the Rio Grande. It rises in the mountains of Maginbay, Taggopo, and Capungunan and runs N. E. until it reaches Compostela, where it takes a N. W. direction. At Talacogan it changes decidedly and after a series of turns and windings takes a general northern direction and disembogues in the Bay of Butuan. This river, in its prolonged course, is joined both on the right and left by numerous tributaries, the most important of which are: On the right, the Simulao, the Hibon, and the Uana; on the left, the Manat, Baobo, Ihanan, Umayan, and Ujut. The river Agusan can be navigated with a "Baroto" (small banca or native boat) from its mouth to its confluence with the Aguibauar or about a day's journey above Compostela."

(April 20--Surigao).

Large blue-and-brown Kingfisher.

Ring-necked Towhee-tail. A pair of them worried a crow that flew away with what looked like a small egg on its bill.

Merops. sp.?

April 20, Placer.

Saw both species of Hirundo.

H. javanica constantly alighted on the awning of the steamer.

Blue-and-white Kingfisher.

Larger dusky Swift.

Least Swallow-Swift-Shows a little white when flying away from one.

Larger Ring-necked Plover

Ring-necked Towhee-tail

Crow

Brown Java Sparrow

White-headed Chat.

Doves (green?) and many small birds were seen

Collected shells, plants and 1 rock and mammal, large rat in drain.

The trip of 20 miles (14 direct) from Surigao to Placer was among small islands. The steamer threaded its way among them passing through narrow channels amid scenery delightful, usually with green water and mangroves

in the foreground, with hills behind. Fishermen and fish wiers, matting houses, grass-roofed, cocoanuts, hemp, etc.

April 21, 1904.

Left Placer before sunrise and steamed 5 miles to Bacuag. Shot two male Red-breasted Sunbirds (Nos. 13343-4), called Tahm-se by the Boholanos (3/4 of the town are Boholanos).

Black-throated Sunbirds were also abundant.

Also shot a Ring-necked Dove and a

Brown-breasted Thrush. (13346)

Saw plenty Blue-and-white Kingfishers.

White-headed Chat.

Hirundo javanica

Swallow-Shrike

White-headed Hawk

Brown Rice-Bird

Orange-breasted Green Pigeon

Carpophaga aeneus

Tringoides

Larger Ring-necked Plover

Crow

Ring-necked Towhee-Tail

Raincrow.

Steamed to Dinagat Island April 21, 15 miles north of Surigao, and landed at Dinagat. Hunted an hour, climbed to summit of a densely wooded hill. Birds scarce. Saw a reddish brown bird size of Agelanis with harsh note. Heard loud sepulchral cry of a large wood bird. Collected a new shell, a rock, and three birds.

13347 Raincrow male adult

13348 Dicaeum red breast " "

13349 Cinnerys dinagatensis male adult

Found graveyard. Skulls of natives abundant in boxes on surface. Obtained one good skull lacking lower jaw--Visayan (No. 5655).

Gathered a few plants.

Hirundo javanica--Common

Swallow-Shrike

Crow

Large white-breasted Dicaeum

White-headed Hawk

Brown Rice-Bird

Tingoides

One White Heron on roof of house. No saffron plumes. Carabao Bird ? ?



White-headed Chat.

No mammals seen.

Steamed to Surigao, where I was ashore from 3:30 to 6 P. M. Shot mate to the Lark (13350) (female adult) and the same Curlew (13351) seen before, male adult.  
 Shot at brown Rail.  
 Saw Blue-and-brown Kingfisher,  
 Merops  
 Brown Java Sparrow  
 White-breasted Rail  
 White-bellied Eagle  
 White-headed Hawk  
 Red-breasted and Black-throated Sunbirds  
 Small Brown Shrike  
 Motacilla  
 Tringoides  
 Swallow-Shrike  
 Black-and-white Towhee (Rhipidura) a pair on fences and under houses in town. Wing mostly white. Head and back slate-black, wings dropped  
 Very gentle,--new to me.

Crow

Black Starling

Orange-breasted Green Pigeon

Plain green Pigeon, no wing-bars

Cuckoo size of Green Pigeon

Raincrow

*Carpophaga aeneus* -- two.

*Hirundo*--both species.

Large green Parrot, blue or crown, in captivity

Many Cayamans said to be in Surigao River. No mammal seen. One plant and 4 rocks collected.

Left Surigao at 8 P. M. and steamed for mouth of Agusan River (here called Butuan River).

April 22, 1904.

Arrived off mouth Agusan River during night. Enormous flocks of white birds constantly arising from bars at mouth of river. Some probably Shore Birds; but *Sterna bergii* very numerous. Sent ashore and got 10 constabulary soldiers from island at mouth of Agusan River. Then steamed to mouth of Tubay River for (barotas) in which to ascend to Lapongan (Mainit) Lake, hoping to reach Santiago today, and Lapongan Lake during the night, in order to pass unfriendly native villages by night, in order to surprise the camp



of Adriano Concepcion, the leader of insurrectos who captured Surigao from an American constabulary guard a year ago.

At mouth of river, town of Tubay, had to wait 2 hours for boats and oarsmen. Shot

Sunbird, female and saw  
 Fan-tailed Flycatchers  
 Blue-and white Kingfisher (Rhipidura)  
 Crow,  
 White-headed Chat,  
 Tringoides  
 Hairy-backs,  
 Swallow-Shrike  
 Long-tailed Hirundo,  
 Black Sunbird  
 Sterna bergii.

Started up the Tubay River at 1:30 P. M. One pair White-headed kingfishers perched side-by-side on snag, looking downward

Many long-tailed Hirundos  
 " Swallow-Shrikes  
 " Butozides  
 " Orioles  
 " Tringoides  
 " Numenius tricolor  
 " crows  
 " small sandpipers some turning red on bread and head.  
 " Todwits and large Totanus glothia  
 " Solitary Tattlers  
 " Stone-colored Sandpipers  
 " Carabao-Birds  
 " Blue and white Kingfishers.  
 One White-bellied Eagle  
 Three (1 pair) blue and chestnut Kingfisher (large)  
 One rusty gray bird size Thrush  
 " Stone Curlew  
 White-headed Chat  
 Dusky Swift  
 Brown Java Sparrow.  
 Flock 3 Cockatoos  
 One-red-and-green Paraquet.  
 Red-legged Tattler  
 Raincrow  
 The White-headed and red-and-brown Kingfishers became common, and allowed the native barotes to glide close beneath them.  
 One Aubinga,  
 Black-billed White heron seen singly several places.  
 Small sepia-brown Doves  
 Flock of 14 brown Hornbills roared across the river.

Butorides extremely numerous  
 Short-tailed Hirundos  
 Long-tailed small Swifts  
 Dusky Swifts exceedingly numerous  
 Another pair of Sea Eagles  
 Small Motacilla common  
 Golden Plovers with black bellies  
 Butorides very abundant. One nest with half-grown young running about in driftage.  
 Brown Rice-Bird.  
 Large snipe, white tail and rump.  
 Crows in flocks feeding on shore.  
 Many small dusky-backed Barbets in cocoanuts at mouth of river (I have specimens).  
 Waterhen  
 Golden Plovers with black breasts  
 More large blue-and brown kingfishers  
 White-headed Hawks  
 One very dark green (& maroon?)  
 Small Pigeon  
 White-headed Kingfisher always sits dejected with head down.  
 Waders, especially curlew and  
 Godwits (?) abundant still  
 Black-billed, yellow-footed Heron (white) common singly.  
 Water-hens on banks near grass.

Towards dark it began raining, and we camped under a bower of tropical growth, near a hidden shack on the right (west) bank of the river, where it rained intermittently through the night. Towards morning a pool had risen around our bower of banana leaves high enough to flood our ponchos and wet us thoroughly. The mosquitoes, bugs of all kinds and lizards continually annoyed us.

Honey Creepers  
 Crows  
 White-headed Chats and  
 Black-throated sunbirds and  
 small dark Barbets.

At Tubay, at the mouth of the Tubay River, I shot

2 Golden Honey Creepers and a  
 Black-throated Sunbird.

Only saved one Honey Creeper, female adult, (13352)

April 24, 1904.

At the town of Jabonga on Lake Lapongan, I shot:



13353 Red-breasted Sunbird      male adult  
 13354 Black-throated      "      female  
 Anthus, No. 13355      male adult

Between the Lake and Santiago:

Blue-Flycatcher (Hypothymis) 13356, male adult, bill and feet blue like back.  
 Naked-headed Starling, ovipositing, female adult, No. 13357.

On the Tubay River, below Santiago:

Blue and brown Kingfisher, No. 13358, female adult  
 " " " " " 13359 " "  
 White-headed Kingfisher " 13360 male adult

April 23, 1904.

Left bower on Tubay River in early morning. Before we had poled a half-mile a tropical storm broke upon us with all its fury. The wind blew from the north, twisting branches from the trees and filling the air with flying branches and leaves.

We sat as low as possible in the barotas, sometimes walking on the bank or wading against the current, which continually rose higher and soon from perfectly clear the water changed to muddy brown, ever rising higher, until before reaching Santiago we came to two impassable river mouths, both on the left bank of the Tubay. As always happens, the hurricane turned about and came back to us from the South, rain pouring down in deluges. Tying our barotas to the bank we sought the shelter of a native house for protection from the cold and force of the rain which pelted like hail; but our combined weight crushed the supports of the light dwelling of bamboo, matting and thatch, so that it crashed to the ground; but we still had the steep roof over us and found even an improved shelter. From natives in barotas we purchased a big dimijon of bino which enheartened our boatmen. This must have been the fiercest part of the storm, for the sky was black and the air filled with flying twigs and limbs that twitted along like birds.



The two side streams poured turbid avalanches of water into the Tubay. The natives said we were upon an island that might be flooded by the further rising of these streams, which our boats could not cross. Santiago with its houses and inviting convent awaited us only a mile away. Towards night, the rain, having become an ordinary drizzle, the streams began to lower, and at length an experiment was made of sending a bance without load, in charge of our boatmen to try to pass the mouths of the two rivers, after which we all followed safely. (Needle trees grow here). Lieutenant Zapanti and 10 constabulary soldiers had left us lower down intending to follow a trail to Santiago; but the rapid rising of streams had thwarted this intention, and the question of sending a relief boat was discussed, but, owing to the lateness of the hour was deemed inexpedient. Zapanti and his detachment must be left behind, if we would follow General Concepcion with such dispatch as to prevent his friends from notifying him of our approach. The convent at Santiago had been blown down, together with many other houses, during the day, by the hurricane; but the Presidente installed us in a neighboring house where we cooked & partially dried our clothing until it became necessary to proceed--at 10 P. M.--in order to reach the stronghold of General Concepcion before daylight. Our navy, which had consisted of 5 barotas propelled by expert boatmen using poles, was here reduced to 4, with paddles replacing the pushing poles. I went in the flagship with Colonel Harbord again, and we had 8 instead of 10 boatmen. Except for the heavy clouds it would have been bright as the moon was high and full. We passed swiftly up this portion of the Tubay River, which is a long estuary of the Lake. 7 hours brought us to the town of Jabanga, which our fleet passed like a cloud with never a splash of a paddle. Our success depended upon being able to pass Jabanga village without the knowledge of the inhabitants. Many lights were burning, but not so much as a dog bark was heard. The

skilful paddling soon brought us around a distant point of the Lake, and at length we landed far up the west side of Lake Sapongan on a shady beach, where water shells were piled in deep windrows. A house was soon reached and placed under guard and Capt. McCoy and one soldier left in charge. Two other houses were similarly guarded. Then the trail led up a steep hill, very rocky with endless vines and entanglements and plenty of thorns and spines upon the branches. The soil was slippery and strewn with jagged rocks. Crossing ravines the natives led with but little noise, but we slid and tumbled like a herd of stampeding carabao. Lieutenant Quackenbush, who weighed 200, made strenuous efforts to be noiseless, which usually resulted in his sliding down the banks like an avalanch. At length the native constabulary soldiers awaited us on a steep bank to enforce silence and vigilance. At the top of the hill we found a cultivated area, and the trail led us down a steep ravine towards the lake where we came upon a house which was silently surrounded by 3 officers and about 6 soldiers, one of whom called upon General Concepcion to surrender. At first children came to the door, then an old man who held a conversation with a native soldier. Then the women and children came out with a few men and boys. Again Concepcion was called upon to surrender. At length he came to the door after making sure there was no chance of escaping in any direction. As he appeared in the door he exclaimed: "Peace, peace!" All the guns were aimed at him, and he was ordered to throw up his hands which he was slow in doing. Then he came out and bent down on one knee, using the Spanish word for "peace." The house was searched for documents and weapons, some of which were found, and neighboring houses were searched for his confederates; but no persons of importance were found. The women



were examined and questioned and sent back into the house, and only General Adriano Concepcion bound and taken to the Lake. On the way to the boats I gathered shells and rocks.

While Griffin was cooking breakfast we swam in the Lake which we afterwards found to be alive with Crocodiles, two of which were shot as we descended the Tuba River. While eating breakfast, Pvt. Skane (Capt. McCoy's orderly) let his winchester shot-gun off in camp and shot a boatman in the arm and forearm, inflicting a severe wound (buckshot) which I dressed. More shells were then collected and we started across the lake, and in the direction of Jabanga to skirt some lily-pads and marsh grass where we shot Tree Ducks (*Dendrocygna*) Purple Gallinules, and Waterhens, then stopped at Jabanga, where I shot 2 Red-breasted Sunbirds, a Titlark and a Black-throated Sunbird. The birds seen on the Lake additional to the above were:

Red-billed Frogmouth  
 Goatsucker  
 Long-and Short-tailed Hirundos  
 Swallow Shrike  
 Crow,  
 2 species of Motacilla  
 White-headed Chat  
 White-tailed Hawk  
 Blue and white Kingfisher  
 Blue and brown " large  
 White-headed " "  
 Tringoides  
 Little Brown Rail  
 Brown Rice-bird  
*Carpophaga aeneus*  
 Raincrow  
 Gray Cuckoo, small  
 Hairy-back  
 Rifle-Bird  
 Naked-headed Starling  
 Little Brown dove

Leaving Jabonga at 10 A. M. we paddled down the clear and gently flowing river. Many Water Turkeys (Plotus) sat with wings akimbo and we shot one fine Crocodile, Large, thick-billed purple Gallinules and Waterhens



Tringoides and Rails were numerous on the shores. A little Black and White Kingfisher darted across the stream. It was no larger than a Java Sparrow. Green Herons (Butorides) were exceedingly abundant everywhere. Orioles were rather scarce. Two species of Wagtails were lively elements of the bird scenery. The Naked-headed Starling was often seen. Capt. McCoy shot one, a laying female. (No. 13357).

At Santiago, we stopped awhile then proceeded down the swift portion of the Tubay. Shooting the rapids up which our lusty boatmen had pushed us with so much difficulty was less exciting than we had anticipated, and gave us no special sensations other than that of smooth and swift transit. An occasional choppy sea was crossed with an occasional stray wave-crest slopping into the boat, always in the least convenient part. Shooting was difficult. We peppered one Crocodile and killed a few birds. Great numbers of Terns and waders were seen when we went up, but they had evidently betaken themselves to the river and lake on account of the hurricane, and few were seen as we went down. There were no Terns. Phalaropes and comparatively few waders. Going up we were afraid of shooting for fear of conveying an alarm to Genl. Concepcion. The birds seen on the Lake and River, altogether, were as follows:

1. Sooty Tern--One dead and spoiled (eaten) found below Santiago.
2. White-winged Tern. The pearl gray color of mantle obsolete. Hydrochelidon leucoptera ?? in flocks of 1-200 as we ascended, mostly just below Santiago.
3. Dendrocycna--Abundant on lake.
4. Plotus melanogaster -- Very abundant everywhere. Sat on stakes and snags and sometimes high trees, drying wings. Tumbled into water and swam with only head and neck out. Only few males in breeding plumage.
5. Phalarope. In flocks all sizes up to 500. Single birds swam within a few yards of our boats. The first I have seen in the Philippines.
6. Black Heron (apparently like the one I collected on the Rio Grande. A pair and several single birds the day we went up. All below Santiago.
7. Black (Stork?) Color glossy black, metallic shades, with white head and

- tail. at mouths of two rivers just below Santiago the day we went up. Two seen separately lower down as we descended. Perhaps the same pair. Both were shot at and one badly wounded, but no specimen taken. The only ones I have seen.
8. Green Heron (Butorides) Exceedingly ~~plentiful~~ plentiful; everywhere all the time. Young half grown skylarking about driftage.
  9. White Heron, Black bill and feet but yellow toes. Abundant all along the river. Almost always singly but as many as 3 once seen together. One seen setting between 2 Carabao-Birds.
  10. Carabao-Bird. Abundant. (No Great Blue Herons!)
  11. Tringoides. Very numerous.
  12. Numenius tricolor. Common.
  13. Great Tattler (Totanus) In flocks, pairs and singly. Legs and feet greenish olive. Size of Willet. One shot by Capt. McCoy. Not skinned.
  14. Little Curlew. (Numenius) in small numbers.
  15. Red-shanks.--Abundant.
  16. Small Sandpipers, several species in prodigious flocks.
  17. Large Ring-necked Plovers, abundant singly and in flocks.
  18. Small Ring-necked Plover, very sharply-black ringed. Scarce.
  19. Purple Gallinule, thick-billed. On river and lake. 2 shot.
  20. Waterhen (Gallinula) Very abundant.

April 26, 1904.

Arrived at Baganga at 9.00 A. M. on the Ranger. Low tide. Many culew on the reefs. Busy all morning packing for hike over the mountains to Compostella on the Agusan River. After luncheon we went ashore and got the cargadores together. On the sand beaches were many small sandpipers, Turnstones, Stone-colored Sandpipers, Large and Small Ring Plovers, etc. A few Titlarks. At the house of Lieut. Talby I saw skins of the Geleopitticus or big Flying Squirrel and of a plain-colored Civet, plain reddish brown, somewhat paler below--something like a coon. One huge Pigeon, Carpophaga aeneus, shot at the river crossing (Baganga River) while waiting for return of basota, collected land shells inhabited by Hermit Crabs. Marched seven miles to hemp plantation of an American-German named Christian Ade. He has 30,000 hemp plants. Rats ate up 1,000 bushels of his upland rice, only leaving his seed. Ade has lived here 2 years. On arrival no natives of Baganga, Viscayans, etc., would work for him owing to their fear of Mandayan attack, the nearest



Mandaya village being in sight, 8 hours march distant. Now he has built him a good strong house on Mandaya plan 20 ft. above the ground, on tall tree trunks. The Mandays usually place their house on one large live tree. Ade's house was at least 30 feet square, one room, under part stockaded and locked at night.

April 27, 1904.

Left Christian Ade's place at 7 A. M. 20 minutes later crossed a small stream called Macadloop. Marched all day until after sundown. It is now after 9 and I can almost see plainly enough, by moonlight to write. A night bird, probably an owl is crying Too-woo-co overhead as I lie in a little sandy spot amongst big bowlders. All the rest are trying to sleep on big rocks and call me exclusive. Harbord and McCoy are playing chess! Two Mandayans are in camp and will guide us to their village tomorrow. River partly dry, filled with frogs and shells. A few big white headed kingfishers. Lost one hammer off my shotgun.

Constabulary Lieuts. Talby and Zapanta with Mandayan (Christianized) guide preceded us to avoid scaring the wild and timid Mandayan natives from their village. We had no guide in following, and often lost their trail. Went a mile too far up the beautiful River, and camped. Soon two Mandayans came with a letter from Lt. Talby saying he would await us at the Mandayan village. These men would not return with message and rations the same night, so poor Talby and Zapanta had to get along with such food as the natives could supply. Caught 2 kinds of Frogs above camp, where I made a reconnoissance of a mile. Saw tracks of 2 Mandayans and their dog. White-headed Kingfisher. Birds seen during day were:

One flock of about 6 Red-billed Frogmouths or Roller Goatsuckers.  
 Brown Java Sparrows at Ade's place  
 Red-breasted Sunbird at Ade's  
 Long-tailed Swallow  
 Dusky Swift, Jungle Cock



Shrieking bird  
 Naked-headed Starling  
 Large-blue headed Parrot  
 Parquet  
 Wagtails  
 Honey creeper  
 Tringoides  
 White-headed Chats  
 Small gray Cuckoos  
 Green Pigeons  
 Carpophaga aeneus  
 (No crows or Woodpeckers)  
 Myriads of Pigeons and  
 Hornbills

April 28, 1904.

Left camp at 5:30 A. M. Climbed up ridges and along flats always poor trail through forest. Some trees 8 ft. in diameter well up bole. Few bird notes. Plenty of Hornbills. No other birds identified except Big Pigeon (Carpophaga aeneus). Rather few landshells. Passed one small pond in forest, and crossed one flowing stream at 9:30 A. M. The Viscayan name of the White-headed Kingfisher (probably all Kingfishers) is Ba-cak-ah

Arrived at the Mandaya village at 11:30 A. M. and found that Lts. Talby & Zapanta had left a couple of hours earlier to follow us. Retraced our steps to top of hill, crossed a deep canyon and stream, crossed another ridge and camp<sup>d</sup> on the Baganga (?) River, where we found numerous tiny dusky Swifts coursing about. Many bird voices heard. One song like that of large-billed Waterthrush. Letter received from Lt. Taulbee after dark, brought by Mandayas bearing flaming torches. Taulbee and Zepanta wandered about all day and got back at dark to the Mandaya village and found rations and our letter. (Small water snake catches screaming frog. Snake kept). Taulbee's shoes worn out; can go no farther. Zapanta will join tomorrow morning. Taulbee to go back to Baganga with two constabulary soliders.

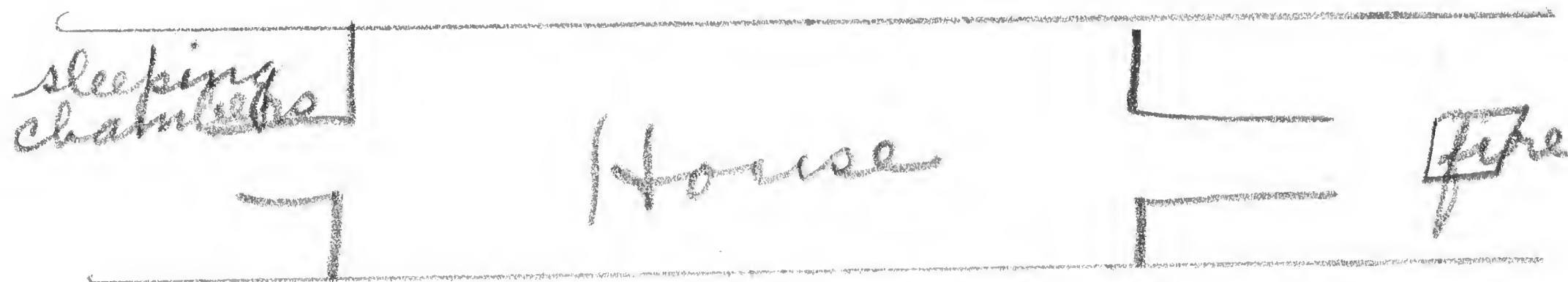
April 29, 1904.

Manaogue is the name of the Mandaya god. We found an effigy of him about 10 feet long and 6 inches wide.

(Lt. Zapanti joined us with a Mandaya early, and we made an early start for the village of Cadahaan.)

We believe in God who lives everywhere in the sky. He is our God because we believe in him. When we are sick or in trouble we ask Manaogue to help us. When we die we are put in the ground by our friends and we don't know what happens after that.

It rained last night, yesterday and night before last, making the rough trail muddy and slippery as well as excessively steep, making the climb fierce. Sun now shining (10 A. M.)



Plenty of basketry of coarse workmanship and materials. One size of flour barrel. Plenty of firewood on hand. Spears, knives, 6 pairs of deer jaws and 2 pairs Hog jaws, rattan hammocks. Covered wicker jar-shaped baskets. Wooden hats often with rooster tails in the rear, feathers tipped with pendants.

About noon we reached the Mandaya village of Candos. In the house in which we rested were hanging up the jaws of 17 deer and 15 hogs. A fine dark knife with silver inlaid handle (Bah-dow).

Baskets of all shapes and sizes. Made of coarse behuca smooth rattan, grass, etc., etc.

The Mandayas are about 5 feet tall, feminine looking, with almond-shaped eyes, broad, flat noses, depressed at tip. Ear-rings. Calayah-co is Mandayan name of largest land snail. Non-edible.



April 30, 1904.

Ca-tog-bah-tong was the name of the first Mandaya village. (Yah-ha-ha-you is this call from a distance), which was sighted at 8:30 A. M., we having set out at 5:25 A. M. We are now hear the head canyon of the Baganga River, still a large stream with falls and cataracts. The clearing of this village faces east and is very steep. The women and old men all run away before we reach their houses. Their laws are strict. There is no lying, stealing or immorality among them.

Land shells few. Rough rocks eroded into strange shapes. (specimen taken from last camp). Forests a little less heavy.

Set 4 traps in last camp beside Baganga River. Caught old male rat, having distal end (1/2) of tail white. Small Swifts, glossy back, show a little white when flying away. Flitting over the stream.

Bow Bu-sug.

Arrow Tune-ood

Dagger Bah-dow

Rat Ahn-bough. Eats comote. Non-edible.

Travelled 3 hours before reaching a spot where one could see anything at a distance. Brown Hornbills common. Numerous bird voices. No kinds identified. Birds very scarce throughout this mountain region. Must always watch one's feet. I strive to keep up. Notime for observations. Trees too tall to see.

When a young man wants a wife he pays hemp cloth, or five slave men (if he wants to marry in the upper 400). If two men each have a sister, and one asks to exchange sisters for wives, the one who asks is expected to give an extra woman in the bargain. They can have as many as 3 wives.



No more than 3 wives. Their slaves are all prisoners of war.

Zahn-ba-Sambanot green Viper head Baganga River.

Rock--Bahto in Mindaya.

A specimen was taken to show the formation of the bed of the upper Baganga, which is filled with pot-holes of all sizes, some drilled very deep and symmetrically. The trail is very rough slippery and difficult, the stream abounding in cascades and deep pools in rock basins. The walls of the canyon abound in small caves, in some of which Mandayas had built fires. From one underground opening gushed a stream from the right bank. Land-leeches continually annoy us. Sun shining brightly. This fine stream must contain fish as large, whitish-headed Kingfishers are occasionally seen. Wherever the stream opens out, the banks are occupied by hemp-trees, and some tuber bearing lilys used for food. White-headed Stork--One seen.--One Crow, the first seen in the Mountains. Guide speared large Frog (Rana) for me.

One Tringoides seen. Another

Our Mandayan guide says we are near the Rio Sayapo. He leaves us to run on to a village and secure a guide to meet us on the trail in advance to show us the way to Compostelo on the Rio Agusan: meanwhile the "practico" (guide) with the cargadores (human beasts of burden) behind us will guide us on this trail up the Baganga River, which has become small and flattened in its valley.

Balsam is the commonest flower. There seem to be at least two species here (specimens).

Another crow, very gold. Voices of small birds-unidentified.

Mandays eat Frogs, but not Rats. In making a fire they use a

piece of flint, a piece of metal, and a black, fuzzy substance from the inside of a palm.

Cargadores all caught up.

Lunched and started at 1:30. New Mandaya guide, named Lu-ba-sack height 5 ft. Weight about 120 lbs. Photographed with a columnar rock.

Halted for camp in a superb part of the Baganga River, at 4 P. M. A rough sleeping ground, but a fairy garden in verdure and scenery. A leech got way up my nose today, and could not be gotten out until well fed, and after, at Capt. McCoy's suggestion, I had sickened him by inhaling tobacco smoke, when I succeeded in blowing out a fine fat specimen, to the great interest of the assembled part. A few wagtails are now appearing on the stones of the creek. Now and then a white-headed Kingfisher. One flock of Monkeys, which we shot at for food for our cargadores, but we got none.

May 1, 1904.

Slept very comfortably on a flat rock, slightly sloping. My bed was of fern leaves 20 ft. long with frond stems like cord wood. By placing the thick end on the down-hill slope, and trimming the leaflets on one side so as to have them in the center and with the stems on either side of the lying space, I had me a soft level bed.

It rained half the night but my two pouches kept me dry. Some beast or bird (Goatsucker) chucked and grunted near me, and I hoped to catch one in one of 4 traps set near-by. We left camp at sunrise and proceeded up the Baganga River, as usual leaping from rock to rock and wading between. Caves with old fires were passed; beautiful bluish pools, some large, a waterfall of left hand tributary 50 ft., multiple falls to it. After an hour and a quarter rested at the last pool, in the River.



After following the dry bed, smooth travelling for some distance, after passing a big slide of rock and timber resulting from an earthquake. Turned off to right from a smooth bed, on side stream, then crossed some level, swampy woods to a small running stream, which was followed some distance after which the trail turned up a steep smooth ridge through a forest to a high divide. At the falls of the Baganga River were massive stalactytes coated with vegetation. Also fine festoons of vines and ferns across stream. On the crest of the divide, which is a forest and not rocky, we halted until the arrival of the cargadores. Then we descended to a stream that disappeared in a cave under a rock. The waterless bed soon entered a fair sized stream from the east, which we followed over steep pitches of slippery rock for some time, then turned off to the left and crossed a succession of gulleys. A large land snail was found, on each side the divide and a smaller one on the Agusan side. Hornbills and birds generally more abundant. No others identified. No squirrels have been seen on the trip. No aneroid to determine the altitude of the divide. We are about 20 miles west of the Pacific.

Find another high mountain divide up which the trail and practico led us, then down a long ridge to the north to Cateel, a Mandaya village, on a tiny branch close to the Cateel River, which flows into the Pacific north of Baganga, so we are on the Pacific side of the divide (?)

We heard a Great Horned Owl (Bubo) and one with a cry resembling our Screech Owl. Shot one tame chicken, having paid a peso for four. The rest hid in the brush. Cooked our chicken in a pot of rice, which made a fine dish for supper. It rained pitchforks the last two hours of our march. At Cateel we mainly tried to get a guide or practico, but obtained much information. On the stones of the broad Cateel River were



many wagtails. Many small birds and Paraquets.

May 2, 1904.

Hundreds of birds flitting above us, but none seen plainly. Paraquets, *Tringoides* and *Motacilla* on creek.

I crossed the Cateel River to buscar trail. Was washed off my feet and got gun and amunition wet. River deep, current swift, rocks slippery. Followed this river all day. Above a Mandayan settlement, whence all the inhabitants fled at our approach, we found an impassable canyon with vertical rock walls and deep water for 100 yards. I swam through but found it impossible to proceed in the bed of creek, so we took a ridge between two forks of the Cateel River, and at the summit of a mountain found the regular Cateel trail to Compostella on the Agusan. This trail led us down the Cateel again and up the left bank to a point where the trail crossed a mountain side to pass precipices and falls of the river. Here we turned a sharp angle in the narrow trail and captured a Mandaya carrying a back-load of rice and chickens; also a spear. We persuaded him to show us the road to Compostella. Our two Mandayan guides, who misled us the day before, deserted during the night. We left money with their abandoned spears.

The last guide led us to Calatagan, where we camped on the river bank in a gravelly sweet potato field. A shack was erected over clothing and bedding partially dried, and sores doctored, and a good dinner of coffee, jam, and rice boiled with a little pork and a good deal of chicken, when, the meal being almost finished, the river suddenly rose and drove us back a hundred yards to a stony hill when we slept among the rocks not very uncomfortably. During the night our new guide ran for it and escaped with

a native guard chasing him in full cry like a hound on the trail, yelling "Hi, Practico, Hi, Practico, hi- hi- hi- hi- hi- hi," until his voice grew faint in the forest and disappeared. Nightjars, Owls, and night birds were heard whenever I awoke. A beautiful sunny day, with slight shower near dusk after we were fixed in our camp. Hornbills, big Pigeons, Wag-tails, Tringoides, White-headed Kingfisher.

May 3, 19<sup>04</sup>~~03~~.

Captured a new Mandayan practico in the village at daybreak. He came unwillingly between two constabulary soldiers. Found all my scattered stuff--box arsenic, shells, leggings, etc., this morning. Marched nearly all day up Cateel River. Turned off up dim trail to right at second Mandaya settlement, led by our decrepit, malarial guide captive, who seemed to purposely lead us from main trail at point where an altar to their Deity was. First stream led Northeast. Crossed it to one flowing west and camped at a place on the stream (Bacoco) which our guide says is a half-day's march from Compostella.

Along Cateel River were one Butorides, many Tringoides and Motacilla. Plenty Paraquets, Hornbills, a large Woodpecker and flock of Monkeys on divide. Shot black water snake 6 ft. long; was swallowing a large Frog. Land Shells collected. One Rat seen on bank of Cateel. Several Iguan White-headed Kingfishers ranged through the valley of the Baganga and Cateel rivers. Three brown Java Sparrows and Raincrows in cogon grass of upper Cateel River.

May 4, 1904.

In this camp on Bacoco River was found a new Beetle 2 inches long with big long mandibles. Flies about with deep-toned buzz like the note of a bass viol. Hornbills, a big brown bird on creek, smallest black and



white Kingfisher. Plenty of Frogs. One wood species a tremendous jumper. All-green frogs on the creek and various spotted ones. A lizard 18 inches long, has habit of shaking its head, on creek bank. Deer and hog-tracks numerous. This must be a tributary of the Agusan as its course for several miles has been northwest, mostly west. Am hunting ahead of the party, but animal life is very scarce. Soon we reached a more level part of the creek-bed, then level stretches of heavy cogon grass. At length the water slackened and deepened, then we waded up to our armpits and left the water when we could find footing. Here birds became more abundant. *Tringoides*, White-headed Kingfishers, shot black and brown Hornbills, Rifle-bird, Parquet, Butorides, Wagtail, brown Pigeon, Big Pigeon (*C. aeneus*), White-headed Chats were seen for the first time since entering the mountains. One brown Hawk size of Broadwing, Red-billed Roller, Goatsucker; flushed herd of hogs or deer in cogon grass beside stream, flock of Brown Ricebirds.

We were about to go into camp during a rainstorm in a deep forest beside this river which had become broad and too deep to wade as we had been doing up to 4 o'clock, when Lt. Quackinbush waded out in the stream to take an observation and saw a native shack built on the stem of a huge tree. The Mandayan guide and Lt. Zapanta were sent ahead and were received and welcomed by very friendly and hospitable natives who announced that they were Christians. They had 4 houses built 20 feet up from the ground on poles and tree trunks, and vacated one house for our use. All my bedding and clothing, etc., was soaking wet but Jim, my Moro, dried much of the stuff before a fire in the high casa, where we are most comfortable, having dined on rice, green corn, sweet potatoes and coffee. We cooked rice and a big brown hornbill in a pot together. They made



a fine dish. We also opened a can of plum pudding which I did not care about. Birds: One white-tailed Eagle, flock of Brown Java Sparrows, Many white-headed Kingfishers, many Tringoides, one solitary Tattler, many Red-billed Frogmouths, many Crows and Chats and Paraquets. We are three hours from Compostella. This stream is the Bacoca, with a small tributary, the Tingali.

The Mandayas have chopped trees here up to 6 ft. in diameter with small axes which they make for themselves. The trees are chopped very evenly, leaving the top of the stump flat and smooth, as a rule. In the house we slept in were spears, shields, knives of various kinds, mats, rattan grass, and hemp-leaf retainers in great variety, a quart bottle (glass), a fireplace, spinning looms, beadwork, a drum, a bird-trap with net and nooses, fowls roosting, hats with rooster tails and beetlejaw-ornaments. Only one Xtian in this village has his hair cut. He also lets his beard (quite a feature) grow.

May 5, 19<sup>04</sup>~~03~~.

Hornbills, big Pigeons, and Raincrows are calling. We leave our friendly Mandayan village at the junction of the rivers Bacoca and Tingali. Taking an early start, with a good practico to show us the trail, we marched rapidly through to Compostella on the Agusan River. Comparatively little of the way was through the river, the trail being mostly through forest. Trail only fair. Large land shells were abundant but no live ones seen. Mr. Gerhart shot into a flock of 100 Cockatoos and killed 2. Hornbills, large Pigeons, green Pigeons, Raincrows, Motacilla; flock of naked-headed Starlings (at Compostella), white-headed Chat, White headed Hawk, White-headed Kingfisher, black Cuckoos size of Pigeon, Red-billed Roller Goatsucker, Tringoides, White-bellied Eagle, Shrieking-bird,

with note like wood Pewee, Crow, Dusky Swift. (Yesterday I should have noted the smallest Swallow-swift, that shows a little white when flying from one; also short-tailed Hirundo.)

The Captain of Compostella and his brother-in-law called on us, and we arranged with them for food and transportation down the River. The Captain of the village (about 10 good houses) is the first Mandaya we have seen not in native dress of homespun hemp, more or less embroidered. (We learn that our guide of yesterday has the reputation of being a great rascal and that he could have brought us by a better trail. This we suspected. The Captain of Compostella is dressed in white with a Derby hat fine looking old man. Swifts abundant on the Agusan, Green Pigeon calling, White-headed Chats common. (Notebook sopping wet and covers gone.)

(Address.

Capt. Ole Waloe,  
Philippine Constabulary,  
(Adriano, Concepcion.)

The large fresh-water shell (like those in Florida) was first found on the Bacoco River 4 miles about Tengali. Common at Tengali and Compostella. Are told that five days will be consumed in the trip down the Agusan to Butuan. A group picture of 6 Mandayan ladies was made by Mr. Gearhart at Tengali. They were all nice looking natives, almost pretty. The Mandayans have rather flat profiles, broad sidefaces, and pretty mouths. They all chew betel nuts, and carry betel nut boxes with them. Bows, arrows, spears, knives, and an occasional Remington Rifle are their weapons.

Left Compostella in two barotas at 2:53 P. M. The Agusan is here a broad river about 50 yards wide with about a 3 mile current. The first bird seen was a Plotus. Wagtails, Brown Java Sparrows, Red-billed Frogmouth. Found stream obstructed by a transversely fallen tree, under-



mined by water. The straight trunk 6 ft. in diameter measured 120 ft. to the roots. Root and branch, the tree 240 feet in length. We disembarked and in passing found nest of brown goatsucker on sand among the branches of this tree. Eggs preserved. Harbord shot a brown Dove like one seen in Mandaya house at. We were so hungry that it was demanded for the pot, though a new bird. Tringoides, Carpophaga aeneus abundant, Kingfishers, large chestnut and blue, large all black glossy Cuckoo, a few Merops americanus, White-headed

May 6, 1904.

Left Pilar, a Mandayan village on left bank of Agusan River at 7

A. M. Birds abundant. Many Iguanos. Orioles numerous. Brown and Black Hornbills, big Pigeons, many Butorides, Tringoides, flocks small parrots, probably racket-tailed, flocks of Cockatoos. Some shot. Many red-billed Roller-Goatsuckers, Black Cuckoo, Obon-abon is Mandayan for the shrieking bird, which they say is brown (female). Bagoombun

is the mountain we climbed. Are passing Gandia, a Mandayan village on right bank at 8:05 A. M. 8 houses together. At Pilar we saw the first cocoanuts. Hemp and bananas all along the river but not in any high cultivation. The chestnut and blue Kingfisher is abundant, but there are no white-headed Kingfishers, Butorides abundant, White-headed Chats, Tringoides, Many Crows and Cockatoos, Obon-abon, Parrot (racket-tailed?) Mirops, Bajao or Cu-ow (Moro), Black and white bird size of Cowbird, Short-tailed Hirundo, Cocoanuts, Riverbanks have been heavidly wooded but now are heavy grass on one side or the other giving an openness to the valley.

Met first native barota with 2 Mandayas. Bamboo occasional. Small

Plover, Mirops, 2 species Motacilla, Dusky Swift, Black Cuckoo, Brown Java Sparrows, Many Mirops, bicolor, Cockatoos, Large Green Parrot, Green Pigeon. Pair of Raincrows flew over like specimen from Dinagat. River somewhat larger with more little grass islands. At 9:14 pass mouth of

Manninga River on right bank Merops bicolor. Ba-how (bird) crying.



Mandayas. Their domestic animals are chickens, pigs, dogs, cats, and once I saw a brown dove in a cage.

(At 9:27 passed Gerona, a Mandayan village.) The houses we have seen were raised from 6 to 20 feet above the ground. They are shallow, low affairs much like the Fish Hawk nests on stumps along the Atlantic coast. All are entered by climbing a pole with deep notches cut in it. The higher ones often have an additional hand rail. (Note of Butorides like our Green Heron's. The naked-headed Starling utters a cry like the Lesser Yellow-legs.) The houses are of bamboo and sticks, thatched with grass and palm and surrounded by matting walls. One cannot always stand erect even where there are no shelves. Shot and skinned a Butorides, male adult. Large, long-tailed brown Pigeons, one White-bellied Sea Eagle. Passed two rivers, 1st on right bank just above a village, 2nd larger on left bank. One small, blue and brown Kingfisher.

Passed mouth of small river Libuton at 12:05. Flocks of Calao (Hornbills) and big Pigeons. Flock of 5 white-headed Storks flew from the river and alighted in a big tree. High banks closing in on the right bank, not on the left. Bamboo rafts all along for crossing. High banks on both sides now. (12:43) White headed Hawk. One small Hornbill. Jungle Cock crowing. Landed at Jativa at 2 P. M. Visited the church and convent. Shot 4 big Pigeons, 3 Cockatoos and a Raincrow. Skinned the last (female adult) Red-bellied and black-throated small Ring Plover, Sunbirds were first seen on the Agusan at Jativa. Also small Brown and dark metallic green and chestnut Pigeons. The brown-breasted Thrush was common, as were Raquet-tailed Parrots. Quake Birds common. One small blue and brown Kingfisher. Many Starlings and Barbets. Largest Woodpecker.

May 7, 1904.

Started at 6 A. M. Many big Pigeons, small brown dove, raincrows, naked-headed Starlings, Orioles, Plotus, Tringoides, Paraquets, Raquet-tailed Parrots, large Green Parrot, Cockatoo, Brown and black Hornbill, largest Woodpecker, Tringoides, Small Ring Plover, Brown Java Sparrow. No Butorides today. No white-headed Kingfishers seen on the Agusan River. One peculiar, very small, grayish Kingfisher seen flying. Many white-headed Hawks, and a Hawk about like Broad-wing. A yellowish bird size and color of female Summer Tanager. Many Orioles, Barbets, Red-bellied and Black-throated Sunbirds. Many blue and chestnut Kingfishers. Many short-tailed Hirundos (One shot yesterday) but no long-tailed ones. One Butorides. Many dusky Swifts, Ignamos. Occasional coconuts. Flock of small white-headed Hornbills called Boo-by by the Mandayan boatmen. One small brown Kingfisher with a blue head. One very small black and white Kingfisher. Flock of Merops bicolor.

Many *Tringoides* floating down on driftage. Passed Patrocino at 11:20.

People old Christian Monobos, who say they are Visayans. Orioles, *Chrysolaptes* at mouth of nest. Skinned chestnut-and-blue Kingfisher, female, laying. White breasted Hawk. Big Brown (long-tailed) Pigeons. Jungle-cocks crowing. It is the chestnut and blue Kingfisher that utters notes like the Lesser Yellow-legs and not the Naked-headed Starling. Found medium sized green Parrots breeding in several holes in a large tree near the river-bank. A colony of *Merops bicolor* nesting in bank of river. Another larger colony later. Many small Paraquets. The little Killder Ring-Plover, the largest Woodpecker nesting in large dead tree at Varicella where Cockatoos and largest medium-sized Green Parrots and big Pigeons were common. One ring-neck Dove. Both species Sunbird, Brown Java Sparrow, Plotus. One or two small Wagtails on driftage. Crows. Very many Red-billed Rollers. Small bird, all dark size of Junco, long tail, undulating flight crossed river.

Presidente at Varicilla met us. We found a few eggs and plenty of rice here. Riverbanks generally high on both sides. Carabo Birds abundant at Varicilla where are Carabao and India cattle.

At Jativa were only India Cattle; but with them we saw a flock of Carabao Birds. These 2 flocks are all seen since leaving Baganga. Tomorrow we will cross the lake in a larger barrota with a small one for hunting. We have an arrangement for cooking aboard the barota. Ducks are said to be abundant on the Lake. We have enough rice. Three or four days will see us in Butuan and aboard the Ranger.

May 8, 1904.

Left Varicella at 6 A. M. Cooked breakfast aboard. Many large Herons (Night Herons?) Plango is the name of the yucca like (palm?) with stem 30 ft. high with long linear serrato-edged leaves at the top. Red-billed Goatsucker, Swallow-Shrikes first seen. Great Blue Heron just seen. Plenty of blue and chestnut Kingfisher. Capt. McCoy shot a large white Heron, female adult, skinned. Iris pale yellow, almost white. Bill yellow. Legs and feet purplish black. The only one seen. The first Waterhens. The Visayan name is Talauahig. Raincrows, Brown Java Sparrows, Black-throated Sunbird, many Black Herons, White-headed Chats, little Brown Rail with Green legs, Minute Black-and white Kingfisher, with dark breast. On reaching the largest lake we (Harbord, McCoy, Geehart and I) got into a small barrota and hunted. We saw no ducks, but numerous large Pigeons, Great White Herons, Butorides, Gt. Blue Herons, Carabao-Birds, Black Herons, Purple Gallinules and Waterhens. We saw a great Fruit-Bat roose with hundreds of them hanging from the trees and screeching whenever we fired a shot. Shot one purple Gallinule and one Waterhen. Saw small Black and white Shrike and many swallow shrikes. Blue-ringed and small red and green Paraquets. Large Green flocks of Cockatoos.



May 9, 1904.

Shot a black-and-white Kingfisher (Capt. McCoy), male adult, Testicles very large. See slip for colors. Shot Great Blue Heron, Adult, not skinned. Many big Pigeons. One White-headed stork. The blue-and chestnut Kingfisher doubtless breeds in a burrow in a bank. As such was seen where the laying female was shot yesterday. Flock of Hornbills. Not very many big green Parrots on this river. Plotus common. Tringoides the only common Sandpiper. Short-tailed Hirundo has become scarce. Today's notes on two separate sheets laid in this book. Bright sunshine all day; no thunder or rain. White-headed Haws becoming more numerous. One small Wagtail.

Camped on the boat just below the first lake. Left at daybreak.

Haliaeetus leucogaster was a common bird on today's trip. Six rowers all

day. The big lake on our right up to noon. Saw about 6 of the very small black-and-white Kingfishers. Eagles smaller than Haliaeetus were numerous. Large Hawk mostly all white below. Large Hawk spotted and heavily cross-barred. Pigeons, several pairs of Green Pigeons, Many Blue-ringed and red-and-green Paraquets, one ring-necked killdeer Plover, many Tringoides and Butorides, Carabao Birds, White Herons and one Great White Heron, Black Heron, Great Blue Heron, Red-bellied Goatsucker, Swallow-shrike. Brown Java Sparrow, Orioles abundant (6 in one flight). Rifle bird, Red-and chestnut Kingfishers abundant. Black-throated and red-bellied Sunbirds, singing. White-headed, Black, and Brown Hornbills. Rather large brown spotted Cuckoo, and Gray Cuckoo same size. Purple Gallinule, Waterhen, both very noisy. Capt. McCoy shot a little black and white Kingfisher, male adult. Iris very dark brown, bill black, toes 2-1 equals 3 on each foot. Feet vermilion; claws brownish black. About the size of English Sparrow. Crows common. Shot at Hawk, similar to Broad-winged, with light-colored head. Large Green Parrot, flocks of Cockatoos. Raincrows. No Ospreys or White-headed Kingfishers. Shot an Iguano or two but could not reach them. One was at least 4 feet long. No Turtles. White-headed Hawk, White-headed Chat.

May 10, 1904.

Reached Talacogon at 9 P. M. Libang River at 11:55 P. M. The town of 200 houses. One hundred and fifty-four of the population of have died of smallpox during the past two months. We got 3 cans of evaporated cream and some sugar from one of the 5 stores. (3 Chino and 2 native).

Bee-eaters issuing from round burrows in bluff bank, Flocks of Brown and Black Hornbills, Big Pigeons, Short-tailed Hirundos, 2 White-headed Kingfishers--the first on this river, Tringoides, Raincrows and Orioles were the first birds heard after we started at 4:45 A. M. Cockatoos, Blue-ringed and Red-and-green Paraquets. White headed Chats, Black-throated and Red-bellied Sunbird. Capt. McCoy shoots a *Carpophaga aeneus* (called Bal-lude by the Zamboanga Moros. The Blue and Chestnut Kingfisher is still abundant, Black starlings are first seen on this river. The Visayans of this river use Ka-ging-king for *Dendrocygna*, the same as the Moros of Lake Lanao. The



Carabao-Bird is known on this river by the name of Ta-bon, usually applied to Megahoduis acummingi (the mound-bird) Swallow-Shrikes, Red-billed Goat-sucker, Brown Java Sparrow or Rice-Bird. Shot a Brown Hornbill, which fell to the ground, then climbed up through a high bush to the top and flew away strongly just as a boy was about to lay hands on him. We are now gravelling with two big barrots, 6 oarsmen in each, have cut away most of the bamboo outrigging which made the big boat buoyant enough to carry our party and baggage, but delayed us by making friction and collecting driftage among the bamboos. We are now making about double speed, and expect to make Butuan before midnight. Crows, Black Cuckoo, abundance of Short-tailed Hirundo, Cockatoos. There are now a good many bluff banks where Kingfishers and Bee-eaters have burrows.

Our trip from Baganga to Compostella covered about 55 miles, and required 10 days, marching 9 hours per day, --- equals -- mile per hour of marching.

55	11
90	18

Passed the mouth of Libang River 11:55 A. M.; Cogon grass 20 ft. high. Blue and chestnut Kingfishers abundant, but no more White-headed Kingfishers. White-headed Hornbills, --flock, small Ring Plover. Most of the Golden Plover seen on the Tubay or Jabunga River April, 1904, were in golden-black spring plumage. No little black and white Kingfishers seen today.

The Agusan has broadened to such an extent by accession large tributaries coming from both sides that small birds could not be distinguished on its banks. It is a truly great river. Reached Butuan and the Ranger at 9 P. M. May 11, 1904.

Slept heavily aboard the Ranger. Reached Cagayan in the afternoon. Butuan, where we embarked on the Ranger, is 6 miles above the mouth of the Agusan River. The birds seen on that portion were flocks of Black Starling, Black-throated Sunbirds singing, Blue and chestnut Kingfisher, Crow, White-headed Hawk, White-headed chat, Bee-eater, short-tailed Hirundo, Dusky Swift, Green Heron (Butorides) Great Blue Heron, Carabao Bird, Carpophaga. aenus, Tringoides, Black Cuckoo, Raincrow, Largest Woodpecker, Blue-ringed and red and green Paraquet, Cockatoo, Large Green Parrot, Brown Java Sparrow, Oriole.

At Cagayan, Lieut. Waldo commands the scouts. The only sea birds were Sterna bergii.

May 12, 1904.

Arrived at Misamis at daybreak. Fine old Spanish stone fort. Blue-and-white Kingfishers.

Arrived at Jinianez at noon and went ashore after luncheon. Rice paddies and cocoanuts everywhere with mountains in the background. The smaller Dendrocygna was abundant. I shot three of these Ducks, a Waterhen, a large gray and brown Rail (like specimen from Vicars), and 4 Stilts.

The Stilts were the first I have seen in the Islands. They seemed larger than ours, the note about the same. I preserved 3 males and one female. They were often seen in pairs, but several times, flocks of 30 were seen, and one flock of about 100. They were feeding in rice paddies and were quite tame. Butorides, Carabao-Birds, Black Ibis, and little Brown Herons were common. Several Tringoides and two Solitary Tattlers seen. Many small wagtails, white-headed chats, and black-throated Sunbirds. Great Blue-and-white Kingfisher, White-headed Hawk, Brown Java Sparrow, and Swallow-Shrike were also seen; and the Short-tailed Hirundo was common. The Stilts had black bill, red iris, purplish-red legs and feet with dusky claws.

Spent evening at Camp Overton.

No sea birds but Sterna bergii.

May 13, 1904.

When I awoke we were lying off the pretty town of Orquieta, with handsome church, convent, a red, and many white houses, besides native shacks of grass, matting and bamboo. All are in a forest of cocoanut and other trees, with blue mountains having very irregular outlines against a white-clouded sky--a very pretty sight indeed.

Landed at Langaran. Large church, convent and other buildings, cell dilapidated. The birds were Crows, Blue & White Kingfisher, Brown Java Sparrow, Swallow-shrike, Swallow-swift, (smallest) Short-tailed Hirundo, Many Titlarks and Black-throated Sunbirds, Orioles, Whiteheaded Chat; collected one black-throated sunbird, male adult; one Titlark, male adult.

Landed at Baliangao right after luncheon, collected 2 gray Chestnut- and white Quails, all old males; one Mangrove Warbler, male adult, one Hairy-back, male adult. Saw besides: Orioles, Swallow-Shrike, Ring-necked Towhee-tail. Brown Java Sparrows in large flocks. Blue and white Kingfishers, Black-throated Sunbird, Crows, White-headed Chat, short-tailed Hirundo, Least Swallow-Swift. Plenty of Terns (*Sterna bergii*) on the sea, but no other sea birds.

Landed at Dapitan late in afternoon. Birds:

White-headed Hawk.

Flock of 30 Cockatoos. This White Cockatoo is a noisy, scolding gregarious species, and if not the most abundant Parrot in Mindanao and Sulu, it certainly is the most conspicuous.

May 14, 1904.

A Booby, (Sula ) was floating on the waves ahead at sunrise. Capt. Anderson tried to shoot it for me, but it flew too soon. One or two others seen later. Sterna bergii floating on driftage.

Arrived at Zamboanga at 2 P. M., and left the same evening to join General Woods Cotabato Expedition in the Rio Grande Valley.



SIMPITAN EXPEDITION.

(May 17-29, 1904).

May 17, 1904.

Left Cabacsalan Island (sometimes called Isabella), in the Rio Grande of Mindanao on the steam launch Cheyenne to cross Lake Liguasan. Soundings  $9\frac{1}{2}$ ,  $5\frac{1}{2}$ , 7 feet, etc. Floating grass islands moving all over the lake. Lotus lily covering large areas in places. At last we found plenty of open water. Fish were jumping out. Stuck in the mud. Drop anchor. Pulling up anchor very difficult and liberates suffocating quantities of marsh gas. Entering a larger area space of open water we find 2 very tame Pelicans. The lake is now dotted and streaked with open water. Very hot, even under the awning. Several Moro signal fires burning on the shore. I have always observed numerous fires whenever approaching hostile Moros, even when traversing friendly country. We are floating, with no open channel ahead. Hot! It is now dusk. I have been aboard the launch all day watching birds I could not get at. The General's launch breaks down and ours tows them in to Cabacsalan. Slept on the Sabah.

May 18, 1904.

General Wood's order is issued. I assigned personnel of medical department. Took small Moro vinta, 3 Moro paddlers and 1 Hospital Corps soldier. Went out on Lake Liguasan and shot some birds. The solar head coagulated the albumen in the muscles of two of the birds I shot and left exposed on the bottom of the barota, which turned the meat white as if cooked. The floating islands are composed mainly of two species of grass, and the cogon also grows wherever the banks become locally solid. There are an abundance of water cabbages and entangling vines of, perhaps, a species of buckbean (specimen preserved) bearing fleshy leaves and white flowers. Locally convolvulus, senna, sedge, and Polygonum are abundant. Senna is the only shrub. Returned to the Sabah at Cabascalon Island, at 1 P. M. In the afternoon I walked about the island in company with Captain Darrak, and Dr. Munson of the Navy.

May 19, 1904.

Slept well under mosquito bar aboard the Cheyenne on Lake Liguasan. Transferred to small Moro vinta with my luggage, some rations, 4 carsmen and 2 artillery soldiers. Crossed Lake Liguasan to Buluan on the upper part of the Buluan River. **We slept in the boats** in a patch of lotus where there were no mosquitoes, as mosquitoes dislike the lotus. There were myriads of mosquitoes above and below this spot. Lake Liguasan contains many open stretches of water, a number of which were crossed. In some places water cabbages had floated against masses of the lotus, which latter are rooted deeply in the mud of the lake bottom. These beds of vegetation are the home of myriads of birds.

(Learned today that from Buluan there is a good trail to the Malala River (8 miles), thence up the Malala River to divide (20 miles), then over the divide and down a stream to Santa Cruz on the Gulf of Davao (25 miles). Total distance 53 miles. Bilanestribe.) Captain McCoy afterwards made the journey in company with Bishop Brent; and at a still later date Capt. McCoy crossed this divide from the Santa Cruz side and killed Datto Ali. In this manner the above information, noted by me, came to the accomplishment of an important result.

May 20, 1904.

The Buluan River is becoming a swift and narrow stream, up which we proceed a mile or two and camp among some cocoanut and other trees. The Infantry column under Captain Devore reached this camp at 5 o'clock P. M. yesterday. There are acres of bean vine about this place.

May 21, 1904.

Left Buluan early in the morning in a large Moro vinta for a trip, which lasted three hours, up the Buluan River to the Lake Buluan and returning. River water very sulphurous. On the margin were patches of tule rush, lotus, Polygonum, buck-bean, white water lily, senna, sedge, coarse clump fern. Moros eat the petiole of the lotus--the tender base--as well as the nuts which taste like chestnuts. Clumps of tall cane-grass. Plume-like ferns in beds along the banks. Many species of grass. Of Polygonum I see several species. Elephant-ear. Some Moro houses, with banana and cocoanut trees. Spent the rest of the day in our pretty camp at Buluan. Two Infantry companies march, by trail, in  $6\frac{1}{2}$  hours. Measured a crocodile (11 feet) that a soldier had shot.

May 22, 1904.

The troops remained in camp at Buluan. Set out in vintas up the Buluan River to Lake Buluan. On reaching the lake it was commonly noted that heads of great Crocodiles would rise gently to the surface and lie perfectly still. This lake fairly swarms with crocodiles. General Wood sounded and gave me mud from the lake bottom which contained many small shells that I preserved. There are no large native villages on Lake Buluan; but there is a large population distributed around the lake margin in scattered houses. We met some of Enoch's people moving away in boats because they were afraid



of Ali's men. Their boats were laden with food as they are going to market.

May 23, 1904.

Still at Buluan. The Moro boats are tardy in arriving with the rations. A number of cargadores disappear by desertion. Left Buluan at noon and found the trail leading to Simpitan through cogonals. Streams were bordered by forest trees. It is a small stream, with well-wooded banks, flowing through a prairie of cogon grass. Camp was made at that point.

May 24, 1904.

Marched at daybreak. Three miles brought us to a stream called Rumbawata along which grew heavy timber. Another mile brought us to a stream called Dim-my-gall-ee, and a few more miles brought us to Simpitan, where a fight had occurred some time previously in which both the Americans and Moros under Datto Ali met with losses. Ali's camp was found to be deserted, he having vanished to parts unknown with all his followers. Two scouting expeditions were sent out to try to locate his trail; but it is probable that his men fired the greater part of their ammunition and partly dispersed, Ali and his personal following having perhaps, moved in boats through esteros and the lakes.

May 25, 1904.

Marched from Simpitan at 2 P. M. to a little grass strip between two rivers near the Malala River and camped for one night.

May 26, 1904.

Broke camp at early daybreak and marched to Buluan. The distance from Simpitan to Buluan is probably a little less than 20 miles (15-20 miles).

May 27, 1904.

Left Buluan at 5 A. M. in vintas, moving down stream towards Lake Liguasan. A treeful of monkeys was not an uncommon sight. A halt was made



at Pandog on the Buluan River and a meal prepared. Troops under command of Captain Devore marched from Pandog to Butig Hill and captured some 6 Moros wounded old Datto Peterboro; Ali's main force having left Butig Hill. Devore found much of the loot taken by the Moros from Captain Harper's command at Simpitan and identified Lieutenant Woodruff's compass, etc. Although Devore's men had been fired upon by the Moros at Butig Hill, none was hurt, but the troops engaged were very tired on returning to the boats. Heavy thunder storm is coming up. Resumed our journey down the Buluan River at 4 P. M., crossed Lake Liguasan and arrived aboard the Sabah lying in the Rio Grande at Cabaxsalan Island at 3 A. M. Enjoyed a bath and comfortable cot with mosquito netting around me. Aboard the Sabah off Cabaxsalan Island until 2 P. M.,

May 28, 1904, when we moved down the Rio Grande to Reina Regente, after a very good and enjoyable luncheon aboard the Samar with Captain Miller, U. S. Navy. Spent the greater part of the night at Piang's place on the Rio Grande.

May 29, 1904.

At daybreak the Sabah, in descending the Rio Grande ran upon a sandbar, and there steamers were required to pull us off. Starting again at 12 M. we steamed down the Rio Grande, occasionally touching bottom, proceeding to Zamboanga, arriving May 31, 1904.

Despatch Book No. 3.

Davao and Mt. Apo Trip.

June 9, 1904.

Left Zamboanga at 9 P. M., on the Constabulary steam launch Troy for Davao. The first stop will be at Mati.

June 10, 1904.

During the forenoon an occasional pair of Gannets or "Boobys" as the sailors called them were the only birds visible. At 10:30 A. M. a pair of these Gannets continually circled about the ship. Their flight is somewhat like a Gull's, but the yellow feet, whitish bill and wedge-shaped tail serve to distinguish them. After being fired at, they again returned to the ship, and one was shot. A sailor swam out and got it, No. 13491. Gannet *Dysporus* male adult. Molting. Quill feathers much faded and frayed by wear. Killed in longitude  $124^{\circ}$  E., latitude  $6^{\circ} 6:45$  N., off (S. W. 9 miles) Kanipan Bank, S. Mindanao, P. I., June 10, 1904, Length, 775 mm.; alar expanse 1460; wing, 390; tail, 240; culmen (chord), 102; height of bill at base, 31; tarsus, 4.7, middle toe with its claw, 80. Iris brownish gray, with a white external ring. Bill yellowish white, dusky at extreme tip, where it is more grayish below and more olivaceous above. Bare skin of face and pouch pale yellow, except that the eyelids and space in front of eye are plumbeous. Feet plain, pale greenish yellow, without dusky markings or shading. Whole alimentary tract preserved, claws grayish horn-color. During the afternoon flocks of the large Tern (*Sterna bergii*) appeared.

June 11, 1904.

Left home, Fort Snelling, one year ago today. At sea. Turned back during the night on account of bad weather. No marine bird in sight. Sea rather rough. No sea birds up to 2 P. M. when we entered Bay,



where a school of Porpoises, as usual there, escorted the ship into the bay. I was about to shoot one of several that came close in beside our bow, when Col. Harbord tried to hit one with his pistol, which was the signal for the instant disappearance of the herd. Many small fat flying fishes all day.

At Mati gathered ten (10) specimens of rocks from the sea beach. No birds noted, not even Sterna bergii.

June 12, 1904.

Entered Davao Bay at sunrise and landed at Sulug at mouth of Sulug River at 9:45 A. M. Many flying fish in Gulf of Davao. One flew a distance of 500 yards estimated by Governor Bolton and myself. Last night a Dolphin struck our trolling line and carried away both hooks. Captain Yarneberg says he has often landed Dolphins with trolling line baited with a white rag.

Guy C.

3rd Lt. Gt. Fort P. C.

Mati

Constaby. of Davao.

Saw a Tarsus spectrum at Malabang. Shot 191 Deer from May 1, 1903, to June, 1904. All at Malabang and Mati. Shot 9 one night at Malabang. 5658. Monkey (Ah-mol Moro) female in Sulug, E. shore of the Gulf of Davao. June 12, 1904. Skin and skull.

13492 Spotted Hawk, female adult, Iris, mastax stomia chrome yellow. Bill plumbeous, black at tip. Feet yellow; claws, black, 540; 1135; 360; 255, cul. and cere, 35; cul., 25.; tarsus 80, mtc. 55.

13493 White-headed Hornbill, male adult. This is not the crying bird of my notes--Shrieking bird. Iris dark red. Ridge process of maxilla reddish brown shading to whitish and base and pale reddish laterally where it joins the maxilla proper; maxilla dark red-brown on basal half, pale olive on terminal



half; mandible red brown at base above, pale olive on terminal half, with intermediate crossed by four whitish oblique ribs, separated by 3 black grooves; the extreme base of mandible below being red. Feet olive-plumbeous; claws plumbeous-black. 580; 780; 245; 225; 100; height 38; 45; 47.

In the tall trees, many of them dead, along the white sand beach, were many Black Starlings that feed largely along the beach, like Quiscalus. Five were killed at one shot. The Swallow-Shrike (*Artamus*) occupied some of the dead trees. There were:

Black-throated Sunbirds,  
 many Brown-breasted Thrushes  
 Blue and white Kingfishers  
 One Hypothymis  
 Brown Java Sparrows,  
 Crows,  
 Torcase,  
 Black Calao,  
 Raincrow,  
 White-headed Chat  
 and many small birds whistling or singing in the nipa swamp.  
 Orioles common.  
 13494 Red-billed Frogmouth, male adult.  
 13495 Brown-breasted Thrush, female adult  
 Black Cuckoo or Crying Bird.  
 Quail,  
 Jungle-fowl  
 Orange-breasted Crier Pigeon  
 Ring dove  
 Big Brown Dove  
 Small dark-green Pigeon  
 White-headed Kite  
 Big Green Parrot  
 Little Parrakeet  
 Mangrove yell. Fl.  
 Fan Tail Fl.  
 Black-white-and gray Shrike  
 Hairy - back  
 Red soot Shortbill  
 Big brown-throated sunbird  
 Bald-headed Starling

June 13, 1904.

Arrived at Davao at 10 P. M. last night. Met. Lts. Wagner and Cheston; had stein of ice-cold beer, and slept in Mr. Cheston's quarters. Breakfast at 7 A. M. Davao is more like some place in the southern U. S. than any other place I have seen in the Philippines. Birds and bird songs fill the air.

White-headed Hornbill  
 Black Hornbill  
 Crow  
 Lalage terat  
 Blue and white Kingfisher  
 Short-tailed Hirundo  
 Orioles  
 White-headed Chat,  
 Hypothymis.

Mr. Spencer, Dist. Treasurer, tells me of a hunt at Diga~~o~~, Mindanao, where a 30 foot Python and herd of hogs were rounded up by firing a large area of heavy cogon grass simultaneously on all sides.

The hogs invariably rush to the centre where they are burned, their eyesight lost, and killed, if not by fire by the natives. On this particular hunt a python was found scorched and nearly dead. It was shot, and required the full strength of 4 strong natives to stretch it out at length. It measured about 30 feet. It had recently swallowed a large deer, which was removed and eaten by the natives.

The white flower with yellow center and pink lines on back of petal is called Temple Flower. Fragrance resembles tuberose.

Lieut. Moore, Engs., is getting piles for a new wharf at Zamboanga. Most of them are being brought from Samal Island. He has obtained 4 molave spiles 62 feet in length. Most are 50 foot piles. Promises fossil and geological specimens from Samal Island.

Took short walk at 10 A. M.

Chip-ker-se-ch bird  
 This like one note of Eastern Towhee  
 Oriolus note: so-feugh'-a  
 The song of the Black-throated sunbird is not unlike that of our Chestnut-sided Warbler  
 Little red-bellied "Barbet." Young are catching insects from leaves for themselves. Note like Juncos'.  
 Raincrows  
 Green Pigeon calling.  
 Bird note in nipa swamp a single long-drawn whistle frequently repeated.  
 Mr. Woods finds the night monkey (Tarsius spectrum) at Santa Cruz near Davao.  
 Wild Pagan Tribes about Mt. Apo.



- 1 Bogobo
- 2 Manoba (40 on south Quilerd)
- 3 Tagaculo ) on coast around
- 4 Calayan ) Diga
- 5 Ata (Mt. & Valley, Atas dif. lang.)
- 6 Mandaya
- 7 Guyangas N. W. 19) July 16, 1904, visited Bolton at Davao.
- 8 Moro
- 9 Filipinos (Viscayana)
- 10 Libobowans. Upper Sowong R. Live in trees 40 ft.

(From Lt. Wagner, see his report.) Governor Bolton says there are 14 wild tribes about Mt. Apo.

Skinned two birds and made up skins of White-headed Hornbill and Spotted Hawk. Made preparations for start tomorrow by sail-boat for Tagulaya and Mt. Apo.

June 14, 1904.

Get aneroid. Left Davao in sailboat at 9 A. M. Baggage in vinta for Tagulaya, west side of Davao Gulf. Gathered shells and crabs at Davao boat-landing (at bridge).

Three Whales are in Malalog Bay. Two big ones and a little one.

Mr. Black, missionary, saw a Dugong on coral reef off Santa Cruz; head out of water. Bogshos say they "climb out on rocks" with their babies on their arms." Shot 2 Terns.

13496 *Sterna sinensis* male adult. N. W. Side Davao Gulf in front of Dumoy. (Bill broken off at tip.) 222; 530; 128; 68; 18; 19.  
 13497 *Sterna sinensis* male adult. 225; 536; 180; 66; 30; 18; 19.5.  
 Iris dark brown; bill olive brown, black at tip, horn color at extreme point. Legs and feet olive-brown; claws black; under side of toes yellow. Stomachs both filled fish an inch long (stomach preserved). Not near their breeding season. The only ones seen Bogobo names:

Brown Dove Le-mo-kan.  
 Red-billed Frogmouth Tar-roc-sah-kan  
 Naked-headed S. Tu-kal-ling  
 Torcasa Ka-poor  
 White-headed Chat Te-boo-ool  
*Sterna* Kan-ah-wy Viscayan  
 " Bahs-bahs Bogobo  
 13498 Red-billed Frogmouth, female adult  
 13499 Naked-headed Starling, male "  
 13500 Sand Dove ) Mates male adult  
 13501 " " ) female "



The above four specimens were taken at Tagulaya, where I found that the "Crying Bird" of my notes is really a jet black Cuckoo. A similar bird had reddish-brown markings added.

Little-red-and-green Paraquets

Cockatoos

Tanygnathus

Raincrow

Little sacred Dove abundant. Pair sat side by side when shot at once.

"Torcase" abundant, 4 shot and eaten.

Green Pigeons

Brown Java Sparrow

Martin

Pescado Asul

Oriolus

White-headed Chat (1 shot)

Black-throated Sunbird

Gray and black Harrier is here in the cogonals in abundance, but I saw none.

Brahmany Kite. (No waders or beach birds seen).

Wood Swallow

Small dusky Swift

Least Swallow-Swift

Short-tailed Swallow

Black Starling

Crow

13502 Naked headed Starling, female adult

13503 White-headed Chat, male adult

June 15, 1904 (Wednesday)

Left camp at 7:30 A. M. Crossed the Tagulaya River at camp; also 2 small creeks in areas of timber and hemp plantation, finally taking a trail through an evenly sloping cogonal on the left side of the Tagulaya River, following a deep indenture of the cogonal zone to its apex, where the aneroid read at 9:45 A. M. 1030 ft. Descending a steep hill we again came to a branch of the Tagula<sup>y</sup> River where the aneroid read 930 at 9:55 A. M.

The Raincrow, Wood Swallow, little red-spotted Paraquet, Cockatoo, Crow; Red-billed Frogmouth, Cogon Warbler, White-headed Chat, Brahman Kite and Torcas were with us to the apex of the cogon belt. Gathered 3 species of land snails (dead) in the forest near sea level. Shot a Paraquet at 650 ft. The river here is swift and rocky. Red-bellied "Barbet," Monkey, On the stream Bah-he (Viscaya); Bohl-la (Bogobo) "Fish-tail Palm" (Majgale) common; Green-stemmed Palm or Betel-nut, Boong-ga Viscayan.

Mah-mahn-Bogobo (Bogobo)

Come here friend Ah-de-kah<sup>o</sup>loo-gee (Bogobo)

Red-spotted Paraquet Thomah-see-see.

The cogon through which we passed averaged shoulder high, higher near the sea than at higher altitude. Flower stalks 6-10 ft. Bogobos say 1 hour to next Bogobo village from this river. Left crossing of Tagulaya River at 11 A. M. Up short, steep hill, then fields of corn and rice, then a small forest of bamboo, more fields of corn, rice, etc., but no cocoanuts. Met the Datto, who escorted us to his casa, well raised from the ground. Room 30x50 feet with a big landing outside, and elevated passage to water-closet with double hand-rails 50 yards. Chew betel-nut. In a loft the godslive. Their gods are both man and women gods. Man-da-wrahug-un is the bad god who destroys. Dee-wat-ah is their good god. 6 gongs different sizes. A raised platform at one end 8x30 ft. for guests to sleep on, but best beds are a plank with three bamboos on either side, bound together with rattan. Brass betel-nut boxes. Datto carried a spear. Gemmie wony ear-rings  $3\frac{1}{2}$  inches in diameter round discs. Dogs, chickens. Carabao, Ponies, sacks of rice, earthen ollas, Potatoes and baskets of many sorts. Two very large gongs besides 6 of grades sizes. Cinch. Weaving outfit for hemp cloth. Datto clad in jacket and knee-breeches of hemp homespun cloth, elaborately beaded at border and shoulder. Haversacks handsomely beaded. Many children. 4 women, all clean and handsome. Cat. Fireplace  $5\frac{1}{9}$  ft. Women clad in short skirts and red waist, ear-rings strings of beads, anklets. Women rather stout with handsome legs and feet and splendid chest development. Datto carries a knife in rattan, metal-ornamented scabbard, handle ornamented with hand-wrought copper. Carries a rattan basket containing betel-nut brass box, etc. Women have rings of beads and metal both at ankle and between thickest part of calf and knee. Datto's lime is carried in a handsomely engraved bamboo,  $1\frac{1}{4}$  in. in diameter, 16 in. long, lightly banded with brass and rattan. Haarem at one end of main living room. Retainers summoned by beating the largest gong. Altar ornamented with curiously frayed



bamboo cogon and leaves fantastically clipped, woven and bunched. They make a cosy and pretty retreat in the attic for their shy gods to hide in. Several strings of cowry shells are used in it. Datto has 4 wives. Arrived at Datto's house at 12 M. and prepared lunch at family hearth. Aneroid 1550. Black horsehair (tail) in bulk. Drum of bark sides and pigskin ends. Name Tahn-bu'l. Small saddle-pad. Swinging shelf growing with a wealth of gongs of brass (Chino, like the ivory ear-rings. I notice that the Datto wears a small crooked knife in sheath and beaded head dress. Household utensils are mostly neatly strung to bamboo rafters in an orderly fashion. Some of their cloth is rather pretty. Datto Ali Tooncahling is the most powerful head Datto of Mt. Apo, having 400 men at his command, the larger part, however, under other Dattos (recently made captains by Gov. Bolton). He claims 50 ahguns, 10 horses, 100 large plates and 50 small ones.

Governor Bolton and I hunted 3 hours and got caught in heavy rains. We got:

1 White-headed Hornbill  
 2 Phylloscopus (Abrornis)  
 1 Red-bellied Sunbird  
 13510 and 13511 taken at 1600 and 2000 ft. respectively.  
 2 Brown-breasted Thrush  
 2 Saffron headed Raincrows  
 1 Torcasa  
 13504 White-headed Hornbill, male adult, 1750 ft.  
 13505 Saffron headed Raincrow " " 2000 "  
 13506 " " " " " "  
 13507 Red-bellied Sunbird " " 1750 "  
 13508 Phylloscopus Alcoholic " 1600 "  
 13509 " " "  
 13410 Brown-headed Thrush adult  
 13411 " " " "

Of the last two the head, feet and wing were preserved in alcohol. Altitude of all these 2000 ft. Saw Hairy-backs at 2000 feet.

June 16, 1904.

Left camp 6:45 A. M. Orioles very many White-headed Chats. Stopped at house of a Datto. Glass thick and artificial<sup>i</sup> tree for gods to hide in.



Man played bamboo flute. Woman up with newborn infant, pretty child, quite white. Alters and houses like doll-houses for food offerings to gods. These altars one sees anywhere on the trail. The houses are near their dwellings.

Altitude here 1725 ft.  
 " at creek 1300 ft.  
 " where we left creek 1660 ft.  
 " at Datto Mung-ah's place 3350 ft.

June 17, 1904.

Left camp at 7:30 A. M. Governor Bolton and Mr. Sharpe (Dist. Treasurer) left for Davao at 7 A. M., with 4 packers. Aneroid 3350 ft. at 7 A. M. at Datto Mung-ah's house. Birds Crow, White-headed Chat, Little Swallow-Swift, Wood Swallow, Saffron headed Raincrow, Oriolus. Aneroid reading 3500 ft. At top of hill back of Datto Mung-ah's house 3750 ft. Plenty large Calao. Many bird notes. Deer and Pig tracks.

The mountain Bogobo and his spear are inseparable. He finds a thousand uses for it: staff, weapon, spear a frog, beat bushes for poisonous snake before setting down his bare foot.

Datto Mung-ah's best man is named Ahn-dee

Bogobo names:

Dog	Ah-soo
Cat	Bing-ko
Horse	Koódo
Carabao	Car-a-bough
Cow	Bah-ka
Monkey	Loó-tung
Calao	Cal-you-uh
Rat	In-yit
Pig	Ooh-sah
Deer	Sal-ah-dung
	Koo-bing
	Op-pod-ey
	Fah-lass
	Eebid
	Bah-ga-san
Anti-leech plant	Doh-lay
Slug	Kahr-ah-kole (Viscayan)
"	Bay-u-ko (Bogobo)

Hot spring 4050 ft. Reading on hillside 4750 ft. at 12:15. Reached Hot Spring at 11 A. M. and lunched at Dr. Copeland's temporary shack. Reading above little flat 5260 ft. Creek crossing 5275. Water very cold.

Dr. Copeland's shack 5600 ft. Arrived at 1:40 P.M. Many birds singing.

As soon as we reached the house built by Dr. Copeland, a little chicken was heard peeping and was caught by Furman.

13412 Gallus gallus male juv. Moro: Im-piss<sup>✓</sup> : Bogobo, Mah-nook-tah-loong  
Mah-nook<sup>✓</sup> (equals chicken;) tah-loong (equals wild or mountain ?)

Bogobo Bird names:

Sahg-goo <sup>o</sup> -row	Pigeon
Pol <sup>l</sup> -low	Blackbird
Tah <sup>d</sup> -d <sup>h</sup> m	Red Flycatcher
Kah <sup>t</sup> -ta <sup>m</sup> -moag	Yellow-throat (Zosterops)
Beer <sup>f</sup> -iss-beer-iss	Yellow Flycatcher
Kah <sup>t</sup> -te <sup>m</sup> -moog	Larger Yellow-throat
Ten <sup>g</sup> -gno	Myrica ? Myrtle tree
Bo <sup>o</sup> -oss	White orchis

June 13, 1904.

The Zamboanga Moros call the little Tern shot on Davao Gulf Tel-la-tell-a Bogobo E-tic-sa-da<sup>g</sup>-got; Viscayan Pa-to del Mer

Club Moss No.	Ko <sup>l</sup> -le <sup>l</sup> -le.
Saffron-headed Raincrow in Bogobo	Sa-gook <sup>o</sup> -sook
White-headed Hornbill	Ing <sup>y</sup> -yet <sup>l</sup> (Bogobo)
Domestic Fowl	Mah <sup>n</sup> -nook
House	Bah <sup>h</sup> -hi (Bogobo)
Wild Jungle Fowl	Mah <sup>n</sup> -nook
Mountain Fowl	Tah <sup>l</sup> -loong
Large yellow-breasted, gray-headed singer	Be <sup>a</sup> -oi <sup>t</sup> -toi (Bogobo)
Brown Snake	Tu <sup>l</sup> -le <sup>g</sup> -ga
Berries in violet Pigeon	Boo <sup>e</sup> -e <sup>c</sup> -ah <sup>y</sup> -yuh (Myrtle-tree berries)
Bird's nest	Sah <sup>l</sup> -log (Bogobo)

Aneroid reading at camp, June 22, 1904, 5700 ft. at 7 A. M.

Ba<sup>c</sup>-cah<sup>h</sup>-ka Kingfisher

June 22, 1904.

Behuka Bal - dah<sup>h</sup> - goon



At 6750 feet yellow-faces were feeding on black berries. Shot 6; a Pigeon and Yellow-head.

Aneroid reading at camp 5700 feet

At sulphur vents 7540 "

At highest trap 7750 "

We took our shotguns up to highest traps but a cold rain had driven all birds and any mammals that may exist to cover. We saw birds in the low trees until we reached the bare rocks. Monkey (?) droppings up to 7700 feet.

Bogo names:

Rock	Bah-to
Sulphur	Lah-de (cah-pe)
Huckleberry	Dung-col
Yew	Gah-eng
Big red flower	Cah-loong-ping
Fly-trap Pitcher plant	Tah-koong
Lycopodium	Bon-get
Stiff Fern	Bar-rah-we
Big Hawk (shot)	Bahn-ocg
Animal	Ma-na-op
Bird	Lahng-oon-ca-man-cok
Tree	Ky-oc
Man, men	Lahng-oon ca-manobo
Women, women	Lahng-oon ca-buy-e.
Child	Mar-en-te-ca-bah-tah
Woman	Buy-e
Man	Suo-bcd
Black	Mah-tum
White	Mah-poo-te
Red	Mah-loc-to
Blue	Mah-loo-no
Yellow	Mah-rah-rog
Green	Mah-lee-no
	(Blue and green are the same)
Brown	Mah-loc-to (red)
Egg	Tah-loog'

The Dugong, called Due-yoong by the Bogobonatives, is abundant in Malalag, S. Mindanao. Its flesh is said to taste like pork. This information was given me by a Bogobo named Angel Brioso.

Personnel.

Camp Goodfellow.

Edgar A. Mearns,

Major and Surgeon, U. S. A.

Fletcher L. Keller, Davao.

Fermain' Goostah (branded F. G. on left forearm) Mestizo. Father Viscayan,

Mother Bogobo. Residence Santa Cruz

Tee-hook-te (Jim) Moro

Tan-gee-lahn-e (Charley) Moro

Bogobos:

Ong-ott (Practico or guide) 50 years

Mamel (Practico's son) 10 "

Sah-doo ( " " ) 12 "

Sañ-de, 25 yrs.

A prawn (Bogobo: Dah-dahng') was brought me by a Bogobo from a hot spring,

June 22.

June 23, 1903.

Hard rain all night. Stream (Se-re-bahn) full to top of banks up to our houses. (Se-bu-lon' is the name of the river we came up. Took 6 hours. Same as the Tab-alayan River at Gulf).

Dugong Du-yoong

Crayfish (Dah-dahng') from Hot Spring. Alt. 4050 ft.

One bird's note we have been unable to place. It is constantly heard whistling "please-come-here". The Bogobo name is Kay-uh-doo-deen (leacomantis supplied in ink in the journal).

On June 25, Pvt. Keller visited our traps at 7600 ft. He shot 2 Honey Creepers, among the whortleberry bushes at 8000 ft., and went up to the second sulphur vent 8100 ft. The aneroid registered 5830 on his return to camp at 2 P. M.



Biggest Horned Bug. June 26, 1904 is called Boon-sah-loo.

The bird giving voice to such a prolonged gush of song is called by the Bogobos Doo-roog-ba-tang.

The big bird that flies over the treetops with a loud whurring sound is called K'lan-te-pok.

Mouse No. 5671 is called Tah-de-ahn.

Monkey

Loo-toong

73479

Kahl-le-ah-cle-uh

13480 Parus

Kah-tu-re-nay

Bu-ru-ing

Saffron-headed Forest Raincrow Sah-gook-sook  
(leacomantis)

Kay-uh-doo-de

"Tee-too-tee" /the bird we so often hear whistling

about camp.

Bird names:

No. 13447 Tick-ka-ling  
13436 Bul-la-lu-eng  
13437 Tah-ga-poi-yah-poi-yah  
Blue Flycatcher Cal-le-to-le-to.

Flocks of birds that look like Parrots frequently fly high over camp. The Bogobos say they are black and call them Too-sing (Racquet-tailed Parrot).  
Ber-ris-ber-ris is the little yellow breasted bird (No. 13506.)  
Toom-piss is the little black-and-white bird (13500)

#### Thermometer Record.

July 1,	6 P. M.	62
"	2 5:30 A. M.	51
"	2 12 M	64
"	2 6 P. M.	62
"	2 10:30 P. M.	54
July 3	5:50 A. M.	54
	12 M.	64
	6 P. M.	63
	9:15 P. M.	56
	11:15 P. M.	55
4	12:02 A. M.	54
	6 A. M.	49
	8:30 A. M.	57
	12 M.	64
	3 P. M.	65 $\frac{1}{2}$
	6 P. M.	59 $\frac{1}{2}$

July 4	8:30 P. M.	58
5	12:01 M	55
5	6 A. M.	52
6	6 P. M.	62
7	12:01 A. M.	54
7	5 A. M.	53

Kom-i-se-ring is the name of a bee given me by Ahn-dee and put in a phial.

At Camp, Aneroid 3 P. M. July 2, 5950.

Green Lizard	Lah-mad
Spotted Lizard	E-bid-tan-uh
Small house	Gecho Tuck-tuck
White striped Snake, (6 speci)	Tah-bah-deeng
Pink-bellied brown Snake (1 specimen)	My-yupe
Yellow-bellied snake (1)	Too-lee-gah.
The big clawed Crawfish is	Dah-dahng
The Franon is Ia-haht	Dah-dahng
Green Fly	Lahng-oh
Big spotted bellied Frog	Bock-bock
Sylvaticus pattem Frog	En-cah-wahn
Big-headed dark Toad	Cah-ly-yah (2 specimens)
Little dark bellied Toad	Teck-teck (4 spec.)
Camp (6000 ft.) tree frog (Many)	Ut-teen (many specimens) (Others from Tu-dy-yah).
Big brown Pigeon	Par-rah-boo-yahn
The big green cones are called	Dee-nore
Back basket	Bo-koog Bo-let
Spotted Parrot	Leese-leese

July 3, 1904.

Heard large Woodpecker rapping on tree about 6000 feet. The first one note. Many Raquet-tailed Parrots flying in chattering flocks. Roosters crowing on hilltops. Deer barking. Birds singing.

Aneroid at 8 A. M. 5875 feet.

Bogobo got a long legged Tree Frog (Utt-teen) above this camp in mountain at 6000 ft. I labelled the specimen.

Moro Charley found a white-striped snake (Tah-bah-deeng) at 6000 ft. and two more (444 & 445) later. Aneroid 6 P. M. 5930 feet. Poo-lo equals Night bird that whistles "Who-who".

Night owl	Bung-yit
2nd Civet	Toong-cal-ocng
1st "	Too-bing



July 4, 1904.

A Titmouse and Zosterops brought in by Ahn-dee yesterday were too badly shot for preservation. 5 other birds including a spotted Parrot were fit for specimens.

Lah-modd is the Bogobo name of the long-tailed green lizard brought in yesterday.

Trogon	Kaa-sh-doo-deen
Big White-tailed Rat	Ooom-bow Man-an-ahn-dee
Soft-furred Brown Rat	" " Tahy-ry-ahn

Our camp is on the Se-re-bon River. The old shack measures 11 by 15 feet, the new one 9 by 15.

Temperature of Serebon River water (in shade)  $64^{\circ}$ . Temperature of spring  $57\frac{1}{2}^{\circ}$

Funds June 13, 1904.

In keeping of Dr. Cole \$120.00

In pocket (Silver, gold val.) 9.32

" sack " " "

" candy can " " "

Total

On hand July 4, 1904, Eighty 60/100 pesos (P. 80 60/100).

Female large White-tailed Rat contained 2 large fetuses July 3, (No. 5703).

2-0-2  
Mammae  $\frac{2-0-2}{2}$  equals 4 pairs.

July 5, 1904.

Keller and I climbed Mt. Apo carrying a poncho, blanket, sweater and coat, besides a shotgun, ammunition and one day's ration. Slept on West Peak.

Set 25 traps. Caught one.

Expenses Apo Trip:

Board 3 days on Troy	#3.00
Broken pitcher replaced	
Fee-muchacho	. 10
Rice and fish for "Jim" (Moro)	6.00
2 Knives (for fish)	1.00
Commissaries	4.00
1 Bottle Mt. Vernon	2.00
Goods for trade with natives	8.33
Gave Dr. Cole to keep for me	120.00
Paid Harbord on Ac. (Loan)	(to go on comm. bill)
	10.00
Paid 13 Santa Cruz Bogobos	P8.00
" " " " "	6.50
" 3 Tabuton	4.50
" 4 " "	2.00
" for grub & prents & loan	8.90

July 5, 1904.

New mammal on the summit of Apo (W. Peak). Visited the 5 principal peaks and lagoon reading barometer and thermometer at each. Took temperature of water of lagoon and at West Peak and several readings of barometer and thermometer during night. Shot only black thrushes and Zosterops.

Salog Calabassbac Sall-lcg Kal-ab-bass-bass Swift's Nest

Other nests:

Kah-taa-moag

Tib-boo-col (2 nests and one of them containing 2 eggs)

Temperature 6 P. M. 59

" 12 noon

There are no fish in the river at Tudaya, not even little ones. No bats seen and no squirrels. Temperature at 9:30 A. M. 57° F.

Aneroid at 6 A. M. 6000

" " 12 M. 6000

" " 9:30 P. M. 5900

July 8, 1904.

Aneroid 5:30 A. M. 6000. Thermometer 5:30 A. M. 55° F.

Titmouse	Tah-rhee-may
Brown Bird	Du-ruge-bah-tong
Honey Creeper	Cap-pew-yu-ahn
Brown red Bird	Que-yew-awh-toi

Aneroid 12 M. 6000  
Thermometer 67 at 12 M.

Aneroid 6050 at 2 P. M.  
Thermometer 66 at 2 P M.

Red-brown Bird Kick-ye-k'yo

Aneroid at 5 P. M. 6050  
" " 6 P. M. 6025

Thermometer at 6 P. M. 58<sup>o</sup>  
" " 10 P. M. 55  
Aneroid at 10 P. M. 6000

July 9, 1904.

Aneroid at 3 A. M. 6000  
Thermometer 3 A. M. 54  
" 6 A. M. 53

Aneroid at 6 " " 6000

Birds No. 13558 and 9 had the conjunctiva a brilliant blue.

Aneroid at 12 M. 6000  
Thermometer do (shade) 67  
" " (sun) 84  
" at 7:15 P. M. 55  
Aneroid at 6 P. M. 6050

Datto Mung-uh came up with his men to move us down to To-dy-uh tomorrow.

July 10, 1904.

Broke camp at 7:20 A. M. Aneroid at 6 A. M. 6000. Thermometer at 6 A. M. 51.

Reached first crossing of the Se-re-bahn River at 7:40 A. M. Aneroid 5650.

Reached second crossing of Se-re-bahn River at 10:05 A. M. Aneroid 5275 ft.

Trogous and Gray-headed Singer here singing. Also Too-sing Parrots. Also a parrot called Zahng-gahm. From this crossing we can hear the roar of the Se-boohl-shn River on our left.



The tree-trunks lose their heavy coating of moss at just about 5000 ft.

As we approached the hot spring, the roar of the stream was heard on our right. At the thermal spring this stream (the Tahm-bo of the Bogobos) enters a cave in full volume and disappears. The Thermal Spring is called Mang-itt. Its water ran the thermometer above the graded point at 120° F. and had to be taken out to prevent bursting. The adjacent stream had a temperature of 70° F. Specimen of water taken from thermal spring. Air temperature at Thermal Spring 69° F. Of water at second crossing below cave, 71° F. All of these readings were just before 9 A. M., when we left Thermal Sp.

At 9:20 A. M. crossed the Se-re-bahn River, the water having a temperature of but 65° F. Aneroid 4350 ft.

First Calaos near Too-dye-yah at 4120 ft. Top of hill back of Todaya 4225 feet. Thermometer 76° F. Here we found the first Fish-tail Palm. Time 10:50 A. M. First Crows seen at top of Todaya hill, 4225 feet. First White-headed Chat. Foot of Todaya hill 3550 ft. at 11:40 A. M. Thermometer 80° F. Reached Datto Mung-uh's at 12 M. Thermometer 83° F. Aneroid 3875.

The big cone-tree is Day-noir. Swallow Shrike Boo-ree-bid. Small lemar leaved Orchis is Rheum-maht. At Datto Mung-uh's Aneroid 3850; Thermometer 71° F. 6:30 P. M. Our two species of Bats are: Kohs-sett and Lagh-boong-ahngo.

Thermometer 68 at 7:30.

On the night of July 9 a small Bat flew into our hut—the only one seen there. Keller saw a small bat flying by daylight at the Hot Springs at 9 A. M. July 10.

July 11, 1904.

Thermometer at 5 A. M. 71  
 " " 9 A. M. 80  
 Aneroid " 9 A. M. 3700

Trapped mammals and a new bird (Te-ong-tail-oh). Found beautiful nests of the

Kop-poay-yoh-po-yoh and shot female on nest (No. 13585). Another nest of Tib-boo-cool with 2 eggs.

Swallow-Swift Ded-dett

Brown Bird caught in steel trap Doo-roogh-bah-tong.

Ahn-dee brought in nest of My-yah (Brown Java Sparrow), Del-ooch-mah-tee with one egg (white) and Tib-boo-cool nest with 2 eggs. Also a Tah-go-say-ahn or Hairy-back.

Oriole--Sah-lee-oh

Thermometer at 6 P. M. 78°  
 " " 7:30 P. M. 78  
 Aneroid at 7:30 P. M. 3800

July 12, 1904.

Aneroid at 6:30 A. M. 3780

Thermometer " " 65°

Brown-breasted Thrush Yu-ach-oh  
 Little Brown Pigeon Lee-moke-un  
 Red Shrew Tar-rah Bah-boo-ey

Thermometer 71 and aneroid 7800 at 6 P. M.

July 13, 1904.

Aneroid at 6 A. M. 3800

Thermometer " 65

Today is on the River Bah-roaring. At the house where the old woman gave us the bino, at 7:20 A. M. aneroid registered 3000 feet. Thermometer 74°. A woman was ironing hemp cloth. Her iron was a smooth shell fixed on the end of a spring pole. Reached the River Soo-tu-ahn at 8:15 A. M. Aneroid 2050, Thermometer 76° F. The Least Swallows (Pong-pong) were flying over the rocky stream. The Bogobos say they build on the cliffs. Eggs white. But the Datto says they nest in arbor. Water temperature of Soo-boo-ahn River. Reached the Sal-ooch-oo-bahn River (25 feet lower) a few minutes after our rest and found it

insignificant in volume compared to what it was when we came up, when we had to rope crossings. At 9:30 we were through the camp dry from the crotch up. The contents of my canvas shooting coat were dry. Aneroid 1840 ft., thermometer 78, 9:20 A. M. at point of leaving the River Saloosuban. Water 69° F.

It was a mistake, I having misunderstood the Datto. We got through the canyon at 9:50. Air temperature 79. River water 69. Aneroid 1730 feet.

Old Practico's house 2140 ft.

Arrived at Datto Alli's place at Jungcahling at 10:45. Aneroid 2000  
Thermometer 83° F.

Behr-kohs Bright blue Flycatcher.

Reached Bahr-ah-cuh-ton River at 1:45 P. M. Thermometer 83° . Aneroid 1400 ft. The top was 1520 ft. The Booratia River on our right.

Soon the high Bogobo village of Sim-bah across the river on our right ~~reached~~ came into view. We reached the timber strip bordering the Gulf of Davao, after crossing the broad cogonal at 3:15 P. M. It was cloudy all the way, with a cool sea breeze and superb, dry trail. We rested under the tall trees beside the Soc-boo-ahn River (here called Kebalayan ?) near Gregoria. Many birds singing overhead.

On the Boo-ré-lid River (1400 feet) we saw deposits of Ca-boog bat guano. These large fruit bats are not at Todaya or the high Apo Mts.

Arrived at Tabulaya at 4:30 P. M. Aneroid 480 feet. Thick aneroid 150 feet at Tabatayan. Thermometer 84° F.

Tabatayan 10 P. M. Thermometer 78. Aneroid 325 feet. Check aneroid 80.

Turtle Pahn-new  
Night Heron Mah-cook  
Big Brown Pigeon Sare-rah-boo-yahn



July 14, 1904.

At 6 P. M. check aneroid 100 ft. Our Apo Inst. 350 ft. Thermometer 82.  
 Late breakfast. Sunned collections. Skinned birds and 3 mammals. Set out 40  
 mammal traps. Shot six birds. Rested.  
 Red-backed Green Pigeon: Bogobo: Poo-ney.

July 15, 1904.

At 7 A. M. check aneroid reads 140. Apo Inst. 300. Thermometer 75.  
 at 12 M. check aneroid 140 Apo Instrument 375. Thermometer 83.

The large dusky Swift, called by the Bogobos Cal-ahn-tee-pach, was said to  
 build on cliffs. Four adults were brought me, said to have come from a hollow tree.  
 Saw a Great Blue Heron flying over the Gulf of Davao. We found these birds  
 breeding on the Bahercar-ring River at Todaya. The young set up a tremendous  
 crying every morning.

Two centipedes (Tah-pee-lah) and smooth lizard put in white alcohol bottle  
 from Tabulaya.

July 16, 1904.

Unpacked and repacked. Filled partly made mammal and bird skins, and got  
 ready for a trip to Taliend Island. Our party consisted of Dr. Cole., Gov. Bolton,  
 School Supt. Woods, Lieut. Cheston. The steam launch Troy towed our sailboat to  
 the island, where we landed at dark and slept on the beach, after cooking and eating  
 a meal.

July 17, 1904.

Rose early. Shot birds. Ate breakfast. Sent for natives with dogs. The  
 native (Atta and Samals\*) boats came with the dogs about 8 o'clock and we were on

\* 60 Atlas and 25 Samals on Island

the stands for deer and hog driving at 9 A. M. When hunting birds Bolton and I  
 had seen one hog in the early morning. Many birds seen near my deer stand.

(Now the dogs are barking again)

## Birds seen:

Sea-Eagle  
 Red-billed broadmouth  
 Red-breasted Sunbird  
 Black-throated Sunbird  
 Large green (young) Sunbirds  
 Torcasa Pigeon  
 Raincrow  
 Crow  
 Locustella  
 Hawk that flies over treetops uttering a cry like an exaggeration of Wood Peewee's cry  
 (2 shots)

Ants annoying.

Flock of Brown Java Sparrows  
 One *Tringoides hypoleucus*  
 2 large Curlew  
 Stone-colored Sandpipers  
 Brownbreasted Thrushes  
 Small dusky Swift  
 (Swa Swallow and *Anthus* yesterday in Davao).  
 Calao

Whip Lug-pus (Bogobo)

Spear Pung-i-ami.

*Sin-ah-lap-<sup>ad</sup>* Bead band worn by both men and women over right shoulder and under left arm by men and around the neck by men. Some women wear two.

Talicut Island, July 17, 1904.

1. Yellow-green Sunbird, female adult
2. " " " male juv.  
     Lower mandible tip shot away.
3. Do male juv.
4. Blue Roller goatsucker, male ad.
5. Stone-colored Sandpiper, female adult.
6. *Rhipidura* sp. nov. ----im.
7. Yellow-green Sunbird, male juv.
8. Red-breasted Sunbird, male ad.
9. Do, " juv.
10. Black-throated Sunbird, male adult
11. Red-brown Bird (new) No head, male adult.

July 19, 1904.

Skinned 11 birds in the morning, and went out with Gov. Bolton to shoot birds in the afternoon. Heller went along and set traps. We got one or two new birds.

The brown-breasted thrush is a mimic and imitates parrots and other birds. It and the White-headed Chat are very abundant. The big green parrots are abundant but molting. The little blue-ringed parrot is in good plumage.

On looking up the mountains of the Philippines in the Century Dictionary I see that Apo is given at 10280 feet and Malindan (back of Misamis) 8683.

Bogobo clothing:

Coat	Oom-pahk
Pants	Sah-row-ar
Sack	Kah-beel
Headress	Tahn-ko-ic
Leglets	Tee-cus

July 20, 1904.

Still at Davao. Gov. Bolton is going with me to the Digos Woods tomorrow and I have spent most of the day in preparation. Skinned four mammals caught in the traps. Called on friends.

At 9 P. M. the light of the Mindanao were seen coming up the Gulf. I hastily repacked and got aboard, and at midnight or soon after was on the way to Zamboanga with no prospect of ever seeing the Digos Woods.

July 21, 1904.

At sea. Nothing doing.

July 22, 1904.

When I awoke at 6 A. M. we were lying off the mouth of the Rio Grande waiting for the tide to rise so we could cross the bar and go up to Cottabato. At 12 M. we started, and arrived soon after. Colonel Van Orsdale took me home with him via the office and kept me to dinner. I met Mrs. Davis, Mrs. Morse, Mrs. Fryer and several other old friends and all the officers stationed at Cottabato who are not in the field in pursuit of Datto Ali.

A small Bat was caught in the saloon of the ship and preserved in alcohol.

No. 5741 male.

July 23, 1904.



Still lying at the Cottabato wharf, with no prospect of starting before noon. Birds seen:

Brahmany Kite.  
White-headed Chat  
Rhipidura  
Black-throated Sunbird.

Moro high basket, made of water grass at L. Liguasan also of bamboo,  
Tahm-pong.

July 24, 1904.

Reached Zamboanga at 7:30 A. M.

Jan. 3, 1906. Left Zamboanga on the Sabah at 10 P. M., Genl. Wood, Capt. Langhorne, Major Stanley and Lieut. Johnston and Leonard Wood, Jr.

Jan. 4, 1906. Landed a boat with message at Jolo, Sulu. Quartermaster and Surgeon came aboard for short call.

Sailed for Sibutu Id. at 4 P. M. Landed at a small low coral island called Dammi, going ashore at a point. General W., his son Leonard, and I went to left, the 3 other officers to the right. We found our part of the island burnt over with deep light ash.

Jan. 5, 1906. Awoke with Sibutu Island on our right. Level and low with a mountain in the middle.

Landed early on three small wooded islands connected at low tide by broad stretches of coral and sand.

We visited all three islands.

Jan. 6, 1906. Landed at Bongao. Then steamed to Balambing, Tawi Tawi Id., where Genl. Wood shot at a gang of monkeys on the shore (low tide). Went ashore and chased monkeys but got none.

At 6 P. M. landed at Manuk Manka Island.

January 8, 1906. Landed at old Spanish Fort on the Island of Tawi Tawi.

At 9:15 A. M. landed on a small island, Simaluc Island, and extensive coral tide reef and remained 2 hours. Arrived at Siatu, Siasi Id.

January 18, 1906. General and Leonard Wood and Captain Langhorne landed on W. Bolod Id. at sunrise. Major Stanley, Lieut. Johnston and I landed on E. Bolod Id. or Castle Rock.

Islands visited: Siasi, Sulu, Tawi Tawi, Subutu, E. Bolod or Castle Rock, W. Bolod, Dammi, Mindanao, Baluk Baluk off Bastian Id., Manuk Manka off Tawi Tawi, Simaluc, off Tawi Tawi.

March 8, 1906.

Left Zamboanga for Jolo at 10:20 A. M. Arrived at Jolo at 7 P. M.

Dressed wounded until 12 midnight and brought 34 wounded soldiers, including Capt. Lyree Rivers, Lieut. Johnston, Signal Corps, Lieut. Conway, and Capt. Cook of the Navy to Zamboanga. 20 soldiers killed.

Between Zamboanga and Jolo, on the Sulu Sea, saw many birds.

March 13, 1906.

Left Zamboanga for Kota Bato at 7:15 A. M. Landed at Margosa Tubig at 8 P. M.

March 14, 1906.

Landed at Parang at 8 A. M., and left at 4:30 P. M. Between Malabang and Parang (after daybreak) saw many birds.

Our launch Nassau broke down, and we transferred to the launch Reilly. At evening we saw *Sula sula* and *Sterna bergii boreotis*.

Entered the Rio Grande after dark.

Landed at the mouth of the Mataling River, Malabang, at 1:30 P. M. and remained two hours.

March 16, 1906.

Storm washed over our launch Natchez, and coal and water barrels were thrown overboard.

Baptized Zamboanga at 11 A. M.

April 1, 1906.

Landed at Malanipa Id., off S. W. Mindanao.



Trip to Margosatubig.

Aug. 15-18, 1906.

Aug. 15, 1906. Left Zamboanga at 8 P. M. with Major Nicholls, Inspector General, Bishop Brent, Mr. Armstrong, and Mr. Knight.

Aug. 16, 1906. Daylight found us near the entrance to the Gulf in which the old Spanish fort and Margosa Tubig are.

Aug. 17, 1906. Visited Timoy Tinbuig at Pang-pang.

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Aug. 27, 1906. With Bishop Brent, Mrs. Jervey, Jim and Jean and Marion Moses, took launch to San Ramon farm.

September 1, 1906. Left Zamboanga at 3 P. M. on the U. S. A. T. Seward for Manila. Stormy and rough sea.

September 2, 1906. Many flocks of small waders, *Sterna bergii*. Flocks of Boobies, flocks of Phalaropes.

September 3, 1906. Capt. Reeves, Capt. Langhorne and self landed Cebu 3 P. M. Took baneo with outriggers, 3 boatmen. Crossed to Mactan Island, crossing shallow water over coral reefs abounding with spring sea urchins and red, brown and gray starfishes. Entered a river in mangrove (low variety) forest and passed up until stuck in mud. Left boat and one man and waded through mud and water until rough coral rock replaced the mud and a path was followed for several miles to the Ophun village where 2 boys volunteered to show us Ducks. We went 2 miles farther.

Returning, it became dark and our path was not strewn with roses.

Reached the Seward at 8:30 P. M.

September 8, 1906. Left Manila at 12 M on coastguar Mindanao.

September 9, 1906. Left Mariveles at daylight. Inside course E.  
of Mindoro to Cuyo.

September 10, 1906. Sighted Cuyo at daylight. On Bisucay Id.  
Saw two Ducks alight.

On Sangi Sangi Id., near Bongao are "skunks".

September 11, 1906. Landed at Puerto Princesa, Id. of Palawan.

Inspected Hospital commanded by Contract Surgeon De Krafft. In Governor Miller's house I saw skins of the Palawan Pheasant, Jungle cock, Black Crying Cuckoo, etc., all skinned by Sergeant Neumann, Hosp. Corps.

Steered for Malampaya Sound at 12 M.

September 12, 1906. Isles of Malampaya Sound, Paragua. Explored 3 islets and two other boats (Dorey and I paddled the canoe) explored the River and shot at Crocodiles.

September 13, 1906. At daylight were in Halstead Straits Many islets and intricate channels. Soil rocky. Trees mostly small, but green verdure everywhere.

Landed and inspected leper colony at Culion, Calamian Id.

September 17, 1906.

With Capt. Dorey and Mr. Fletcher, visited the Marble Canyon. Left Military Plaza, Manila, at 6:30 A. M. in dougherty which was left at Pumping Station. Walked one mile and met another dougherty wagon, which took us to Maraguina, thence to San Mateo, and thence to the Marble Canyon. Returning left the wagon at Pumping Station and canoed to Ft. McKinley, thence by launch

to Estado Mayor.

September 21, 1906. Left Manila 9:51 A. M. with Mr. Fletcher and Lt. Barnett for Antipolo. Leaving the train at Tay Tay, 20 miles from Manila, we rode in carometas to Antipolo, 5 miles, and saw the shrine and Virgin of Antipola in the church, after lunching at the house of the Presidente of Antipolo.

Cajoagan, N. Samar, P. I.



HEADQUARTERS DEPARTMENT OF MINDANAO,  
Chief Surgeon's Office,  
Zamboanga, P. I.

July 10th, 1906.

The Military Secretary,

Department of Mindanao,

(Thro' Military Channels)

Sir:

According to the directions of Major Edgar A. Mearns, Chief Surgeon, Department of Mindanao, I herewith respectfully submit this report from my records and observations made while on duty with the Biological and Geographical Reconnaissance of the Malindang Mountain Group, commanded by Major Mearns, U. S. Army. The expedition left the old fort at Misamis at 11:00 A. M., May 9th, 1906, after having secured cargadores and a guide for Tangob, passing through Misamis, which is a town inhabited by about 7000 Filipinos and 600 Moros, we followed the shore for about 1-1/2 miles until we reached the Malobang River, which is at this place about 200 feet wide. An old pile bridge leads across it, and a small Filipino settlement bearing the same name is located at its mouth. From here we followed the trail to Tangob, which is very clearly defined by much travel. The ground is rolling, rough, and rocky, covered by woods and underbrush, occasionally broken by a clearing where the natives had cut and burned the timber and planted hemp. This continued for about 4 miles. From here the trail was much better, leading through large clearings, covered with grass. At 4:00 P. M. we reached the Diguán River, and, as there was plenty of running water, we went into camp. At 8:00 A. M., May 10th, we broke camp, and, after following the trail for about 2-1/2 miles more, crossed the Magquiaquay River, near Tangob, and arrived at the Presidente's house at 10:00 A. M. Here 8 carabao were secured to carry the largest portion of the rations which had arrived by boat from Misamis, and, after engaging a new guide, the

party left, at 12:00 M. for Catagan, passing through Tangob, which is a town of about 3000 inhabitants, mostly Filipinos, and followed a trail much used by Subanos, which led mostly northwest for 3 miles. The ground is almost level rising, hardly noticeably, to an elevation of 200 feet. On both sides of the trail are large clearings covered with grass, and travelling up to this point, which is actually the foot of the Malindang group is very easy. Here we crossed the Malabug River, which at this point is about 50 feet wide and has running water. About one mile East of this point the water of the Malabug River disappears between the rocks underground. From here the trail is rocky, over rolling ground and through dry ravines, timber and underbrush on both sides. Just before reaching Catagan we passed thro' a large hemp grove. At 3:00 P. M. our party reached Catagan, a small Subano settlement (altitude 1100 feet). The casas are built on the slope of the mountain and surrounded by hemp groves. The largest casa in the settlement, about 100 by 40 feet, belongs to the Datu Anib, the chief of the settlement. This Subano tribe, especially the Datu, an old man, did everything in his power to make it comfortable for the party, even to the extent of moving his family into another "shack," and giving us possession of his own casa. He, later on, provided the party with rice, chickens and eggs, which were very cheap. The religion of this tribe is sun worship; and one of their customs is to vacate a casa after its master had died, which accounted for several empty "shacks" which we found in the neighborhood.

On May 15th, Major Mearns, Captain Jervey and Lieutenant Earle, made a reconnoissance north of Catagan, and reached the peak of Mt. Lebo, elevation 5750 feet. This is the mountain which Captain C. C. Smith ascended, in 1904. On the same day, Major Mearns, in descending west of Mt. Lebo, found a narrow ridge leading west, and this the party followed the next morning for about 2 miles, and came to the foot of another mountain, which they ascended. This peak has



the same elevation as Mt. Lebo, 5750 feet; barometer readings one hour apart. This very prominent conical peak was named Mount Bliss. From it a very good view is obtained of Grand Malindang Peak; but, as a canyon 2500 feet deep made any further progress impossible, after taking readings on the different peaks, and sizing up the general locality, the party camped on Mt. Bliss, returning to Catagan, May 17th, 1906.

On May 18th, 1906, Privates West and Mott left Catagan for the purpose of finding a passage thro' the canyon north of Mt. Lebo. They ascended this mountain, and, after camping there, descended on the northern slope of Mt. Lebo, May 19th. After a perilous climb down the canyon about 2500 feet, they arrived at an unknown river which came from the northwest. This river they followed for about 2 miles east, and, on finding it not passable for cargadores, camped there. On May 20th, West and Mott followed the river to its source and found it leading up to a high divide between Mt. Bliss and Mt. Bentad. Here they ascended Mt. Bliss over the divide, which was found comparatively easy. Having thus successfully explored the gorge, and found plenty of water, they returned to Catagan, May 22, '06.

On the advice of Dabu Anib, Lieutenant James L. Wood, with a detachment of the Constabulary, started, May 18th, for the Moro town of Balinsang, to find a guide to Grand Malindang, but found none. He then explored several rivers entering into the Misamis Bay, but found all impracticable for cargadores, with the exception of the Matabug. This river, Lieutenant Wood followed north May 20th. At the elevation of 2400 feet he came to a Subano settlement of four or five casas, but these also knew of no trail to Grand Malindang. From here he followed the river to 3000 feet elevation, where a small tributary came from the north into the Matabug. From here, Lieutenant Wood climbed to the peak of Mt. Lebo to take observations, as it was almost impossible to determine the



locality from the gorge of the Malabug. On May 21st he again descended to the river, and followed it <sup>to</sup> 3350 feet elevation, where it forked, one branch going north, the other northwest. He followed the larger one to an elevation of 3810 feet, and found it impossible to go further on account of the roughness of the country. Lieutenant Wood decided to ascend Mt. Bliss, which he found to be very difficult. Here he camped, returning to Catagan May 22nd, 1906.

On May 23rd, Mr. Hutchinson and Private West started to find a way of getting to the summit of Grand Malindang by following the lower course of the Bliss River (so we named the river which West and Mott had discovered). A Subano guide led him northeast from Catagan, thro' the Subano settlements Kimat and Kapatagan across several rivers (which are located on the new map). No trail leading any farther north, they followed through the forest, going mostly N. 20 west. This course they kept for nearly three hours when the rim of the gorge was reached, elevation 3200 feet, and, a thousand feet below, they beheld the Bliss River, impossible to reach, as the slopes were almost perpendicular. The party camped here, and, on the next day, tried in vain to find a way to go down to the river; so they followed the gorge for some distance south and then by compass route, returned till they struck the Maculan trail, where they camped, returning the next day, by way of Kimat, to Catagan, arriving May 25, 1906.

On May 19th, Captain Jervey and Lieutenant Earle, with Privates Bently, Cragan and Egbert, returned to Misamis, and here Captain Jervey engaged a guide for Jimenez, a town northeast of Misamis, to inquire about a trail leading from that town to the foothills of Grand Malindang, but on arrival at Jimenez, Captain Jervey and Lieutenant Earle received telegraphic instructions, from Department Headquarters, to return to Zamboanga. Before leaving Misamis, Lieut. Earle and Private Bently laid off a base line on the beach, and took readings by transit for triangulation on the peak of Grand Malindang.

Captain Jervey and party then returned by vinta to Camp Overton, leaving

Misamis, May 22nd. On May 25th, Lieutenant Wood had been ordered to Iligan, and left Catagan the same day. The party having thus been reduced to one-half of its original strength, Major Mearns decided to reach Grand Malindang by crossing the great gorge north of Mt. Bliss. Therefore, on May 26th, the party started from Catagan at 8:15 A. M., and followed a trail mostly  $340^{\circ}$ , high grass on both sides for about a mile, then through woods and underbrush until it strikes the Balinsang trail; this we followed for some distance and then followed the bed of a dry river, then crossing another small ridge, until we struck the bed of the Malabug River. This again we followed for about 300 yds. The river is here about 60 feet wide, but the amount of water would not make more than a 6-inch stream. After leaving the river we followed the long ridge, which is leading to an almost continuous slope of from  $15^{\circ}$  to  $20^{\circ}$  for eight miles, to the top of Mt. Lebo. It is here fairly good travelling, as the underbrush is not very dense but with more high timber, which is, on this ridge, especially tall, from 160 to 200 feet and from 2 to 5 feet in diameter. At 2:15 P. M. we reached Mt. Lebo, and, from here, followed over a narrow ridge, about twenty feet wide, for 2 miles west until we reached the foot of the peak of Mt. Bliss, reaching its summit at 3:45 P. M., May 26. Here the party went into camp, and as the vegetation was very beautiful, and mountain birds abundant, Major Mearns decided to stay there for several days. On May 28th, Private West with Sergeant Pashandalan, of the Constabulary, and 4 cargadores, started on a reconnoissance of the gorge, and if possible to find a trail to the summit of Grand Malindang. He went down to the Bliss River, north of Mt. Bliss, and, after following it for several miles, ascended the ridge to the north, supposing that it was a foothill of Grand Malindang. He followed this ridge until he got to a peak from where he could get some bearings and found that Grand Malindang was almost due north of him. Therefore, he continued along the ridge, climbing higher and higher until he reached the very peak on May 29th, but found



to his disappointment, that he had climbed the wrong peak, altho' it was only about 800 feet lower than Grand Malindang, and that mountain only a mile away. Seeing that he could not reach this one peak which had become the Mecca of our hopes by this time, as there was a gorge about 5000 feet deep separating the two mountains and not being able to continue any further, West and Pashandalan camped that night on top; and Sergeant Pashandalan shot a deer, which replenished their stores somewhat and turned out, later on, to be a new species of its kind, as West saved the skin and skull, and brought them back to camp. The next day the party started on the return trip, and descended the mountain to the left, and, at an elevation of 5000 feet, found several springs, and followed the small creek which led from one of them; and as it was the easiest way of travel kept following the river it entered into for about 6 miles, when, at a lucky moment, West got a view of Mt. Bliss, and, following then his compass, climbed over a ridge and reached the Bliss River, and thence returned to the camp on Mt. Bliss in the afternoon of May 31st.

On June 1st, at 12:00 M., the main party started from Mt. Bliss and following over a hogback down the north slope to the ridge which connects Mt. Bentad, partly, with Mt. Bliss. This ridge we followed until the water was plainly heard from below, and here we descended to the Bliss River, which was reached at 2:00 P. M. This river we followed for about 2 miles. It is from 50 to 70 feet wide, with water enough to make a 12- inch stream. The grandeur of the foliage in the banks of this river is very striking. Palms, ferns and vines, constitute the undergrowth, while mighty malava and red-wood trees rise to a height of more than 200 feet. At a point blazed by West, on his expedition, we turned to the north, and from 3200 feet elevation at the Bliss River, we climbed to the peak of this ridge at an elevation of 4900 feet. From here, instead of following the ridge, we descended to the north side, which was very steep, and, at an elevation of 3800 feet, struck the



Malindang River at 6:15 P. M. Here we camped and became very closely acquainted with quite a few land leeches, which inhabit this river gorge as thickly as mosquitoes at Zamboanga. The leeches are so peculiarly constructed as to be able to grow, at your expense, to about 1/2 inch in diameter, without being discovered. At 8:40 A. M., June 2nd, we started to ascend the Malindang River. It is from 50 to 60 feet wide, and contains from 6 inches to 2 feet of water. The river-bed is continually rising at a 5° to 8° incline. The water comes down in continual rapids. The scenery of this river is very beautiful, especially in some places, where the river comes thro' narrow canyons with perpendicular rock walls on both sides, from 50 to 100 feet high, covered with moss of various descriptions; and flowers are seen wherever your eyes may turn. In some places, mighty trees, growing on opposite sides of the river, have joined their branches; and attached vines and orchids which were everywhere in untold different species, completed the most gorgeous of arches. From the right, as also from the left, several small tributaries enter into the Malindang River over falls from 40 to 50 feet high.

Thus we continued for about 6 miles, when, at 1:45 P. M., we reached the place where the Malindang River forks into two branches one coming from the north, the other from the west. We followed the one from the north, the smaller one of the two, and named it Raspberry Creek, because we had to chop our way with bolos thro' a mass of raspberry bushes, which grew on both sides of the creek, and joined hands across it. Here also we found species of violets growing on the banks of the creek, the same as in the United States. We climbed over several falls, from 20 to 30 feet high, and then came to one about 50 feet high which we could not climb. Here we branched off to the right, and climbed up to the main ridge. Here we found, at 6100 feet, a level spot, and went into camp at 3:15 P. M., June 2nd, and named it McMurray Flats, after Jackson J. McMurray, Hospital Corps, U. S. Army. The next morning we got a fine view of Malindang Peak from a high tree at McMurray Flats,

and as the rest of the climb looked favorable, decided to start for the peak the next day.

At 9:00 A. M., June 4th, Major Mearns, W. G. Hutchinson and myself started for the top, following a narrow ridge at an angle from  $40^{\circ}$  to  $50^{\circ}$ , first going northwest and then north. It proved to be the hardest climb of the whole expedition, as in many places we had to climb hand over hand almost straight up. The last 1500 feet from the summit is covered by a heavy Tundra-like growth. Moss has covered everything a foot or more thick in some places; and branches two inches in diameter looked like the trunk of a tree, or immense roots, which makes climbing dangerous. Among these moss-covered branches grew the most beautiful white and red orchids, and many other kinds of small white, yellow, and blue flowers. In some places on the side of the mountain and on the ridge are large patches of cogon grass. At 11:30 A. M. we reached the peak of Grand Malindang, but it was so foggy that we could not see 50 yards anywhere, but as the ridge did not lead any farther we concluded that we had reached our goal. Mr. Hutchinson, in scouting around at the top, discovered a small spring not more than 100 yards from the peak, and by digging a hole as a reservoir, we were provided with ice water, as the temperature never went above  $58^{\circ}$  and not below  $50^{\circ}$  air temperature. We next proceeded to build a fire, as it was bitter cold, and damp from the thick fog, and established a camp. Major Mearns returned to McMurray Flats that day for the purpose of bringing up more provisions, and 50 mammal traps. Mr. Hutchinson and myself staid on top to take observations when the atmosphere should become clear. The clouds disappeared about 4:00 P. M., and the atmosphere became very clear. We climbed a large tree which had partly fallen over the edge of the peak and gave us therefrom a view to all sides, a view too grand for description. Down before our eyes lay Mindanao like one great miniature; mountains 3000 feet high looking like small hills, and beyond them from the coast very clearly defined, stretched the ocean in its calm

magnificence to the very horizon, many miles away. I took readings on all the prominent points, compass and klinometer. After supper we watched the sunset; it came later than usual. The atmosphere was as clear as crystal as only a few clouds were floating far beneath. This sight alone was worth the climbing of grand old Malindang. The following day Major Mearns returned. Privates Mott and McMurray and Senor Estrellas also climbed to the top that day, but returned in the afternoon. That day we erected on top a stone monument, 3 feet high, and on top in the monument, was put a bottle with the itinerary of the expedition. Major Mearns stayed on the summit three days and collected a good many birds, animals, and botanical specimens.

On June 7th, at 12:00 M., we descended to the McMurray Flats. On June 8th, the whole party returned to the Camp on Mt. Bliss, and, June 9th, marched from there to Catagan, where we rested for one day. June 11th, we bid our friend Datu Anib, "ADIOS," who had so hospitably received and entertained us, and went down to Tangob, from there we returned to Misamis by vinta, arriving at 4:00 P. M., June 11th. June 12th, returned to Camp Overton by launch.

Very respectfully,

(Signed) Robert Schroeder

Co. "4", Engrs. U. S. A.



## Biological and Geographical Reconnaissance of the Malindang Mountain Group.

Members of Party.

Major Edgar A. Mearns, Surgeon, U. S. Army.

Captain James P. Jervey, Corps of Engineers, U. S. Army.

2nd Lieutenant J. H. Earle, " " " " " "

Lieutenant Wood, Philippine Constabulary.

Mr. W. J. Hutchinson, Bureau of Forestry.

Private 1st Class Schroder, Co. A. U. S. Engineer Corps.

" " " Bently " " " " " "

" " " Cragan " " " " " "

Private Egbert, Co. A. U. S. Engineer Corps.

Private 1st Class Jackson C. McMurray, Hospital Corps, U. S. A.

Sergeant Leakins, 19th Infantry.

Private Mott, " "

" West. " "

" Van Allen, " "

Sergeant Pasandalan and 5 Privates, Philippine Constabulary.

28 Caragadores. (Moros)

Senor Wenceslao Estrellas.

R. Schroder.

## Readings During March, 1906.

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Left Tangob at 1:00 P. M., May 10, 1906.

TIME	COMPASS	BAROMETER	Remarks
10 M.	320	25	Passing through Tangol.
5 M.	340	25	
5 M.	300	25	Hemp groves.
5 M.	280	50	Grass.
10 M.	260	50	Crossing Tangob River, 40 ft. 200°
5 M.	250	75	Grass.
10 M.	300	125	Grass.
10 M.	320	150	Crossing dry creek, 100°, Woods.
5 M.	280	200	High grass.
10 M.	340	250	" "
10 M.	300	350	" "
10 M.	300	500	Thro' woods and patches of high grass
10 M.	260	650	" " " " " " "
5 M.	300	700	Crossing Malabug R. 70° 30 Ft.
5 M.	340	800	Thro' woods.
5 M.	290	850	Thro' Hemp grove for 400 yds.
10 M.	330	950	Crossing dry Ravine, 100° Woods.
5 M.	340	1050	Hemp grove. Crossing dry ravine 180
10 M.	340	1150	Arrived Catagan.

Left Catagan 8:15 A. M., May 26th, 1906.

30 M.	340	1400	Thro' high grass and woods.
5 M.	345	1350	Big woods, 275 yds. in 5 min.
5 M.	270	1350	Following rocky ravine 300 yds.
10 M.	320	1500	After leaving trail thro' woods.
10 M.	250	1400	Descend to deep ravine to left 50 to 75 feet.
10 M.	290	1500	Left ravine thro' woods.
10 M.	360	1700	Following Malabug R. 60° wide.
10 M.	70	1850	Ascending ridge thro' woods.
10 M.	340	1950	Thro' wood deep gorge to west.
5 M.	320	2100	Thro' woods, rocky trail.
10 M.	300	2350	" " 250 yds. in 5 min.
10 M.	290	2450	" "
10 M.	340	2550	" " 250 yds. in 5 min.
10 M.	350	2700	" "
10 M.	340	2850	" "
10 M.	340	3000	" " 260 yds in 5 min.
10 M.	10	3100	" "
10 M.	330	3250	" "

TIME	COMPASS	BAROMETER	REMARKS
10 M.	350	3400	: Thro' woods, 250 yds. in 3 min.
5 M.	310	3500	: " " "
5 M.	360	3600	: " " "
5 M.	340	3700	: " " 250 yds. in 5 min.
15 M.	350	4000	: Everything covered with moss.
20 M.	320	4300	: Big timber--large ferns--moss.
5 M.	340	4400	: Steep gorge to W. slope--42°.
10 M.	350	4500	: " 225 yds in 3 min.
10 M.	360	4800	: " 225 yds. in 5 min.
10 M.	40	5000	: Trail follows narrow ridge.
15 M.	360	5300	: Trees scrubby covered with moss.
20 M.	340	5600	: " 225 yds. in 5 min.
15 M.	300	5750	: Arrived on Peak Lebo 50 x 100 level
10 M.	300	5600	: Descending to ridge.
5 M.	330	5500	: Following along ridge 20 ft. wide.
10 M.	290	5500	: " " "
15 M.	300	5500	: " " 200 yds. in 5 min.
10 M.	260	5600	: Ascending to Mt. Bliss.
5 M.	240	5700	: " 175 yds. in 5 min.
5 M.	250	5750	: Arrived summit Mt. Bliss 75 x 300 lev.

Start Mt. Bliss 12:10 P. M., June 1st, 1906.

3 M.	30	5750	: From camp to northern slope of peak.
10 M.	360	5500	: Descending over hog back.
10 M.	340	5250	: " " "
5 M.	310	5000	: " 250 yds. in 5 min.
10 M.	300	4900	: Following ridge of Divide.
5 M.	270	4800	: " " "
10 M.	320	4800	: " " "
10 M.	290	4800	: Over Divide.
5 M.	340	4800	: " " "
5 M.	30	4700	: Descending down to Bliss River.
10 M.	60	4450	: 200 yds. in 5 min.
10 M.	70	4200	: " " "
5 M.	30	4100	: Descending to Bliss River.
10 M.	60	3900	: " " "
5 M.	70	3800	: 200 yds. in 5 min.
10 M.	60	3600	: Arrived at Bliss River.
5 M.	80	3550	: Following rocky bed R. 20 x 50 wide
10 M.	40	3450	: " " "
10 M.	70	3300	: High trees and ferns 225 yds. 5 min.
5 M.	100	3200	: " " "
10 M.	40	3300	: Left R. to cross over Divide to Malindang River.
5 M.	340	3400	: <del>225 yds. in 5 min.</del>
5 M.	50	3500	: 225 yds. in 5 min.
10 M.	90	3700	: Following ridge leading over Divide.
15 M.	360	4000	: " " " " "
20 M.	340	4400	: " " " " "
10 M.	350	4550	: " 200 yds. in 3 min.
25 M.	360	4900	: Peak of Ridge.
15 M.	270	4700	: Descending from highest point of ridge.
5 M.	270	4600	: Along top of Ridge.
30 M.	360	4200	: Descending to Malindang R.
30 M.	360	3800	: Gorge arr. at bottom & went into camp. R 50 x 75 wide running 55°, rocky bed. much water.



## Short Camp at Malindang River 8:40 A. M., June 2, 1906.

Time	Compass	Barometer	Remarks
10 M.	320	3950	: Following rocky bed Malindang R.
10 M.	340	4050	: River bed 50 x 75 ft. wide.
10 M.	360	4200	: 250 yds. in 5 min.
5 M.	300	4250	:
10 M.	40	4350	: Continuous small rapids.
5 M.	340	4400	: 250 yds. in 5 min.
5 M.	270	4450	: Beautiful foliage--Palms--Ferns.
10 M.	320	4500	: Great canyons.
10 M.	300	4550	: Tributary from 270
15 M.	340	4650	:
15 M.	20	4750	:
10 M.	60	4850	:
10 M.	360	4900	: Tributary entering Malindang R. 300°
10 M.	20	4950	: Tributary entering Malindang R. 20° over 50 ft. fall
10 M.	310	5050	: Tributary 20° over 50 ft. fall.
10 M.	360	5700	: Small trib. 270 20 ft. fall.
10 M.	20	5200	: 240 yds. in 5 min.
10 M.	300	5250	:
10 M.	320	5300	: Small trib. from 60°
15 M.	300	5400	:
5 M.	270	5450	: Small falls 20 ft. high. °
5 M.	320	5500	: Malindang R. branches 330° 250°
15 M.	330	5600	: Raspberry Creek, 10 x 15 ft. wide.
10 M.	340	5700	: Just before Falls 50 ft. high--turned off to : climbridge.
20 M.	360	5950	: Steep climb over rough country.
15 M.	350	6050	: Climbing ridge--150 yds. 5 min.
5 M.	360	6100	: Went into camp--McMurray Flats.

Start McMurray Flats, June 4th, 1906. ° °

20 M.	340	:	: Clinometer readings from 40 to 45
2 H. 10M:	360	:	: Average rate of 200 feet in 5 min.

Arrived on summit. Elevation according observations by barometer and clinometer from Mt. Bliss and McMurray Flats, 9,000 ft.

(Signed) Robert Schroder.

Readings from Mt. Bliss. Elevation 5750.  
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GRAND MALINDANG.

Date : Compass : Clinometer : Estimated Distance.

May 27, '06 : 339° : plus 5.50° : 6 miles  
 Mt. Bintad.  
 May 27, '06 : 297 : " 2.40 : 2½ miles  
 Mt. Wood.  
 May 27, '06 : 336 : " 4.20 : 5½ miles.  
 Mt. Williams.  
 May 27, '06 : 199 : Minus 73 : 1¼ miles

Three flat top mountains across Misamis Bay.

May 28, '06 : 129 : Minus 0.20 : 40 miles.

Highest Peak across Misamis Bay.

May 28, '06 : 138 : Minus 0.10 : About 50 miles  
 Mc Murray Flats.

June 8, '06.: 342 : Plus 0.35 : 5¾ miles.

READINGS FROM GRAND MALINDANG.

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Jun. 4, '06.: 162 : Minus 6 : 6 miles  
 Mt. Bliss.  
 Jun. 4, '06.: 170 : Minus 6°50' : 7 miles  
 Mt. Williams.  
 Jun. 4, '06.: 188 : Minus 6°10' : 5 miles.  
 Mt. Bintad  
 Jun. 4, '06 : 238 : Minus 1°40' : 30 miles  
 Highest peak west.  
 Mt. Wood.  
 Jun. 4, '06 : 200 : Minus 3° : 1½ miles.  
 Sacred Mountain Marahui.  
 Jun. 5, '06 : 106 : Minus 2 : 40 miles  
 Highest peak Southeast.  
 : 152 : Minus 1°30' : About 80 miles  
 Highest East.  
 : 120 : Minus 40 : About 60 miles.  
 Mt. Yaculan.  
 : 126 : " 7°30' : 4 miles  
 Flat top Mountain.  
 : 80 : " 12°10' : 3 miles.  
 Mt. Estrellas.  
 : 350 : " 2°10' : 6 miles.  
 Coast Range.  
 : 15 : " 3 : 8 miles.  
 Mt. Van Allen.  
 : 216 : " 3°40' : 3 miles.

Date : Compass : Clinometer : Estimated Distance.

: 240<sup>o</sup> : Minus 8<sup>o</sup> 20' <sup>Mt. West.</sup> : 4 $\frac{1}{2}$  miles

June. 5, '06. : 250<sup>o</sup> : Minus 9<sup>o</sup> 50' <sup>Mt. Mott.</sup> : 2 $\frac{1}{2}$  miles.

Reading from Fort at Misamis to Peak.

: 285<sup>o</sup> : Plus 5<sup>o</sup> : About 20 miles.

(Signed) Robert Schroder.



## HEIGHT OF SUMMITS IN MALINDANG GROUP.

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Grand Malindang.....	9000
Mt. Wood.....	8200
Mt. Mott.....	7800
Mt. Leakins.....	7600
Mt. Estrellas.....	7500
Mt. Van Allen.....	6600
Flat Top Mountain.....	6500
Mt. Naculan.....	6200
Mt. West.....	6000
Mt. Bliss.....	5759, Barometer.
Mt. Lebo.....	5750, Barometer.
Mt. Williams.....	5200
Coast Range.....	5000 to 6000.

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Height of Camping Places.

Grand Malindang.....	9000
McMurray Flats.....	6100, Barometer.
Mt. Bliss.....	5750, Barometer
Mt. Lebo.....	5750, Barometer
Malindang River.....	3800, Barometer
Catagan.....	1100, Barometer
Magguiaguaiay River.....	50.

(Signed) Robert Schroder.

BAROMETER AND THERMOMETER READINGS.

## Mc Murray Flats.

Date	Time	Thermometer	Barometer
June 6, '06	8.00 A. M.	60 <sup>o</sup>	6050
" 6, "	12 M.	62	6100
" " "	6.00 P. M.	60	6075
" 7, "	8.00 A. M.	60	6075
" " "	12.00 M	63	6100
" " "	6.00 P. M.	60	6075
" 8 "	6.00 A. M.	57	6100

## Mt. Bliss.

June 8, '06	4.00 P. M.	70	5750
June 9, '06	6.00 A. M.	59	5700
" " "	10.45 A. M.	70	5825

## Catagan.

June 9, '06,	6.00 P. M.	77	1160
June 10, '06	6.00 A. M.	73	1100
" " "	12.00 M.	82	1150
" " "	6:00 P. M.	78	1175.
June 11, '06	6.00 A. M.	72	1100

## Tangob (Presidentes) 25 Flevation

" " "	12.00 M.	84	50
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## Misamis (Fort) 40 Elevation.

" " "	6.00 P. M.	84	100
" 12 "	6.00 A. M.	75	30
" " "	12.00 M,	89	70

## Overton, 20 Elevation.

June 13, '06	6.00 A. M.	75	25
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(Signed) Robert Schroder.

## Thermometer Readings on Mount Bliss.

Morning	Mid-day	Evening	Morning	Afternoon.
May 27, 1906				
6 A. M. 54 <sup>o</sup>	: 12 M. 69 <sup>o</sup>	: 6 P. M. 64	: fine and clear	: Cloudy
May 28, 1906.				
6 A. M. 55	: 12 M. 70	: 6 P. M. 63	: Fine and clear	: Cloudy and little rain.
May 29, 1906.				
6 A. M. 61	: 12 M. 67	: 6 P. M. 61	: Foggy and rain	: Changeable, foggy and clear.
May 30, 1906.				
6 A. M. 63	: 12 M. 69	: 6 P. M. 62	: Foggy	: Clear and fine
May 31, 1906.				
6 A. M. 61	: 12 M. 67	: 6 P. M. 62	: Fine and clear	: Fine and clear
June 1, 1906.				
6 A. M. 61	: 12 M. 67 :		: Foggy	

## Readings on top of Grand Malindang.

June 4, 1906.				
6 A. M.	: 12 M. 57	: 6 P. M. 53 <sup>o</sup>	:	: Fog and heavy rain
June 5, 1906.				
6 A. M. 50	: 12 M. 58	: 6 P. M. 54	: Clear	: Foggy to clear.
June 6, 1906.				
6 A. M. 52	: 12 M. 58	: 6 P. M. 53	: Clear	: Foggy to clear.
June 7, 1906				
6 A. M. 49	:	:	: Clear	



CAMP OVERTON, Mindanao, P. I.

July 15th, 1904.

The Adjutant General,  
Department of Mindanao,  
Zamboanga, Mindanao.  
(Thro' Military Channels).

Sir:

Pursuant to S. O. No. 84, Camp Overton, Mind., June 10, 1904, I have the honor to make the following report of an exploring expedition made under my command from this post to Margos sa Tubig, Mind.

At 10:30 A. M., June 12th, the detachment left Camp Overton on Quartermaster's launch West Point for Misamis, arriving there at about 3:00 P. M.

After disembarking, the detachment was put in the old Spanish barracks of the fort, getting in just in time to escape a downpour of rain which continued intermittently until about 5 o'clock the following morning.

During the afternoon I went up town to inquire for a guide and was referred to a Visayan named Ramon Gallardo whom I went to see and found to be a man of some intelligence, having been Captain in the insurgent army.

After a few moments' conversation he said that he would accompany us for 3 or 4 days or until we could get other guides.

On the 13th, we started for Mt. Malindang, this being our first objective point, and as it was very warm, the trail muddy and in places rough, and the cargadores pretty heavily loaded made only about five miles. Our camp was at the house of Miguel Jalim, a Visayan. This house with two or three others in the vicinity is called Pulut. During the afternoon Private Myers killed a fine wild hog.

On the morning of the 14th, I sent Cook Ruhl and one of the cargadores, who had developed some fever, back to Misamis with instructions to have the operator (an

old member of my troop) telegraph the Quartermaster at Camp Overton for the launch in order that they could return. The sending them back being at the advice of Dr. Coffin.

We marched this day about eight miles getting into the Subano country and made camp on Maquinagay river near the rancheria of Datto Dananto. On talking with him through Gallardo, who is a good interpreter, it was ascertained that Americans had been to this place before.

At this camp I was struck with immense leaves of the Elephant's ear plants growing about, and one which was measured was  $7\frac{1}{2}$  feet long by 4 feet 7 inches wide.

June 15th: After about  $2\frac{1}{2}$  hours' march we came to the rancheria of Catagan, Datto Anib, and rested here for about one hour.

It might be of interest to state that from this place on no civilized man had ever before trodden, and that the people are all Subanos until Cumularang, near Dumaquilas Bay was reached. The people of Cumularang are Maguindanao Moros, and the town being so near the bay had been visited before our advent by the Spaniards and an American official or two, though we were the first United States soldiers there.

Anib volunteered to accompany us to Malindang as a guide and we proceeded on our journey camping this night on the Malubug River making a distance of 7 miles for the day. The travel was now hard as it was in the mountains.

At this camp one of the cargadores found a poor grade of honey made by bees considerably smaller than ordinary house flies.

June 16th: Our march was a hard one, up, up, up, as we were ascending one of the highest peaks in the Philippines, and also one on which no white man had ever before been. At 2:00 P. M. we made a dry camp at an altitude of about 7000 feet and I calculate that we marched only about 5 miles this day, this on account of our rough and steep route. On this mountain there were many immense trees the

resin of which copal, has a high commercial value, being used in the making of varnish.

On the 17th, we left camp at 6:00 A. M. sharp, arriving at the top of the mountain at 8. Our disappointment can be imagined when from the top of this mountain we could see that we were not on the peak of Malindang, and to reach it we must go down a deep gulch then up the other side which would have taken probably two days.

On account of the slow time we were making in an attempt to climb Malindang, the very short distance we still were from Misamis and the thought that our rations might run short at a bad time or place I decided to continue on our journey leaving Malindang unclimbed.

The mountain we were on was a peak almost exactly like Malindang and very slightly lower, only a matter of probably 150 or 200 feet. We must have been at 8:00 o'clock in the morning of the 17th June at an altitude of 8000 or more. This mountain we named Lebo after our regimental commander. Lieut. Holcomb took many observations and will give bearing, height, etc. of it as well as of Malindang in his map. I feel pretty certain that Mt. Lebo is hidden from the coast by Malindang and is between 8000 and 8500 feet high.

Our attempt at Mt. Malindang can in no way be considered a failure and we would have ascended this peak, in addition to the one we did ascend, had we not had a long trip before us where all of our rations would be apt to be needed. As it was we were right up against Malindang but it would have required time to make the ascent.

We spent about an hour on top of Mt. Lebo then started forward on our journey to Margos sa Tubig via Cumularang.



## ITINERARY OF CAPTAIN C. C. SMITH'S EXPEDITION.

Left Misamis June 13, 1904, marched 5 miles to Pulput.

"	14	"	"	8	"	" Datto Danunto, Maquinagay River.
"	15	"	"	7	"	" Malubug River,
"	16	"	"	5	"	(Dry Camp on " (Malindang, r. slopes, " (Sub-peak Lebo.
"	17	"	"		"	2 hours to summit Mt. Lebo (sub-peak of Malindang.
"	"	"	"		"	To reach (Malindang Peak) we must (have gone) down

a deep gulch then up the other side which would have taken probably two days.

## MEMORANDUM FOR GENERAL BLISS.

The Mount Malindang region was explored and mapped by a small party under Captain James P. Jervey, Corps of Engineers, with Major Edgar A. Mearns, Surgeon. The party was also accompanied by Mr. Wallace I. Hutchinson, Philippine Bureau of Forestry. The great Malindang range, reaching an elevation of 9000 feet, was explored on seven mapped routes between May 9th and June 12th, 1906. A monument was placed upon the highest peak, known as Grand Malindang; and a map and report embodying photographs and topographical drawings, ~~XXXXXXXXXXXXXXXXXXXX~~ klinometer sightings, altitudes of peaks, barometric and thermometric readings is being prepared. Major Mearns and Mr. Hutchinson collected 1000 good Botanical specimens. The highest parts (3000 to 9000 feet) were found to be forested with large oaks and evergreen trees of two kinds, resembling cedar and hemlock. The raspberry was represented by 5 species. A wild grape was discovered. A violet and other temperate zone plants were collected. The highest 1500 feet of Grand Malindang is mantled with moss covering not only the earth but the trunks and limbs of the trees, which latter have an average height of 40 feet at the summit. From the moss sufficient water could be wrung out for drinking; but a spring and a stream beginning at the apex supply good water.

Major Mearns, for the U. S. National Museum, made a large general collection in zoology, including 240 birds and 80 mammals, with new genera and species.

## UNITED STATES SIGNAL CORPS.

TELEGRAM RECEIVED.

27 WA. M. 169 O. B.

Misamis, Apr. 14 Filed 15. 1906.

Scott, 1st Cav.

## Zamboanga.

Retel yesterday Mount Malindang unknown here, mount Maladin or Malindang probably the correct or local name for the mount Malindag mentioned in telegram. This mountain some thirty miles directly west of Tudela, a barrico of Misamis. Believed best route is from Misamis and Tangob Mountain can in this way be reached in about two days. Would be necessary to pick up guides locally in the mountains. Water hard to find in some places. Capt. Smith, U. S. A. in going through this country some five years ago went one day without water. Believed sufficient water can be found in the mountains for the trip. American named Ingersoll living Misamis could act as interpreter speaks spanish, visayan, Moro and some Subano, native in vicinity Malindag speak subano only, rarely come down to the coast. Honey, chickens, Carmites and some game can be obtained in this country.

Know little regarding Dapitan route into the mountains and practically nothing of route from Tacuran.

Campbell.

Constabulary.

4:20 P. M.



Headquarters Department of Mindanao.  
Office of the Chief Surgeon,  
Zamboanga, P. I.

July 7, 1906.

Colonel Willian S. Scott,  
Asst. Chief Philippine Constabulary,  
Zamboanga, Mindanao, P. I.

Sir:-

In appreciation of the very valuable assistance which you gave in a Geographical and Biological reconnaissance of the Malindang Mountain Group, which was made under my charge during May and June, 1906, I would say that, you, in addition to personally securing the necessary preliminary information, authorized Lieutenant F. H. Campbell, commanding the post of Misamis, to assist in every possible way.

Lieutenant Campbell gave us every assistance, and extended much personal courtesy and hospitality to the members of the party. The route which Lieutenant Campbell recommended proved feasible, though difficult; and all of the information furnished by him proved to be correct.

Lieutenant James L. Wood was detailed to accompany the expedition, with six Constabulary soldiers, who were invaluable as interpreters, and in acting as escort to the seven parties sent out from the base camp at Catagan. Lieutenant Wood, in addition to his extremely agreeable society, with his Constabulary, personally explored the entire valley of the Malabug River, tracing its branches to their sources in the Malindang Mountains in the vicinity of Mts. Lebo, Bliss, and Bintad: and he also made an independent "hike" to the Moro town of Balinsung, beyond the head of the gulf, for the purpose of trying to secure a guide to the peak of the Grand Malindang. He visited all of the Sulano and Moro pueblos in those directions, and must have secured much information which should prove to

be valuable. He kindly allowed me to cull from his personal data essential to mapping his trails on our map.

After Lieutenant Wood was ordered away to the command, a company of Constabulary at Iligan, his assistance did not cease, but, by correspondence and attending to commissions, secured information, instruments and supplies and got them to us.

The willing and efficient assistance of the Constabulary is, I assure you, most highly appreciated.

I have the honor to be

Very respectfully,

(Signed) Edger A. Mearns,

Major, Surgeon, U. S. Army,  
Chief Surgeon.

Telegram

Zamboanga, June 12th, 1906.

Mearns, Misamis.

Department Commander has directed Col. Steever to send launch for your party today, and to send them over trail to Malabang to catch Sabah Thursday afternoon. In absence of further instructions, you may bring Private Schroder, Engineers, with you to Zamboanga, as requested. Lurcabit.

Williams, M. S.



Headquarters Department of Mindanao.

Office of the Chief Surgeon.

Zamboanga, P. I., April 14, 1906.

To

BRIGADIER GENERAL

TASKER H. BLISS, U. S. Army,

Commanding Department of Mindanao.

Sir:-

Respecting a biological and geographical reconnaissance of Mt. Malindang, Mindanao, P. I., the following plan is suggested in accordance with your request:

PLAN.

To start as soon as an outfit can be assembled and to spend twenty days as high on the mountain as water can be found, gathering specimens to illustrate the gross surface geology, fauna and flora of the mountain region; also to roughly determine the altitude of Mt. Malindang and the extent of its vertical life zones. Mapping the country should be done in another connection.

A large party cannot be handled, owing to the difficulty in transporting food and water. The following would suffice:

PERSONNEL

Major Mearns in charge.

One Private first Class, Hospital Corps, (to be selected by Surgeon, Post of Zamboanga.)

A non-commissioned officer and three Privates of the line equipped for the field. (to be selected for aptitude by Major Mearns.)

18 Cargadores. (to be found near the starting point.)

1 Interpreter (native.)

1 Guide ( " )

MATERIALS.

Rations for thirty days for enlisted men.

Usual rations for native employees during service.

3 Aneroid barometers (alike; one to read at coast, 2 for comparison in field).

1 Ordinary thermometer.

2 Metal (tin?) containers for alcoholic specimens (to be made by Q. M. Department.)

Very respectfully,

(Signed) Edgar A. Mearns,

Major, Surgeon, U. S. Army.

HEADQUARTERS DEPARTMENT OF MINDANAO.

ZAMBOANGA, P. I.

April 25, 1906.

Commanding Officer,  
Zamboanga, P. I.

Sir:

The Department Commander directs that you send Private First Class Jackson C. McMurray, Hospital Corps, to report to Major E. A. Mearns, Surgeon, U. S. Army.

This man will be provided with the usual field equipment, and one suit of heavy underwear should be taken to be worn in high altitudes.

Very respectfully,

(Signed) J. R. Williams,

Major, Military Secretary.

To Chief Surgeon.



## HEADQUARTERS DEPARTMENT OF MINDANAO.

ZAMBOANGA, P. I.

April 25, 1906.

Commanding Officer,

Malabang, P. I.

Sir:

The Department Commander directs that you send Sergeant John A. Leakins, and Private William S. Mott, Company D, and Private Frank Van Allen and Daniel W. West, Company B, 19th Infantry, to Zamboanga immediately after the completion of the Division Infantry Competition, by launch, if necessary, to report to Major E. A. Mearns, Surgeon, U. S. Army.

These men will bring the rifle and the usual field equipment and not less than 50 rounds of ammunition per man. One suit of heavy underwear should be taken by each to be worn in high altitudes. Sergeant Leakins will bring National Museum shot-gun in addition to his equipment.

Very respectfully,

(Signed) J. R. Williams

Major, Military Secretary.

NG

To Chief Surgeon.

Misamis, P. I.

May 22, 1906.

Dear Major Mearns:-

We went from here to Jimenez, and after getting very encouraging information and a guide who promised to take us to the top of the mountain in three to four days, I received a telegraphic order to return to Zamboanga at once. I protested, and asked that Earle at least be allowed to continue the expedition, but both requests were disapproved and I was directed to return to Zamboanga by way of Malabang, so my hopes of reaching Malindang are destroyed.

I believe that the top can be reached from Jimenez in three to four days. There is water reported to a point within seven hours of the top. The trail is very rough, and in some places passes over ravines on logs which the Subano, with whom we talked, said could not be crossed by men wearing shoes, but I think it can be done. If you go to Jimenez look up the school teacher, Mr. Ligon, and the police sergeant. The latter will send out for Captain Telleno, a Subano who knows all about the mountains and can furnish a reliable guide. Telleno says he has heard that there was a lake near the road to Malindang, and about a day from the top. This is also confirmed by an insurgent colonel from Oroquieta. This road is a Subano trail to Dapitan, and is still used so is at least passable. In Jimenez, a very courteous Spaniard, Senor Osamis entertained us royally. We marched down here from Jimenez last night and this morning and are pretty weary. Hope to get a banca for Overton today. We will take our cargadores over to Overton and discharge them. Earle will leave a statement of our expenditures. Regards and best wishes to all.

Yours sincerely,

(Signed) J. P. J-----

MALINDANG NOTES.

May 8, 1906. Arrived at Misamis 11:45 A. M., May 8. Lieut Campbell reported no cargadores obtainable. Telegraphed Col. Stever for authority to return launch Nashville to Overton for 20 cargadores. Secured a few local Moro cargadores, and sent out for carabaos to pack the rice and hard bread.

Birds--

Halcyon chloris,  
Chilidon javanica,  
Numenius variegatus,  
Charadrius,  
Munia jagori,  
Pycnonotus,  
Halcyon chloris,  
Crow,  
Haliastur,  
Cinnamon Bittern,  
Cyrtostomus jugularis,  
Anthus rufus,  
Migaturus,  
Lalate terat,  
Artamus.

Common Terns and large flocks of  
Between Overton and Misamis (26 m.) we saw several Sterna bergii,  
the latter following schools of tinge mackerel that leaped high out  
of the sea. One school crossed close in front of our bow and I shot  
one, which appeared to sick, leaving a piece floating.

Tangob 10 M by water (12-14 miles by land trail) for Misamis. Left  
Misamis at 11:20 A. M., for Tangob, sending all rations by sailboat in  
charge of West.

Birds--

Megopalustris ?  
Two fantail  
Flycatcher  
Cyrtostomus jugularis  
Halcyon chloris  
Guava Bulbul  
Artamus leucogaster



Lalage terat  
 Macronous mindanensis  
 Mimenius variegatus  
 Peewee note  
 Orilus chinensis  
 Sarcops calvus,  
 Tanygnathus luconensis  
 Black Concal,  
 Chrysocolaptis lucidus  
 Male monkey's tail measured a 15/100 feet.

Head and right fore and hind feet preserved.

Ate E-bah fruits. Camped on Dignan River at 5 P. M. Shot:

2 monkeys (head and r. f. & h. feet male) and skull female. Eurystomus  
 orientalis, 1 Red-billed Calao, 3 Torcasas, and 1 Columba greseigul Deer,  
 Owls, and goatsuckers heard at night.

May 10, 1918. Left camp in Dignan River at 7 A. M. Rested at Tabid River, where  
 we saw Chalcophaps indica.

Birds--

Oriolas chinensis,  
 Munia jagoi,  
 Haliastur intermedius,  
 Torcasa,  
 several Columba greseigularis,  
 Osmotreron vermans  
 O. axillaris,  
 Guava Bulbul,  
 Fainta 1 Flycatcher,  
 Macronous mindanensis  
 Long-billed large Flower-picker (naked auriculars\*  
 Blk-th. Sunbird,  
 Cockatoo,  
 Tanygnathers luconensis,  
 Bolbobsittans,  
 Pnomturus,  
 Chrysocolaptes,  
 Eurystomus,  
 Crow,  
 Sarcops,  
 Blk-Cuckoo,  
 Artamus,  
 Lalage tirat,  
 Many monkeys.

At Tangob were

Loriculus apicalis,

Oriolus chinensis,  
 Black Cuckoo,  
 Drongo,  
 Cyrtostomus jugularis  
 Pycnonotus goiavier  
 Munia jagori  
 Turtur dussumieri,  
 Excalfactoria  
 Chelidon javanica,  
 Chalcophaps indica  
 Crow  
 Halcyon chloris,  
 Tanygnathus luconensis  
 Macronous,  
 Chrysocolaptes  
 Dicaeum (black and white)

From Anib's place (Catagan), 6 m. west of Tangob near Malabug River we will go to Belinsung, on R. Palinsaling beyond the Malabug River.

Bah-ko-kong Subano (Anib)

do Moro Lanao cargadore.

May 14, 1906.

Left camp at Anib's at 5:50 A. M. At 7 A. M. were at 1625 ft. (Same aneroid that read 850 at Anib's.) Blue Flycatcher, Red-tailed Flycatcher, Muscadivores aenea, Hydracorax, Coranorrhinus, Cornos, Zosterops, Peewee, Centropus javanica, Centropus melanops, Oriolus, chinensis, Dicrurus striatus, Trogon, Nighthatch, Parus Ehapotreron, Hogsings everywhere.

At 9:20	altitude	2810	ft.
" 10	"	3210	"
" 10:45	"	3625	"
" 11:05	"	3900	"
" 11:40	"	4200	"
" 12:45	"	4700	" Peak
" 12:55	"	4800	"

May 15, 1906.

At 7 A. M. " 5230 ft. Williams Peak

The little stream at Catgan is the La-wahpun.



Small rat	Too-boong	Subano
Small Fish	Boog-al	"
"	" Redfin	Pie-at "
Prawn	Goo-lahng	"
Milliped	Le-ab-id	"
Spider	Bahl-ang-how-uh	"
2 White Eggs of bird	Le-hoo-kook	Subano

Birds seen at Catgan on a small stream called La-wah-un by Subanos

May 1906.

1. Microhierax
2. Haliastur intermedia--Abundant--One shot
3. Pithecopaga jeffroyi One May 16
4. Owls heard at night
5. Eurystomus orientalis--Abundant
6. Bridled Swift.Abundant
7. Sarcops caluvs "
8. Oriolus chinensis " Note of W. Meadowlark
9. Pycnonotus goiavier "
10. Munia jagori.
11. Decrurus striatus--Abundant
12. " (small; white stripe across wing). Pir.
13. Orange and black Flycatcher.--Several
14. Trogon
15. Halcyon hombroni--Two shot on Malabug River
16. Corone philippinus
17. Macronous mindanensis..Abundant
18. Irena mindanensis Common--A loud singer.
19. Coranorrhinus leucocephalus--Abundant
20. Hydracorax mindanensis--Very abundant. Many shot
21. Penelopides. Common
22. " one specimen
23. Chrysocolaptes lucidus.--Abundant. One note like Colaptes
24. Thriponax javanica.--Common; much tree hatching.
25. Ivory-billed Woodpecker.--One
26. Iynjipicus--Several seen. Note like Downy.
27. Loriculus apicalis;;Quite numerous
- 28.
29. Tanygnathus luconensis--One
30. Coccyzus haematuropygia--A few flocks.
31. Centropus javanica.--Common greeds
32. " melanops--Abundant
- 33.
34. Iole philippinensis--Common
35. " (larger) one specimen
36. Muscivora aenea--Abundant



37. Phabitreron brevirostris--Common in forest.  
 38. Gallus gallus--Apparently scarce.  
 39. Osmotreron axillaris--Common. One alive at Anib's  
 40. Grasshopper Warbler.--One in brushwood, singing.  
 41. Phylloseopus--One specimen  
 42. Cisticola  
 43. White-browed Blue Flycatcher--Abundant  
 44. Rhinomyias ruficanda--Red-tailed Flycatcher--Abundant  
 45. Oriolus (striate)  
 46. Artamus leucogaster--Abundant.  
 47 Hyloterpe  
 48 Lalage  
 49 Dendrophila  
 50 Parus  
 51 Zosterops

## Names of shells:

Montesco; Mong-ong-ah-lop big low land snail  
 Moro do do  
 Montesco: Bee-oh-koang--Operculate land shell  
 " : Bohr-rhode-sho High spired land snail

## Subano Montesco names:

Sahl-ah-doong Deer  
 Kah-bahl Paradoxurus  
 Bah-bco-ee Pig  
 Kah-boog Fruit Bats  
 Ahn-bough Rats (small) Ree-yah Moro  
 Ro-mat Moneky  
 Ah-no Monkey  
 Lah-ko ?  
 Tink-gak-loong ?  
 me-kah-loh ? } Mammals  
 Tah-kah-sing ?  
 Ah-gah-gong Freshwater Crab  
 Lah-e-no Common little spotted snake.  
 Per-ak-o Subano } Two young in formalin  
 Kah-dong-ok Moro }  
 Ki'a-buk-ong Flying Liazrd Subano  
 Milliped Rahngai (Montesco)  
 Prawn o'dong (Montesco) Gong-ow-wan (Moro)  
 Big Chicking Bug -Tahng-oo (Montesco) Formalin  
 Cicada Tah-koor-ring " "  
 Squirrel Kahl-loh-sooey (Montesco)  
 " Tock-ah-sing (Moro)  
 Freshwater Crab (oh-gahg-gong (moro)  
 " " Ky-att-ong (Montesco)  
 " elongate spiral shell Tee-tee-oh (Montesco)  
 do Toag-poke (Moro)

## First American Expedition to Mt. Malindang.

Suggested by General Wood. Authorized by General Bliss. Planned by  
Dr. Mearns.

## Members of Party.

Dr. E. A. Mearns, W. I. Hutchinson, Philippine Bureau of Forestry.  
Capt. Jervey and Lieut. Earle, Engineer Corps. Lieut. Wood, Philippine Constabulary  
Sargent Leakins and privates West, Van Allen, Mott, 19th Infty. Schröder, Bentley,  
Cragan, Egbert, Co. A. Engineers. Private Jackson C. McMurray, Hospital Corps.  
Sargent Pasandalan and 5 soldiers of the Philippine Constabulary.  
Wenaslao Estrellas--Dr. Mearns Bird shooter.

## Route to Misamis.

Summit Mt. Malindang down main south ridge to place marked Mc Murray  
Flats on blazed tree. (Time one hour). Mc Murray Flats down slope course south,  
to left branch Naculan River and down main Naculan River 8 miles to old camp on  
left bank. Camp indicated by slender pine on right bank, having lower branches  
cut off. From this point cross through saddle of ridge to right and down slope  
until another fork (Bliss River) of Naculan River is reached. Follow this branch  
to where blazed trail on left bank near foot of small fall is visible. Camp  
here. No water between this point and Sabano town of Catagan. Mc Murray  
Flats to camping ground on Bliss River 7 hours. Leaving Bliss River take  
blazed trail up Mt. Bliss (high peak on the left) until camping ground on left is  
reached. Follow connecting ridge 2 miles eastward to summit of Mt. Williams.  
Good blazed trail from this point to Sabano town of Catagan (Datto Anib's )  
camp on Bliss River to Catagan (Datto Anib's) 7 hours. Get Sabano guide at  
Datto Anib's for Misamis or Tangob head of navigation on Misamis Bay. Datto  
Anib's to Misamis by trail one day.



## Itinerary of Expedition.

Expedition left Misamis May 9th, 1906, arriving at Gatagan (Datto Anib's) where a base camp was established May 10, 1906.

Capt. Jervey, Lieut. Earle and Dr. Mearns visited a subpeak of Malindang, which Capt. Jervey named Mt. Williams, May 15, 1906. Altitude 5230 ft. (aneroid). On the same day Dr. Mearns followed the ridge from Mt. Williams to the base of the peak climbed the next day, May 16, 1906, by Capt. Jervey's party and named by him Mt. Bliss. (Same altitude as Mt. Williams, aneroid readings one hour apart; distance between peaks 2 miles.)

W. I. Hutchinson and privates West and Mott visited Mts. Williams and Bliss May 18, 1906. On May 20th privates West and Mott descended the gorge north of Mt. Williams to the Naculan River, following up stream to the divide between the Bliss and Malabug Rivers, situated between Mts. Bintad and Bliss, and ascended to the summit of Mt. Bliss, returning to Datto Anib's via the trail over the summit of Mt. Williams.

On the advice of Datto Anib, Lieut. Wood, with a detachment of Constabulary made a journey on May 19th and 19th to the Moro town of Balinsang, beyond the head of the Misamis Gulf, in search of a guide to the summit of Grand Malindang, but found none. He also visited several Sabano settlements and explored four rivers entering into the Gulf, but found all impracticable for cargadores except the Malabug. After resting one day, Lieut. Wood, with a detachment of Constabulary, spent 3 days exploring the entire course of the Malabug River and its tributaries, visiting the summit of Mts. Bliss and Williams, returning in part by the Malabug and its tributaries to Datto Anib's.

W. J. Hutchinson, private West and a Constabulary soldier, endeavoring to cross the lower course of the Naculan River and reach the main ridge of Grande Malindang, encircled the foot hills of Mt. Williams, May 23 to 25, 1906.



From Catagan (Datto Anib's) to the Maganaoi River a trail leading through the Sabano settlements of Kapatagan and Kimat was followed. No mountain trail existing beyond the Maganaoi River, a course N. 20° W. was followed. through the forest to the south rim (altitude 3200 ft.; aneroid) of the gorge, (estimated depth at this point 1000-1500 ft). through which the Naculan River enters the "playa". The party returned by compass course on the 24th to a point where the trail from Kimat to Naculan crosses the Maganaoi River, traveling the following day via Kimat and the Kapatagan River to Datto Anib's.

On May 26th, word having been received from Capt. Jervey, who, with Lieut. Earle, was engaged in an attempt to reach the summit of Grand Malindang from Jimenez, that he had been recalled to Zamboanga, Dr. Mearns party removed the base camp from Catagan (Datto Anib's) to the summit of Mt. Bliss.

On the same day Lieut. Wood was ordered to Iligan.

ON May 28, 1906, private West and seargent Pasandalan with 4 Moro cargadores were sent to blaze a trail to the summit of Grand Malindang on a route planned by private West. (Fire signals pre-arranged, weather permitting).

#### DATA FOR ITINERARY.

Lieut. Wood.

Catagan to Balinsung and returning to Catagan May 17 and 18.

Exploration of entire upper course of the Malabug River May 19 to 21.

Mr. W. I. Hutchinson, Forester.

Exploration of the east base of Malindang Mts., starting from and returning to Catagan May 23 to 25.

Mearns:

Left Zamboanga on U. S. A. T. Seward, 10 A. M., May 6, 1906.

Arrived at Camp Overton afternoon of May 7.

Left Overton for Misamis on launch May 8.

Arrived at Overton afternoon of May 8.

Left Misamis at noon May 9

Camped on            River, and arrived at Tagob May 10.

Left Tagob at noon and arrived at Datto Anib's house, Catagan May 10.

1906

From Lt. Wood's personal notes.

Lieut. Wood hiked from Anib's to Datto Dima's place May 17, and on the 18th visited Datto Tangui en route to Baluising, and conferred with Mucai, Sultan of Sugud respecting trails to Malindang, Baluising is 2 m. from head of Panguil Bay. Returning tried all rivers between Baluising for route to Malindang (Malabug, Panasalan, Lamian, Dimalaco). (Salog and Vicaya are north of Malindang can be reached from Jiminez.) All rivers impracticable for cargadores except Malabug. The Lamian is now dry.

On May 19 set out to follow the Malabug from point near Katagan, general direction W. At 1350 ft., a river of equal size enters Malbug River on left bank (River going up). At 12:30 P. M. entered the rancheria of Datto Urtoy (Subano). People fled but returned later. After this the river changed direction from W. to N. At 3:45 altitude 2720 ft. Abundance of arawn (wild hemp) along the Malabug, of which built a house for night. Here the river almost canyons. May 30 began to travel NW. to 3000 ft. At 9:30 stream a little smaller than Malabug, these 2 streams separating 3 great streams of Malindang Mts. Ascended the central mountain to take bearings (Camped at Jervey's camp for night, arriving 4:30 P. M.

May 21. 4950 Alt. Williams. In Mr. Wood's opinion this (Williams) peak is the one ascended by Smith. Distance made from Catagan to Williams Peak, estimated (2 days hiking) 20 miles, perhaps not more than 16.

May 21. Mt. Williams till 9:15 waiting for fog and rain to cesse, which it did not. Reached Malabug River at 11:20. Altitude 3350. A short distance (one hour) below it was 3000 ft. Steep, rapid descent. At junction of 2 streams mentioned as separating 3 mountains, arrived at 11:20. Ascended l. branch at 11:40. At 12:30 this stream split into 2 of equal size. Alt. 3550. Took L. fork and soon reached dry river bed. Highest running water (in true Malabug) at 3810 ft.



Further progress impossible, so took spur to L. 1 to 6 P. M. travel to reach what in fog proved to be Mt. Bliss where I camped.

May 21 returned to Catagan.

Anib has much pangasi made of maize and galay, burnt and placed in large urus and sealed, and kept several months.

Leaving Datto Anib's "casa" at Catagan at 6:45 A. M., on May 23, 1906, proceeded Southward along Tanguil trail for about a quarter of a mile and then branched off to the left.

12 minutes	50°	Open, rolling land. Crossed Alagan River. Small stream of water flowing. Arrived at house of Datto Balabag of Kapatagan.
2100 yds.	320°	Another Sabano shack. Open land. Up hill.
6 min.	360°	Forest. 5% slope.
2 min.	360°	" Downhill.
8 min.	360°	" 8% slope.
3 min.	360°	" " "
3 min.	360°	" " "
3 min.	360°	" 5% "
5 min.	40°	" 10% "
8 min.	60°	" Rolling land.
12 min.	20°	Open,, rolling land.
8 min.	330°	Along edge of forest. Rolling land.
6 min.	30°	Open land. Sabano house, owner's name Siotu. Kapatagan River flows 100 yds. west of house.

Left this Sabano "casa" at 8:50 A. M.

10 mm.	330°	Open land, partly cleared, rocky, rough traveling.
15 mm.	330°	Open land, rolling. Crossed Bungabug River which is fairly large but contains no water.

Arrived at town of Kimat consisting of several Sabano shacks. Head man Datto Salimpunu who acted as a guide for the party, from this point on to the Maganavi River.

Elevation of Kimat 1850!

Large clearing in the vicinity of the village planted to corn, rice, etc.

Left Kimat 9:45 A. M.

10 M.	320 <sup>o</sup>	Dropped down 150 ft. from Datto's house to Alimpunu River which is dry at the present time.
7 M.	300 <sup>o</sup>	Forest, uphill, very steep, slippery. Hard traveling.
10 M.	340 <sup>o</sup>	Forest, rolling country.
5 M.	320 <sup>o</sup>	" " "
4 M.	340 <sup>o</sup>	Forest, Crossed Anipias River, which was dry. Long hogbacks running down from Little Malindang
5 M.	320 <sup>o</sup>	Forest. Went down 300 ft. drop into west branch of Maganavi River. No water at this point.
15 m.		Came to running water at 1650 ft. elevation. Aneroid reading: 0 altitude 29.82 in. 1650 " 28.00 " River branches at this point, main stream running S. and Sw. Water disappears a short distance below this elevation. No trail beyond this point.

Rate of travel to this point 2 miles per hour.

Left river bed and followed a general course of 340<sup>o</sup>, cutting out a trail with bolos.

Country passed over rough, rolling, mountainous, covered with forest growth, very few cleared areas. Several open patches of land covered with dense growth of ferns 4 to 6 ft. high and cogon grass.

Traveled from 11:30 to 3:30, most of the distance over a succession of "hog-backs". All stream beds dry and very rocky. No water to be found. Rains very frequent. Party obtained large amount of rain water in short time by using rubber blankets. Camped at 3200 ft. elevation on slope of mountain south of gorge through which the Naculan River flows. This peak is on the right of the gap through which it is possible to see Misamis from camp on Mt. Williams.

Salimpunu's house

From Kimat top of Little Malindang  $230^{\circ}$  (North needle).

Angh from Datto's house at Kimat.

$15^{\circ} 30'$  Estimated distance 3 miles by air line, 6 miles through the forest.

From Kimat returned to the Sabano village near the Kapatagan River. Obtaining a Sabano for a guide we proceeded down the river about a mile and then took a so-called mountain trail, which no one but a Sabano could ever find, arriving at Datto Anib's house at 11:15 A. M.

(Signed) W. I. Hutchinson,

Forester.

Map prepared and drawn under Direction of Captain J. P. Jervey, Chief Engineer, Dept. of Mindanao, by Robert Schroder, Co. A., Engineers.

Biological and Geographical Reconnaissance of the  
Malindang Mountain Group.

Map prepared under the direction of Captain James P.  
Jarvey, Chief Engineer, Dept. of Mindanao, by R.



Southern Interisland Trip, 2500 miles. Sept. 29 to Oct. 19, 1906.

Sept. 29, 1906. Left Manila on the Mindanao at 9:30 P. M.

Sept. 30, 1906. At sea.

October 1, 1906. Went ashore at Laong, Lagan, at noon; steamed up the Catubig River in launch.

October 2, 1906. Rose 4:30 and landed for 2 hours on Cajoagan Island, off N. Samar. During the day we steamed down the east coast of Samar. The party landed at Oras (I did not) at 5 P. M.

October 3, 1906. At 4:30 A. M. the party landed (I did not) at Taft or Tubig. At 9:30 A. M. I landed at Borongan. At 2 P. M. landed at Lanang, on mouth River Lanang on the east coast of Samar and junted until 5 P. M.

October 4, 1906. Landed at Surigao.

(Bucas Island, off Surigao).

October 5, 1906. Awoke lying off Cateel, Mindanao. Went ashore after breakfast and remained until dark; explored a mile along beach, and, taking barota, spent the day on the Cateel River and its tributaries.

(Manay, Mindanao).

October 6, 1906. Awoke off Baganta, east coast of Mindanao. I did not land. The others went ashore early. We soon left for Caraga. I did not land. Landed at Manay at 3 P. M. and hunted for three hours.

October 7, 1906. Landed at Palmas Island at 8 A. M. and returned to ship ("Mindanao") at noon for lunch.

October 8, 1906. At daybreak we visited Patucu and Tumanao on the Island of Sarangani.

(Balut Id., Sarangani Ids.)

October 11, 1906.

At 7 A. M. breakfasted and immediately went ashore and remained all day (on Balut Island).

Spent the day packing at Zamboanga. Left for Jolo, Sulu, 10 P. M.

Spent 7 hours at Jolo and then sailed Siasi. Visited the peak of Bud Dajo.

October 12, 1906.

Siasi. Spent  $1\frac{1}{2}$  hours ashore.

Landed at Loran (Opposite Ubian) Island, and spent the afternoon.

October 13, 1906.

Landed at Tumindao Island (Off Sitanki) and spent the day, all shooting.

October 14, 1906.

Landed at Sandaken, Borneo, just before sunset and left next morning at daybreak.

October 15, 1906.

Spent 2 hours on Cagayan Sulu.

October 16, 1906.

Landed at Balabak and Melville, on Balabak.

Landed at Lumbucan Island.

October 17, 1906.

Landed at the Moro town of Bono Bono, and then hiked 5 miles into the foothills to a Tagbanao village.

Mt. Halcon, Mindoro, Trip.

October 30, 1906. Left Manila on U. S. A. T. (Cutter) "Mindanao" at 8 P. M.

October 31, 1906. Arrived at Calapan, Mindoro, at 6 A. M.

Paid respects to Gov. Offley at his office at once, and called at his house (1½ m. down the coast) at 4 P. M., meeting his mother, wife and 2 children. Were the guests of 1st Lt. Clarke of Scouts, the Quartermaster, who met us on landing. Mrs. Lee Pier (widow of Major L., medical officer of volunteers) is schoolteacher. Advised by Gov. Offley and a prospector named Burris (who preceded) Major White in charge of San Ramon Farm, Zambo.) to start our expedition from a point miles up the coast called ~~Subang~~ <sup>Subaan</sup> where the Conejales, Malero, promised us 7 Manganese and other cargadores.

November 1, 1906. Left Calapan at 9 A. M. in two large bancos reaching Subaan at 3:30 P. M. The conejales met us and took us to his house where I prescribed for his sick wife. It was All Saints' Day, and a fiesta was in progress. The native band came over to the Consejale's house and serenaded us. Our plunder was deposited in the schoolhouse where we slept.

November 2, 1906. Made up our packs and sent out 16 cargadore loads in early morning to the mining camp of Messrs. R. E. Burris and C. T. Bugen. Then made up the balance of cargo into packs for second load. Started at 11 A. M. and marched 10 miles to the Am. camp at ~~Benji~~ <sup>aybay</sup>. Cargadores arrived at 4:30 P. M. Trail thru heavy forest up and down hill. Trail slippery. Raining part of the time.

Alag River.

Bolton River.



## ITINERARY.

Left Manila 7:30 P. M. October 30, 1906, on U. S. A. T. Mindanao.  
 Party accompanied to Calapan by Mr. Horace C. Fletcher. Arrived Calapan  
 daybreak October 31. Left Calapan in two native boats Nov. 1, arriving at  
 Subaan, 9 m. N. W. on the coast, at 3 P. M. Left Subaan 9 A. M. Nov. 2,  
 marched 10 m. (5 air line) S. W. to <sup>Bunaybay</sup> Ginabag River, camping on the mining  
 claims of P. T. Bergen and R. E. Burris. Left Bergen Camp 7 A. M. Nov. 5 and  
 marched S. W. 1 mile to Mangyan clearing on top of hill, named Buena Vista,  
 elevation 1200 feet. Proceeded down S. trail to river named the Egbert, distance  
 one mile; thence 300 yds. down stream to Alag River. Crossed Alag at this  
 point and followed Alag River up stream along east (R.) bank 2 miles to point where  
 the Alag R. forks. Proceeded up east (R) fork (main Alag R.) naming the west  
 (L) fork the Lewton R.) 1 mile; camped at 4 P. M. (Camp No. 2.) Nov. 8, left  
 camp 8 A. M., marched up the Alag  $1\frac{1}{2}$  m. to small falls, thence up small stream  
 entering main Alag R. from the west (L. bank) 300 yards, thence up ridge on the  
 south side of stream (R. bank)  $\frac{3}{4}$  m. to Mangyan clearing at 2500 feet elevation.  
 Camp No. 3 at this point. Small stream  $\frac{1}{4}$  m. down R. slope, to the SW. of camp.

Broke camp 7:30 A. M. Nov. 12, proceeding along trail on S. side of clearing  
 to cogon-covered caingin on crest of ridge, same elevation as Camp No. 3 (2500  
 ft.); thence down Mangyan trail, south, to Alag River. Distance Camp 3 to Alag  
 2 miles. Stream entering Alag R. a few yards above a Mangyan bejuca suspension  
 bridge (7 strands) named the Halcon Bridge. The stream was named the Halcon  
 River. We marched up Halcon R. 50 yards and thence up old Mangyan trail to the  
 right (from left bank of Halcon River), S. W., going up parallel to stream);  
 camped at 3:30 P. M. at 3300 ft. elevation (Camp No. 4). No water found near  
 this camp.

Nov. 3. Broke camp at 6 A. M. Proceeded along ridge trail a short dis-

tance, following it down to caingin area east of ridge summit. Three houses in these clearings; one a mere framework, covered; two covered and inhabited. One large house near S. end of clearing, cleverly hidden (photographed). From this house a Mungyan trail leads down to the Bolton R., where we found plenty of water (as also in a small tributary nearer to the Mangyan house) and cooked breakfast. From camp No. 4 to Bolton R. crossing  $\frac{3}{2}$  m. From Bolton R. proceeded S. E. up ridge 1 mile to elevation of 4500 feet. Camp No. 5. Water, small stream 300 yards down slope to the Sw.

Left Camp No. 5 at 8 A. M. Nov. 17, proceeding along trail on east side of ridge to series of flats at 6300 feet elevation. Camp No. 6, named "Posey Flats" in honor of "Posey". (E. D. ) Merrill, Botanist of the party. Camp No. 5 to Posey Flats distance 1 mile.

Nov. 19, Merrill and Hutchinson completed chopping out a trail to main ridge of Halcon and along the main ridge nearly to the Peak, returning to Camp 6 at dark, wet, hungry and tired. Rained hard until noon.

Nov. 20. Rained nearly all last night. High wind. Rained on.

Baguio Trip. Dec. 21, 1906, to January 5, 1907.

December 21, 1906. Left Manila at 8 P. M. on U. S. A. T. Mindanao for Dagupan en route to Baguio, Benguet, Province Luzon, with General Wood and family and Capt. Langhorne.

December 22, 1906. About 10 A. M. passed 2 islands called Dor Herruarios (Two Brothers). No birds or fish in sight. Sea with moderate swell.

December 23, 1906. Anchored off the bar at mouth of Dagupan. Waited for tide to rise and landed, at Dagupan, about noon, and set out in two coaches with escort for baggage, and reached Twin Peaks at 5 P. M.

December 25, 1906. Rose early. Drove with the post people to chapel at Baguio and heard Christmas sermon by Bishop Brent. Dined at 8 P. M. at the house of Commissioner Forbes (a house-warming function), where I walked with Mrs. Wood, arriving later than the General, who was detained by sending telegrams, and found a shortcut trail and accused us of getting lost.

Am dressing wound of Governor Pack daily (case of liver abscess, traumatic) which keeps me from making any good hikes. The Governor has sent me a pony to ride.

December 26, 1906. Drove to the Hotel with Capt. Langhorne who is shooting today at Trinidad. Walked back through the woods and shot birds.

January 4, 1907. Twin Peaks to Dagupan, Luzon. P. I.



Trip to Curriniao de Salomgue.

January 12, 1907.

Left Manila about noon. About noon, as we steamed out of the River, flocks of *Larus ridibundas* were flying about the shipping; and farther out in the bay were many *Sterna bergii boreotis*. On the river were a great many *Haliastur intermedius*. In the parks of Manila were *Passer montanus*, *Aethiopsar cristatellus*, and *Geopelia striata*.

January 13, 1907.

At sea. No birds seen.

January 14, 1907.

Drove from Curriniao to Laoag, a town of about 50,000 inhabitants. The road was parallel to the seashore.

January 15, 1907.

Preparing specimens all day.

January 16, 1907.

Walked to the mouth of the Rio Laoag from Laoag. At 3 P. M. started for Dingras, where we arrived before dark, distance 11 miles.

January 17, 1907.

Rose early and rode to Padsan, a Tinguane village of non-Christians,  $3\frac{1}{2}$  hours on trail about 16 miles. The trail lay through the valley of the Laoag River, with a broad reach of cultivated lands. The road and trails were mostly between rows of bamboo. Left Padsan at 3 P. M., rode to Dingras, arriving there at dark. ~~Next~~

January 18, 1907.

Rode from Dingras to Laoag, 11 miles.

January 19, 1907.

Hunted down the right bank of the Laoag River. Sun so bright that the moon

was scarcely discernable. Hot! The whole trip was exactly like New Mexico. Banks of sand and wide playas along stream with shallow pools in old river channel. Birds were abundant but of few species.

January 20, 1907.

Visited Tribunal, in which is the Post-Office; also marke; also new rice machine in iron-clad new building with cement floor.

January 20 to 22, 1907.

Went down the R. bank of the Laoag River.

January 23 & 24, 1907.

On January 23 walked out the Vintar road and took the trail over the sandhills. On Jan. 24 drove to Vintar. Many small snakes on Vintar Lake.

January 27, 1907.

Went duck shooting with Capt. Hartman to Paoay Lake, 6 miles. A lake 10 or 12 miles in circumference.

February 5, 1907.

Spent the day hunting ducks on Paoay Lake, starting early.

February 7, 1907.

Walked to the foothills in search of chickens.

February 15, 1907.

Drove in Dr. Piquet's buggy, 2 gray ponies, from Laoag to the lighthouse at Bojeador, and rode a pony of Mr. Auchterlonie to Nagpartian, total distance 34 miles.

February 19, 1907.

Rode with Mr. Auchterlonie to the Burdett manganese mines, at the extreme point of N. Luzon and returned, distance 6 miles. There find high rock bluffs overlook the sea, and a little fishing village. Seriaco brought in 3 *Anas luzonica*, on Feb. 20, from Darigayo Lake.

March 9, 1907.

Rode from Nagpartian to Laoag, 34 miles. Pratincola caprata common at Nagpartian, increasing in numbers to abundance between Bojeador and Laoag.

March 10, 1907.

Laoag.

Nagpartian, Ilocos Norte, Luzon, P. I.

Laoag, Ilocos Norte, Luzon, P. I.

Batac, Ilocos Norte, Luzon, P. I.

San Miguel, Ilocos Norte, Luzon, P. I.

Dingras, Luzon, (Ilocos Norte), P. I.

Paoay Lake, near Laoag, Ilocos Norte, Luzon, P. I.

Currimaos, Ilocos Norte, Luzon, P. I.

near  
Laoag River, above Padsan, Luzon.

Paoay, Ilocos Norte, Luzon, P. I.



Trip to the Batanes and Mt. Mayon, May 19 to June 7, 1907.

In the Batanes group we landed on Batan, at Santo Domingo de Basco. We also tried to land at ~~I~~bayat.

The Batanes Ids. "are situated between the  $128^{\circ} 56' 30''$  East longitude, San Fernando Meridian, and between the  $19^{\circ} 57' 30''$  and  $20^{\circ} 28' 30''$  North latitude. They are at 110 miles distance from the Babuyan islands, 55 from the island of Formosa and 175 from the north coast of the island of Luzon."

"Dry or hot season is from May to August, and the coldest season from November to December and January."

"Batan Island is  $9\frac{1}{2}$  miles long. N.  $35^{\circ}$  E. and S.  $35^{\circ}$  W., and 1 to 3 miles broad."

"Mount Irada, apparently an old volcano, in its northern part, is 3,806 feet above the sea, and thickly covered with trees; the rest of the island is mountainous. There is a high pinnacle rock about half a mile northeastward of the island.

"Batan Island is about 200 kilometers long from North to South and about 4 kilometers wide from east to West."

"To the North of Batan Island at a distance of about 20 miles, is the most important island of the group called ~~I~~bayat which is also the most fertile and half again as large as Batan.

"At 12:45 o'clock P. M., the Island of Fuca was passed. Latitude 18 degrees, 50' N., Longitude 127 degrees, 29' E. This island rises about 400 feet above tide water, and is hilly and mountainous in character. It is approximately ten miles long and 2 miles wide.

June 3, 1907. Arrived at Tabaco before noon. Arranged to ascend Mt. Mayon

June 5 and 5. On the afternoon of June 3 steamed to the town of Tibi, whence we walked a mile or two inland to the hot springs of Pili. On this trip plants and a few shells were gathered.

June 4 and 5, 1907. Ascended Mt. Mayon. Left Tabaco at 10:30 A. M. with Padre (Brother Capuchin) Martin and another Prior. Camped above timber line in cane-grass at 4000 feet. Left camp June 5 at 4:35 A. M. Mr. Carpenter and I reached rim of crater at 8:15 A. M. Returned to camp at 12:15 P. M. reached ship at dark.

No bird seen above the zone of grass (6200 feet).

May 19 and 20, 1907. Mr. Carpenter and I rode from Camp John Hay, Baguio, Benguet, to Camp Wallace, La Union.

Left camp John Hay at 9 A. M. May 19 and rode to the river at the foot of the hill, between Sublaan and Nagillian, arriving at 5:45 P. M. Three soldiers and 2 packers were awaiting our arrival; and we slept in an unfinished shed. The weather was fine until noon when a succession of thunder showers filled the hollows and trail with water. The bridges were poor and three were broken through by our two pack mules. The two packers were inexperienced enlisted men; but no damage was done beyond a slight cut on the flank of one mule. The mules that were ridden by Mr. Carpenter and myself were good saddle animals, and gave no trouble.


On May 20th we rode in to Camp Wallace on good cavalry horses in 4 horses.



May 27, 1907. Arrived at Sto. Domingo de Basao, Island of Batan, early in the morning and remained until the following morning. Mr. Carpenter and I hunted down the coast to the right and into neighboring hills during the morning. Lunched with the Am. Schoolteacher, Mr. Edmunds, an Englishman. During the afternoon I walked across the Island to visit the leper colony. Saw 2 men and 1 woman leper. Mr. Carpenter hunted towards the <sup>ayuga</sup> Yriaya Mt.

April 28, 1907. Attempted to land on Ibayat Island. Two sailors got ashore, but Captain Crosby was afraid of damaging the ship's boats, and General Wood decided to give up the attempt at landing the party in consequence.

May 29, 1907. Arrived at Apari where we remained during the morning. Left Apari at noon and steamed to mouth of Ablug River, intending to row up and shoot ducks; but this scheme was abandoned and we landed on the Island of Fuga near sundown, leaving May 30 at 1 P. M. for east coast of Luzon.

May 31, 1907. Awoke on east coast of Luzon. The mountains look high with fresh landslide marks visible. The only birds up to noon were: 

June 1, 1907. Landed at Casiguran at daybreak and sailed away about 2 P. M. Spent the time collecting on shore.

June 2, 1907. Landed for  $1\frac{1}{2}$  hours at Baler, Luzon. No guns ashore. Collected shells and plants. No mammals seen.

June 3, 1907. Anchored off Tabaco, at base of Mt. Mayon at 11 A. M. (Notes carried back to beginning.)



Itinerary May 19 to June 7, 1907.

(General Wood's party left Manila on U. S. A. T. Mindanao  
May 24).

Mr. Carpenter and Dr. Mearns left Baguio, Benguet to join Genl.  
Wood.

May 19 Left Baguio with pack mules

May 20 Arrived at Camp Wallace.

May 20-24 At Camp Wallace.

May 25 Left Camp W. on U. S. A. T. Mindanao.

May 26 Arrived at Apari, Luzon.

May 27 " " Santo Domingo de Basco, Batan Id.

May 28 Tried to land at Ibayat, returned to Batan.

May 29 Returned to Apari, Luzon. Steamed to mouth of Ablug R.

Landed on Fuga Id.

May 30 Left Fuga Id.

May 31 Off E. coast Luzon. Arrived at Casiguran.

June 1. Landed at Casiguran and left for Belar.

June 2 " for  $1\frac{1}{2}$  hours at Belar.

June 3 " at Tabaco

Steamed to Tibi

Visited hot springs at Pili

June 4 & 5 Ascended Mt. Mayon

June 6 At sea

June 7 Arrived at Manila.

Woodring was the packer who fed me at Sublaan.

Lieut. Arthur G. Williams-Foote, Scout (Englishman). While stationed

Picket on the Rio Grande, 8 Moros were killed by crocodiles within one year. One, an old man, died from the effects of the bite of a crocodile measuring less than 5 feet in length, which tore a large amount of flesh away from his thigh. This case was treated by Dr. Pipes.

Sunday, March 24, 1907. Left Manila at 4 P. M. on S. S. Mindanao. Arrived at Naujan (San Jose) Mindoro at daybreak. Landed at 8 A. M. March 25, and hiked to Lake Naujan.

March 25, 1907. At Naujan (the largest town of Mindoro), we took trail to the big laguna at 9 A. M. and reached the stream at outlet at 11 A. M., walking.

About noon we started up the Naujan River for Laguna de Naujan. The afternoon was spent on the Naujan River and Lake Naujan.

This lake is about the size of Lake Buluan, Mindanao. It is bordered by lotus, which was the only water lily I saw. The shallows are densely grown with eel-grass (*Valisneria*), which has the pistillate flowers lowered by a spiral twisting of the flower stem. I saw many fruiting plants and gathered some which were lost.

March 27, 1907. Passed through San Bernardino Straits, where numbers of small white terns were flying about the shores of small, rocky islands containing many caves.

March 28, 1907. At Legaspi, Genl. Wood, Col. Hoff and Capt. Dorey went up to the post of Camp Daraga to inspect at 7 A. M. Dr. Freer and I remained aboard until 9 A. M.

6.

In the afternoon rode to about 2500 feet on Mt. Mayon.

March 30, 1907. Landed at Lucena at 2 P. M. and remained 3 hours.

Woodring, packer, rode with Genl. Wood from Manzanilla to San Luis.